Gold Standard
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TEMPLATE

KEY PROJECT INFORMATION & PROJECT DESIGN DOCUMENT (PDD)

PUBLICATION DATE **14.10.2020**
VERSION **v. 1.2**
RELATED SUPPORT
- **TEMPLATE GUIDE Key Project Information & Project Design Document v.1.2**

This document contains the following Sections

KEY PROJECT INFORMATION

GS ID of Project	GS7801
Title of Project	Saros Wind Power Plant
Time of First Submission Date	19/01/2020
Date of Design Certification	
Version number of the PDD	05
Completion date of version	27/12/2021
Project Developer	Boylam Enerji Yatırım Üretim ve Ticaret A.Ş.
Project Representative	Life İklim ve Enerji Ltd. Şti.
Project Participants and any communities involved	-
Host Country (ies)	Turkey
Activity Requirements applied	☐ Community Services Activities ☒ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A
Scale of the project activity	☐ Micro scale ☐ Small Scale ☒ Large Scale
Other Requirements applied	-
Methodology (ies) applied and version number	ACM0002 Version 20.0
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A
Project Cycle:	☐ Regular ☒ Retroactive

Table 1 – Estimated Sustainable Development Contributions

Sustainable Development Goals Targeted	SDG Impact	Estimated Annual Average	Units or Products
13 Climate Action	Emission reductions	313,081	VERs
8 Decent work and economic growth	Contribution to quality of employment	Trained workers, 24 persons	Numbers
7 Affordable and Clean Energy	MWh of renewable energy generated	483,000	MWh
6 Clean water and Sanitation	Avoiding wastewater	11,961,810	m3/y

SECTION A. DESCRIPTION OF PROJECT

A.1 Purpose and general description of project

Boylam Enerji Yatırım Üretim ve Ticaret A.Ş. (hereafter referred to as "Boylam Enerji") plans investing into a new wind power project called Saros Wind Power Project (hereafter referred to as the "Project" or "Saros WPP"), which involves installation and operation of 137.997 MWe/137.997 MWm wind power plant. The project consists of 27 turbines whose capacities can be expressed as 27 x (5.111 MWe/ 5.111 MWm). The license of the project was issued by Energy Market Regulatory Authority (EMRA) on 18/10/2012.[1] The generated energy will be fed to the grid at Çanakkale Çan TM transmission line. [2]

An estimated electricity net generation of 483,000 MWh per year by the efficient utilization of the available wind energy by project activity will replace the grid electricity, which is constituted of different fuel sources, mainly fossil fuels.[3] The electricity produced by project activity will result in average emission reduction of 313,081 tonnes of CO2e/year and 1,565,405 tonnes of CO2e/year for first crediting period. Moreover, project activity will contribute further dissemination of wind energy and extension of national power generation. Saros WPP will have an operational lifetime of 25 years.

The project will help Turkey to stimulate and commercialize the use of grid connected renewable energy technologies and markets. Furthermore, the project will demonstrate the viability of grid connected wind farms which can support improved energy security, improved air quality, alternative sustainable energy futures, improved local livelihoods and sustainable renewable energy industry development. The specific goals of the project are to:

- reduce greenhouse gas emissions in Turkey compared to the business-as-usual scenario;
- help to stimulate the growth of the wind power industry in Turkey;

[1] Licence has been revised according to 27 turbines on 14.01.2020.
[2] Please see Generation License
[3] Please see Generation License

- create local employment during the construction and the operation phase of the wind farm;
- reduce other pollutants resulting from power generation industry in Turkey, compared to a business-as-usual scenario;
- help to reduce Turkeys increasing energy deficit;
- and differentiate the electricity generation mix and reduce import dependency.

As the project developer, Boylam Enerji believes that efficient utilization of all kinds of natural resources with a harmony coupled with responsible environmental considerations is vital for sustainable development of Turkey and the World. This has been a guiding factor for the shareholders towards the concept of designation and installation of a wind power project. Other than the objective of climate change mitigation through significant reduction in greenhouse gas (GHG) emissions, the project has been carried out to provide social and economic contribution to the region in a sustainable way. The benefits that will be gained by the realization of the project compared to the business-as-usual scenario can be summarized under four main indicators:

i. Environmental

The project activities will replace the grid electricity, which is constituted of different fuel sources causing greenhouse gas emissions. By replacing in the consumption of these fuels, it contributes to conservation of water, soil, flora and faunas and transfers these natural resources and the additional supply of these primary energy sources to the future generations. In the absence of the project activity, an equivalent amount of electricity would have been generated from the power plants connected to the grid, majority of which are based on fossil fuels. Thus, the project is replacing the greenhouse gas emissions (CO2, CH4) and other pollutants (NOX, particulate matters) occurring from extraction, processing, transportation and burning of fossil-fuels for power generation connected to the national grid.

ii. Economical

Firstly, the project will help to accelerate the growth of the wind power industry and stimulate the designation and production of renewable energy technologies in Turkey. Then, other entrepreneurs irrespective of sector will be encouraged to invest in wind power generations. It will also assist to reduce Turkey’s increasing energy deficit and diversify the electricity generation mix while reducing import dependency, especially natural gas. Importantly, rural development will be maintained in the areas around the project site by providing infrastructural investments to these remote villages.

iii. Social

Local employment will be enhanced by all project activities during construction and operation of wind farm. As a result, local poverty and unemployment will be partially eliminated by increased job opportunities and project business activities. Construction materials for the foundations, cables and other auxiliary equipment will preferentially be sourced locally. Moreover, as contribution of the project to welfare of the region, the quality of the electricity consumed in the region will be increased by local electricity production, which also contributes decreasing of distribution losses.

iv. Technological

Implementation of the proposed project will contribute to wider deployment of wind power technology in local and national level. It will demonstrate the viability of larger grid connected wind farms, which will support improved energy security, alternative sustainable energy, and renewable energy industry development. This will also strengthen pillars of Turkish electricity supply based on ecologically sound technology.

A.1.1. Eligibility of the project under Gold Standard

The project activity meets the eligibility criteria as per section 3.1.1 of GS4GG Principles & Requirements document as described below:

- The project applies methodology ACM0002, Version 20, which is an approved methodology under Gold Standard.
- The project type is power generation using Wind Energy which is an eligible project type as it is in accordance with 1.1.1 a) and 1.1.1 b) of the Eligible Project Types & Scope under Renewable Energy Activity Requirements.
- The project activity results in displacement of electricity from thermal power stations while contributing to sustainable development of Turkey. Hence, the project contributes to the Gold Standard Vision and Mission.
- Wind power is an approved project type and does not require approval from Gold Standard.
- This project activity is not associated with geo-engineering or energy generated from fossil fuel or nuclear, fossil fuel switch, nor does it enhances or prolongs such energy generation.

General Eligibility Criteria under Renewable Energy Activity Requirements Project Type: As discussed above, the project type is eligible.

A.1.2. Legal ownership of products generated by the project and legal rights to alter use of resources required to service the project

The project participant Boylam Enerji Yatırım Üretim ve Ticaret A.Ş. is the legal owner of the project and has the legal rights for the VER credits that will be issued under Gold Standard.

A.2 Location of project

The project is located in Turkey which is not located in an HCV area[4]. Thus, the project is eligible. The Project site lies approximately 11 km to the north-west of Çan District and 19 km to the east of Çanakkale Province city center.

In addition, there are number of settlements near the project area; the closest settlement to the project is Kocalar village and the distance of the nearest turbine to the village is 1.15 km. Location of the project is given below in Figure 1.

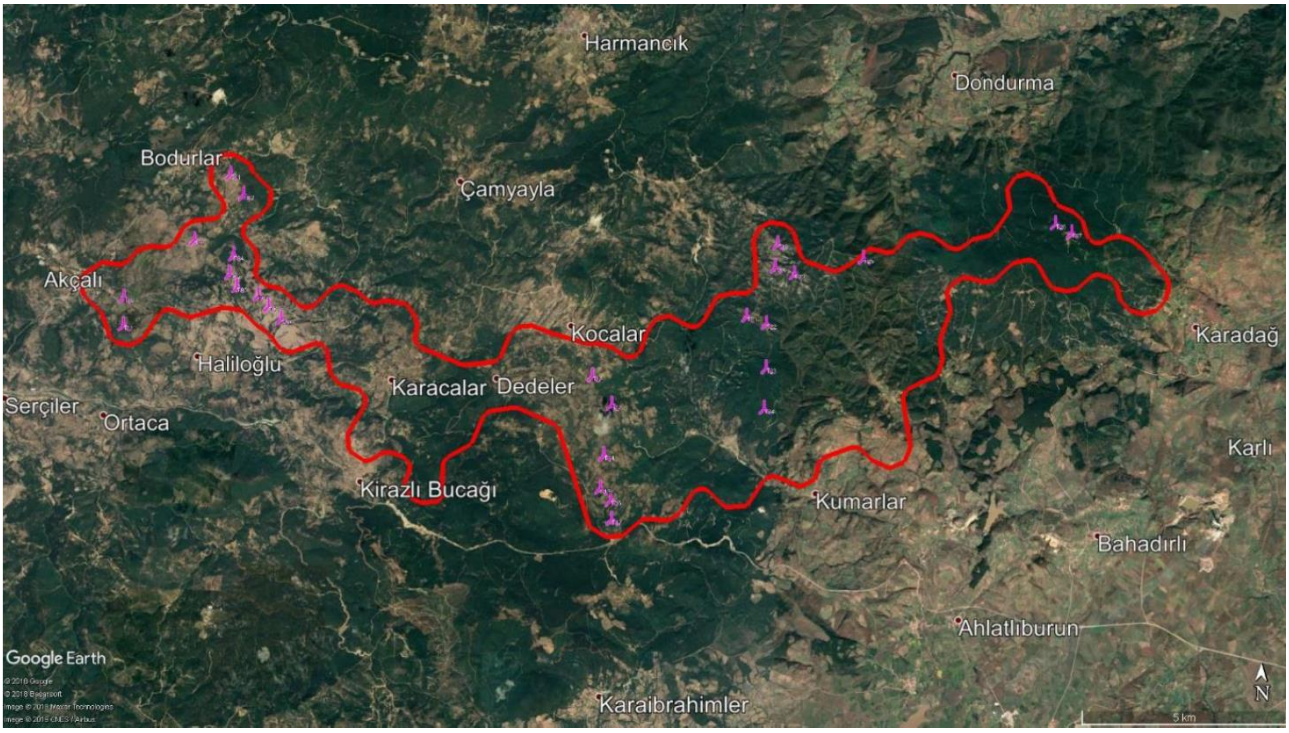

Figure 1. Geographical Placement of Saros Wind Power Plant[5]

Table 2. Geographical Coordinates of the Wind Turbines of the Project Activity[6]

Wind Turbine No	Longitude (E)	Latitude (N)
1.	470872	4440020
2.	471251	4439494
3.	470113	4438290
4.	471137	4437911
5.	471099	4437430
6.	471295	4437106
7.	471812	4436929
8.	472070	4436658

[4] Please see Ecosystem Assessment Report, page 218-219

[5] Please see ESIA Report

[6] Please see Generation License

9.	472391	4436359
10.	468406	4436806
11.	468469	4436096
12.	480232	4435123
13.	480739	4434423
14.	480580	4433174
15.	480516	4432364
16.	480778	4432091
17.	480815	4431618
18.	484791	4438561
19.	484733	4437970
20.	485218	4437814
21.	484042	4436717
22.	484531	4436538
23.	484543	4435435
24.	484514	4434431
25.	486961	4438271
26.	491722	4439215
27.	492121	4438991

A.3 Technologies and/or measures

According to the Generation License, of 27 turbines whose capacities can be expressed as *27 x (5.111 MWe / 5.111 MWm)*. GE Wind Energy GmbH is decided as equipment provider due to the outstanding features of its product regarding safety factors, simple durable design for low maintenance and long-life operation, high efficiency, and for fine visual appearance.

The key parameters about the technical design of the selected model GE 5.3 - 158 turbines are listed below in Table 2. Electricity transfer from turbine to transmission line can be seen in Figure 2.

Table 3. Technical Specifications of Turbines[7]

Specification	GE 5.3 - 158
Rated Power (kW)	5,300
Flexible power ratings (kW)	5,000 - 5,500
Power in service (kW)	5,100
Rated Output Speed (m/s)	13-15
Rotor Diameter (m)	158
Hub Height (m)	101-121
Num. of Blades	3

[7] Please see ESIA Report, page 29

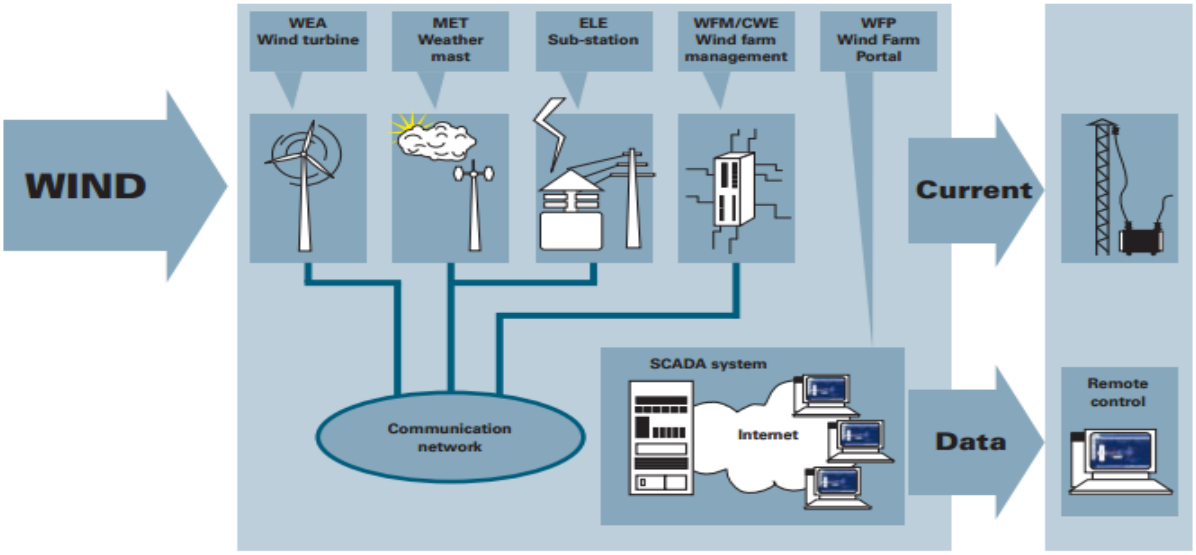

Figure 2. Electricity Transmission from Turbine to Transmission Line

Technical lifetime of Saros WPP is determined by using the "Tool to determine the remaining lifetime of equipment (v.1)". In the tool it is stated that;

Project participants may use one of the following options to determine the remaining lifetime of the equipment:

a) Use manufacturer's information on the technical lifetime of equipment and compare to the date of first commissioning;
b) Obtain an expert evaluation;
c) Use default values.

For the project option (c) is used. So, in the tool it is said that default lifetime for the onshore wind turbines is 25 years. In addition to this, operational lifetime of the project is 49 years. With data taken from the Generation License, Plant Load Factor (PLF) is calculated as follows;

PLF= Annual Gen. / Installed Cap. (MWe)*(working hours)
=483,000/(137.997*8,760)
= 0.3995 (%39.9)

The project activity will achieve emission reductions by avoiding CO_2 emissions from the business-as-usual scenario electricity generation produced by mainly fossil fuel-fired power plants within the Turkish national grid (**Figure 4**). Total emission reduction over the 5-years crediting period is expected to reach **1,565,405 tCO_2e** with the assumed total net electricity generation of **483,000 MWh per year**.

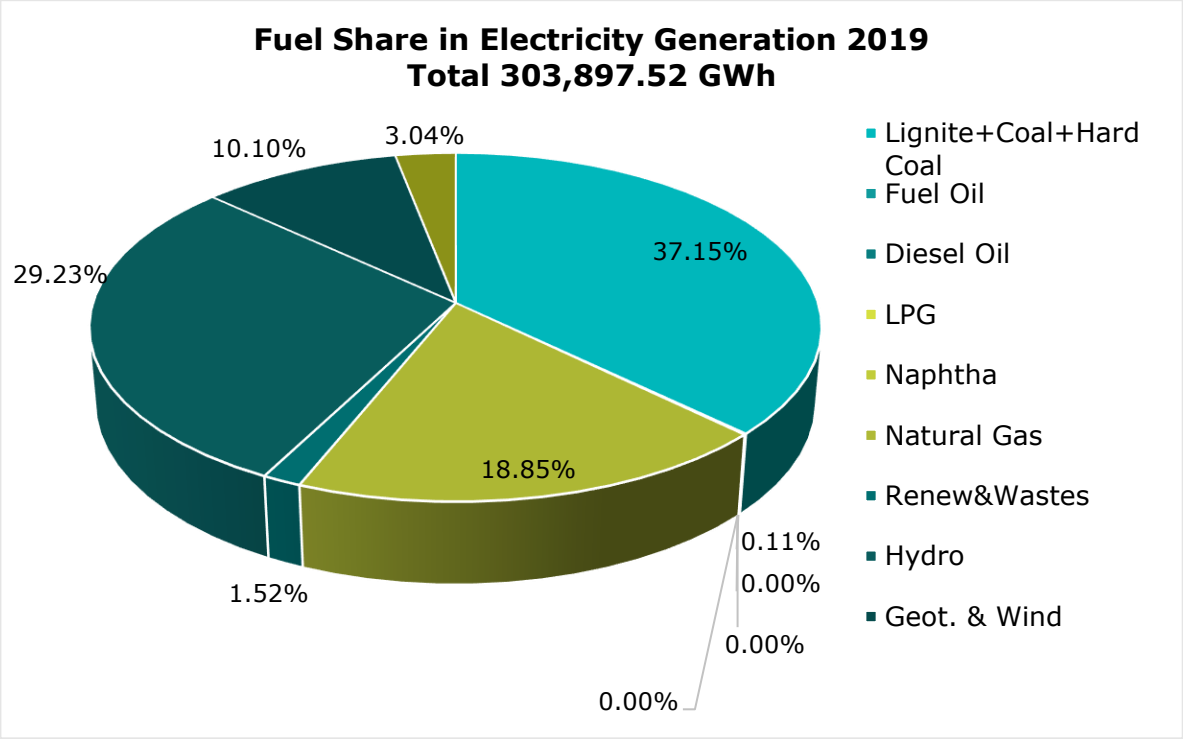

Figure 3. Fuel Share in National Electricity Generation of Turkey.[8]

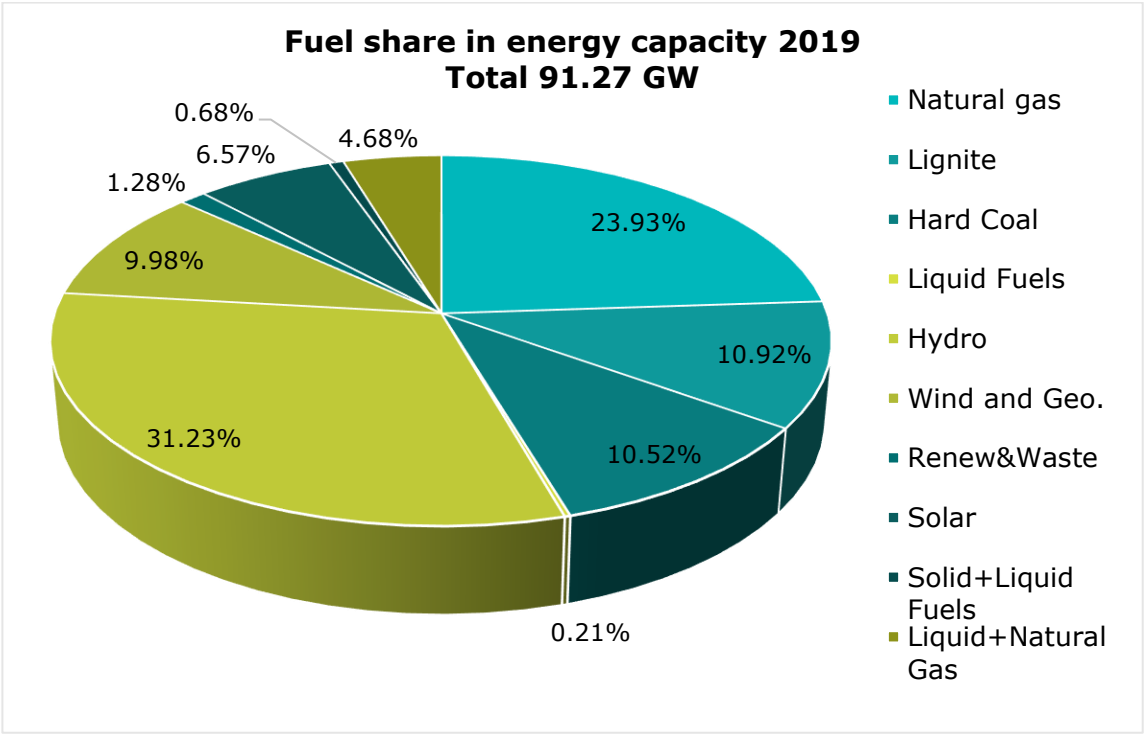

Figure 4. Fuel share in national energy capacity of Turkey.[9]

[8] Please see the registered CM Excel

[9] Please see the registered CM Excel

Although Turkey has a very good wind resource, substantial space, a reasonably good electrical infrastructure and an approaching shortage of electricity; it uses negligible capacity of its onshore potential, which is estimated as 48 GW[10], by generating only 8.32% of its national electricity. Lack of attractive incentives and tax advantages, limited grid access and restricted turbine supply [11]constitutes the major barriers in front of the wind energy.
Renewable energy law, enacted in 2005, which had amendments in end of 2010 regarding feed-in tariffs, stipulates a purchase obligation by the retail companies for 10 years with a purchase price 7.3 USDc/kWh (~5.5 €c/kWh) for the power plants put in operation by end of 2015. This tariff is much below the average remuneration in the leading wind markets and does not constitute a sufficient incentive for investments in little experienced wind energy sector of Turkey. The revenues calculated according to these regulations are considered in the investment planning of the projects and does not lead to returns that let the project be profitable or attractive for capital investors and lenders.
These numbers and figures show the contribution of a wind power project like Saros WPP to the development of environmental friendly electricity generation instead of above described Turkey's mix of hydroelectric and fossil fueled power plants, which are better known and financially more attractive from an investor's point of view.
The emission reductions would not occur in the absence of the proposed project activity because of various real and perceived risks that impede the provision of financing.
Saros WPP, as a large wind power plant project, will serve as a perfect project to demonstrate long-term potential of wind energy as a means to efficiently reducing GHG emissions as well as to diversifying and increasing security of the local energy supply and contributing to a sustainable development. Wind driven turbines will rotate in generators and electricity generated here will be transferred to the grid for consumer without any greenhouse gas emissions. The Gold Standard certification shall help to realize this seminal technology by providing an adequate compensation for the lacking financial incentives in the Turkish renewable energy market.

Generation of emission reduction and by the way crediting period will start with the first day of documented electricity supply to the national grid. The first 5-year crediting period is from 17th of October 2020 to 16th of October 2025. Applying the approved methodology to the project annual average amount of 313,081 tCO_2e emission reductions is estimated to be achieved by producing 483,000 MWh/year electricity. In each year the amount of VERs actually generated by the project will vary depending on the metered net electricity supplied to the grid, but totally 1,565,405 tCO_2e emission reductions is expected over the period of 5 years and distribution of minimum quantity versus years is listed in Table 3.

[10] Please see Dergipark Page 4

[11] Please see TWEA July 2019

Table 4. Estimated Annual Emission Reductions of the Project Over the Crediting Period

Years	Annual Estimation of Emission Reductions in Tonnes Of CO_2e
17.10.2020-31.12.2020	65,189
2021	313,081
2022	313,081
2023	313,081
2024	313,081
01.01.2025-16.10.2025	247,892
Total estimated reductions (tonnes of CO2e)	1,565,405
Total number of crediting years	5
Annual average over the crediting period of estimated reductions (tonnes of CO_2e)	313,081

As previously discussed, Saros Wind Power Project will facilitate Turkey to stimulate and commercialize the use of grid connected renewable energy technologies and markets. Furthermore, the project will demonstrate the viability of grid connected wind farms which can support improved energy security, improved air quality, alternative sustainable energy futures, improved local livelihoods and sustainable renewable energy industry development. The specific goals of the project have been determined as follow:

- reduce greenhouse gas emissions in Turkey compared to the business-as-usual scenario;
- help to stimulate the growth of the wind power industry in Turkey;
- create local employment during the construction and the operation phase of the wind farm;
- reduce other pollutants resulting from power generation industry in Turkey, compared to a business-as-usual scenario;
- help to reduce Turkeys increasing energy deficit;
- and differentiate the
- electricity generation mix and reduce import dependency.

By considering Project's purpose and specific goals determined, Saros WPP will contribute to four different Sustainable Development Goals of UN. The contributions can be explained as follow:

- **SDG 13 Climate Action:** The project will naturally play an important role in struggle with climate crisis since it will provide a renewable electricity generation that will potentially replace equal amount of fossil electricity generation.
- **SDG 8 Decent Work and Economic Growth:** The project will employ a significant number of workers during both construction and operation phases. One of the most important parameters in the employment policy of Saros WPP will be employing an important majority of the workers locally.

- **SDG 7 Clean and Affordable Energy:** Saros WPP will contribute to Turkey's renewable energy production. Also, the electricity produced by Saros WPP will make reaching electricity easier within the country.
- **SDG 6 Clean Water and Sanitation:** Since Saros WPP will operate a renewable electricity generation that will potentially replace equal amount of fossil electricity generation, there will not be any cooling water discharge due to Project's operations. Also, the domestic wastewater that will be generated within Saros WPP will be removed in order to avoid its discharge to natural water bodies. By considering these two factors, the project will significantly contribute to SDG 6.

A.4 Scale of the project

Saros WPP is a large-scale carbon abatement project since its installed capacity will be 137.997 MWe which is higher than 15 MWe.

A.5 Funding sources of project

The project activity does not have any public funding or Official Development Assistance (ODA) funding.[12] No public funding is used for the project activity. It is developed by Life İklim ve Enerji Ltd. Şti. a Turkey-based carbon market consultancy firm. The Project is, however, owned by Boylam Enerji Yatırım Üretim ve Ticaret A.Ş. as the Project owner. Hence, the GS VERs generated by the proposed project activity will be owned by the Project owner.

SECTION B. APPLICATION OF APPROVED GOLD STANDARD METHODOLOGY (IES) AND/OR DEMONSTRATION OF SDG CONTRIBUTIONS

B.1. Reference of approved methodology (ies)

For the determination of the baseline, the official methodology ACM0002 version 20.0, "Large-scale Grid-connected electricity generation from renewable sources", is applied, using conservative options and data as presented in the following section. This methodology refers to five Tools, which are:

1. Tool to calculate the emission factor for an electricity system (Version 07.0)[13]
2. Tool for the demonstration and assessment of additionality (Version 07.0.0)[14]
3. Combined tool to identify the baseline scenario and demonstrate additionality (Version 07.0)[15]
4. Tool to calculate project or leakage CO2 emissions from fossil fuel combustion (Version 03.0)[16]
5. Tool to determine the remaining lifetime of the equipment (Version 01)[17]

[12] Please see ODA declaration signed by Boylam Enerji

[13] Please see the related link.

[14] Please see the related link.

[15] Please see the related link.

[16] Please see the related link.

[17] Please see the related link.

For baseline calculation the first tool, for additionality assessment the second tool is used. As third tool is the combination of the first and second tool, it is not used. Since no project emission or leakage calculation is required for wind power project fourth tool is not used, and finally to determine the remaining lifetime of the equipment fifth tool is used.

B.2. Applicability of methodology (ies)

The choice of methodology ACM0002, Version 20.0, is justified as the proposed project activity meets its applicability criteria as follow:

Table 4. Applicability Conditions of "Tool to Calculate the Emission Factor for an Electricity System" for Saros WPP

Applicability Conditions	Applicability to This Project Activity
This methodology is applicable to grid-connected renewable energy power generation project activities that: a) Install a Greenfield power plant; b) Involve a capacity addition to (an) existing plant(s) c) Involve a retrofit of (an) existing operating plants/units d) Involve a rehabilitation of (an) existing plant(s)/unit(s) or e) Involve a replacement of (an) existing plant(s)/unit(s)	The project activity consists of installation of Greenfield power plant at a site where no renewable power plant was operated prior to the implementation of the project activity. Thus, it meets the said applicability condition.
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.	The project activity is the installation of 27 wind turbine generators (as previously discussed). Hence, meets this criterion.
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 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.	The project activity Does not involve capacity additions, retrofits, rehabilitations or replacements. Hence this criterion is not applicable to the project activity.

Applicability Conditions	Applicability to This Project Activity
In case of hydro power plants, one of the following conditions shall apply: a) The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs, or 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/m^2, or c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (3), is greater than 4 W/m^2 or 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 (3), is lower than or equal to 4 W/m^2, all the following conditions shall apply: i. The power density calculated using the total installed capacity of the integrated project, as per equation (4), is greater than 4 W/m^2 ii. (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: • Lower than or equal to 15 MW, and • Less than 10 per cent of the total installed capacity of integrated hydro power project	The project activity is not a hydro power plant. Hence this applicability criterion is not relevant to the project activity.
In the case of integrated hydro power projects, project proponent shall: 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	The project activity is not a hydro power plant. Hence this applicability criterion is not relevant to the project activity.

Applicability Conditions	Applicability to This Project Activity
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 VER 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 five years prior to implementation of VER project activity.	
The methodology is not applicable to: 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; b) Biomass fired power plants/units	Project activity Does not involve: a) Switching from fossil fuels to renewable energy sources at the site of the project activity. b) Biomass fired plants. Hence this criterion is not applicable.
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, i.e., 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".	The project is not a retrofit, rehabilitations, replacements or capacity addition; hence this applicability criterion is not relevant.
In addition, the applicability conditions included in the tools referred to above apply.	Applicability conditions of the applied tool are justified.

From the above it is concluded that the project activity meets all the applicability conditions of the methodology ACM0002 version 20.0 "Grid connected electricity generation from renewable sources".

The project activity meets the following applicability conditions of "Tool to calculate the emission factor for an electricity system". The project activity also meets the applicability conditions given in "Tool for the demonstration and assessment of additionality". Other tools mentioned in the methodology are not applicable for this project activity.

B.3. Project boundary

Saros WPP's spatial extend is the project power plant and all power plants connected physically to the electricity system which is discussed and applied with calculation of combined margin in accordance of "Tool to calculate the emission factor for an electricity system".

The project uses wind energy to produce electricity. Kinetic power of the wind is converted to electrical energy, which then will be transferred to the grid. Back-up power generators in the wind farm will only be used when the wind farm is out of service and power cannot be supplied from grid. Hence, emissions due to usage of back-up power generation are expected to be very low and are taken to be zero complying with the "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion "(v.03).

A general operation diagram of the project is given in Figure 5.

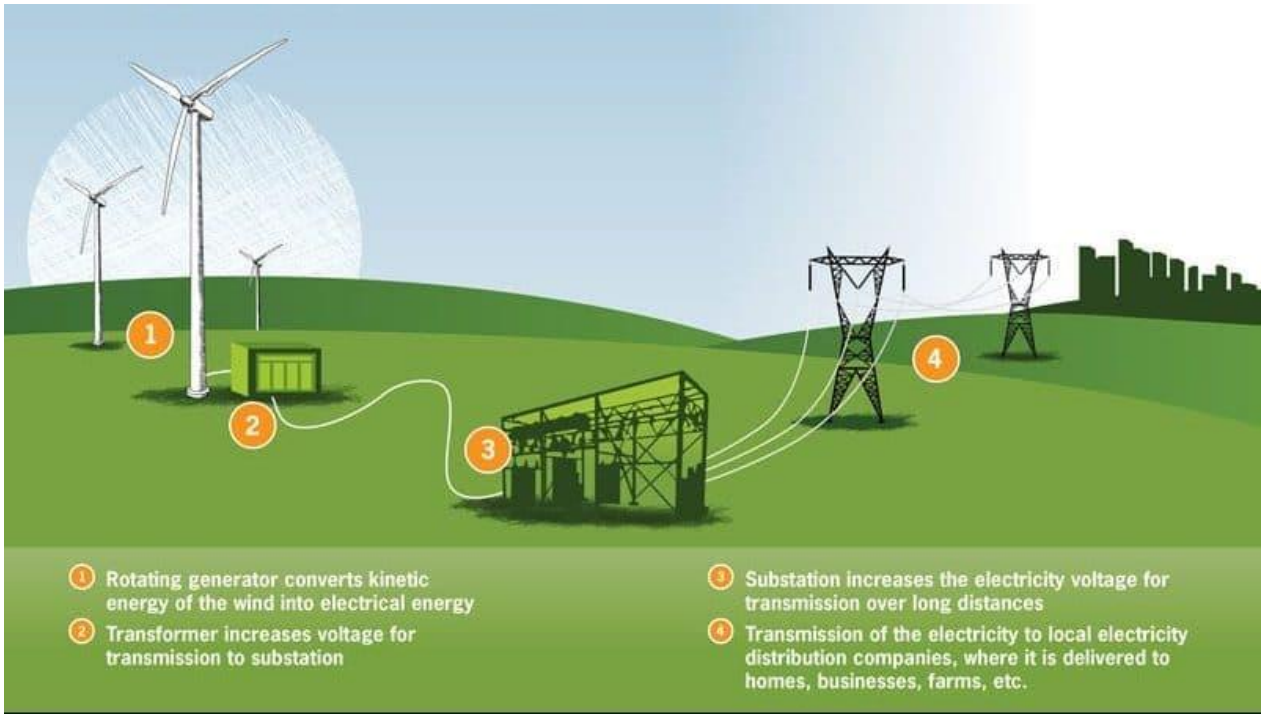

Figure 5. Operation Diagram of the Project[18]

Based on the above operation diagram, the baseline and project activity related greenhouse gases which are considered in baseline calculation is given below in Table

[18] Visual taken from CANWEA.

Source		GHGs	Included?	Justification/Explanation
Baseline scenario	CO2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity	CO_2	YES	Main emission source: Fossil fuels fired for electricity generation cause CO2 emissions. It is included to baseline calculation to find the displaced amount by the project activity.
		CH_4	NO	Minor emission sources: Even though there may be some CH4 and N2O emissions during electricity generation, these emissions are negligible and not included in baseline calculation to be conservative and comply with the methodology. (ACM0002 v20)
		N_2O	NO	
Project scenario	Emissions during construction and operation of the project activity	CO_2	NO	NO
		CH_4	NO	
		N_2O	NO	

B.4. Establishment and description of baseline scenario

The Baseline Methodology specifies how the baseline is described and calculated. It particularly refers to the consolidated tool for the demonstration and assessment of additionality, provided by the CDM Executive Board. In the context of the baseline determination, the project boundary and the Operating and Build Margin have to be established following the specifications set by ACM0002. In the following the derivation of the emission factor is described.

The baseline scenario is formulated in ACM0002 as follows:
"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, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system".

For the emission factors, that were used to calculate estimated emission reductions, publication of Turkish Ministry of Energy and Natural Resources which is indicating Turkey's National Electric Grid Emission Factor for the year of 2019 was used. Publication includes calculated Emission Factor values that are Operating Margin (OM), Growth Based Margin (Build Margin-BM) and Combined Margin (CM) Emission Factors, for the relevant year with usage of the IPCC's Clean Development Methodology Tool 07-V06.0. For this calculation, information regarding used data set is given below in detail;

- TEİAŞ Turkey's electricity generation-consumption and loss statistics,

- Common prepared report under Turkey's National Greenhouse Gas Inventory Reporting Format. - Common Reporting Format (CRF) tables for electricity generation (1.A.1.a.i) emission values
- Chronological order of power generation plants from TEİAŞ Load Dispatch Department with commissioning dates, plant names, fuel types, installed power values, electricity generation for the calculated year
- Checking off Volunteers from the websites of Gold Standard (GS) and Verified Carbon Standard (VCS) for the ownership status of the carbon reduction certificate and,
- From Clean Development Mechanism (CDM) Tool 009- V2.0, Power plant efficiency figures are used

According to this publication;
Operating Margin-OM: 0.7258 tCO2/MWh
Build Margin-BM: 0.4153 tCO2/MWh
Combined Margin-CM (for solar and wind): 0.6482 tCO2/MWh[19]

Project emissions
The proposed project activity involves the generation of electricity by development of a wind farm. The generation of electricity does not result in greenhouse gas emissions and therefore is taken as 0 tCO2/year.
PEy is 0 because project is a wind power generation activity (Only for geothermal and hydro project activities, it should be considered according to ACM0002).

Leakage
LEy is 0, as it is not considered according to ACM0002
Then: ERy = BEy

Baseline emissions
Baseline emissions include only CO2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity, calculated as follows:

$BEy = EGpj,y \times EFgrid,CM,y$

Where:
BEy = Baseline emissions in year y (tCO2/yr).
EGpj,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).

[19] https://enerji.gov.tr/evced-cevre-ve-iklim-turkiye-ulusal-elektrik-sebekesi-emisyon-faktoru
https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%B0klim/%C4%B0klimDe%C4%9Fi%C5%9Fikli%C4%9Fi/T%C3%BCrkiyeUlusalElektrik%C5%9EebekesiEmisyonFakt%C3%B6r%C3%BC/Belgeler/EK-2.pdf

EFgrid,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).

The project activity is the installation of a new grid-connected renewable power plant so, EGbaseline = 0

Calculation of the Operating Margin Emission Factor

By using all of the data which were given above, Turkish Ministry of Energy and Natural Resources calculated EFgrid,OMsimple,y. :

➔ **$EF_{grid,OMsimple,y} = 0.7258\ tCO_2/MWh$**

Calculation of the Build Margin Emission Factor

For BM factor calculation, Chronological order of power generation plants from TEİAŞ Load Dispatch Department with commissioning dates, plant names, fuel types, installed power values, electricity generation for the calculated year were used as input data. Consequently, Turkish Ministry of Energy and Natural Resources calculated EFgrid,BM,y.

➔ **$EF_{grid,BM,y} = 0.4153\ tCO_2/MWh$**

Calculating of the Combined Margin Emission Factor

EFgrid,CM,y = 0.7258 tCO2/MWh * 0.75 + 0.4153 tCO2/MWh * 0.25 = 0.6482 tCO2/MWh

➔ **$EF_{grid,CM,y} = 0.6482\ tCO_2/MWh$**

Then:
ERy = BEy - PEy= EGpj,y * EFgrid,CM,y = 483,000 MWh/year * 0.6482 tCO2/MWh = 313,081 tCO2/year

Baseline scenario is identified and described in B.4. Emission reductions due to project activity is calculated according to "Tool to calculate the emission factor for an electricity system" (Tool) version 7.0.0 as indicated in ACM0002 ver. 20.0.

A brief explanation of this methodology is given in Tool as:

This methodological tool determines the CO2 emission factor for the displacement of electricity generated by power plants in an electricity system, by calculating the "combined margin" emission factor (CM) of the electricity system.

B.5. Demonstration of additionality

For the explanation of how and why the project activity leads to emission reductions that are additional to what would have occurred in the absence of the project activity, the Baseline Methodology refers to the consolidated "Tool for the demonstration and assessment of additionality" version 7.0.0 (Tool), which defines a stepwise approach to be applied to the proposed project.

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

Sub-step 1a. Alternatives to the project activity

To identify the realistic and credible alternative scenario(s) for project participants, scenarios in the Tool are assessed:

a) The proposed project activity undertaken without being registered as a GS VER project activity

This alternative is realistic and credible as Boylam Enerji may undertake project activity if it sees no risk for project and/or if the project turns out to be financially attractive without GS VER credit income. However, investments analysis shows that the project is not economically feasible without GS VER credit income. Detailed information is given in Step-3.

b) By taking other realistic and credible alternative scenario(s) to the proposed GS VER project activity scenario that deliver electricity with comparable quality, properties and application areas into account, where relevant, examples of scenarios identified in the underlying methodology;

The Project is a power generation activity without any greenhouse gas emission harnessing the energy of the wind. Being a private entity, Boylam Enerji will not have to invest power investments even proposed project activity. Also, since Boylam Enerji has licence only for wind power investment and since in the proposed project area there is no hydro or other sources for electricity generation, other project activities delivering same electricity in the same project area is not realistic for project participant.

c) Continuation of the current situation, i.e., Saros WPP is not built

The decision in favor or against a project investment depends on the expected revenues and risks, like for every other private investment. Investment decisions other than Saros WPP are independent from the question whether Saros WPP is built or not. This alternative is also realistic and credible.

According to baseline scenario, which is described in B.4, there is a need for energy investment to satisfy increasing demand and if the Saros WPP is not built, the same amount of energy will be supplied by other private investors to the grid. Forecasts shows that electricity supplied in the absence of Saros WPP will be mainly and potentially based on fossil fuels as the projections for the year of 2022 forecasts 66.6% share for fossil fuels in the energy mix.

In the absence of the project the power will be produced by new and existing power plants in accordance with the baseline in ACM0002 version 20.0.
Outcome of Step 1.a:
Therefore, two realistic and credible alternative scenarios are identified for the project activity:

a) **The proposed project activity undertaken without being registered as a GS VER project activity.**
b) **Continuation of the current situation, i.e., Saros WPP is not built.**

Sub-step 1b. Consistency with mandatory laws and regulations
Both alternatives are (building or not building the project activity) in compliance with the following identified applicable mandatory laws and regulations:

1. Electricity Market Law [20]
2. Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electricity Energy [21]
3. Environment Law[22]

Date	Activity
Issuance of the generation license	18/10/2012
EIA Report Confirmation	12/10/2017
EIA Positive Decision	18/03/2019
Revised generation license for 35 turbines[23]	28/05/2019
Construction Agreement	14/06/2019
Agreement with Equipment Provider (GE) (**Project Start Date**)	05/07/2019
Connection Agreement	09/09/2019
Electrical Balance of Plant (EBOP) Agreement	20/09/2019
Energy Yield Assessment Report	04/11/2019
Agreement with carbon consulting company (Life Enerji)	10/01/2020
Revised generation license for 27 turbines[24]	14/01/2020
Crediting period start date	17/10/2020

According to Turkish regulations, to get necessary permits for further project implementation, license issued by EMRA is required. Hence, issuance of license cannot be considered as 'Investment Decision Taken Date' but a prerequisite to proceed for further project development activities. Notice to proceed date of electromechanical equipment contract will be set to be Investment Decision Taken Date when the agreement is signed. From above Implementation Schedule it can be seen that Saros

[20] Please see the related link
[21] Please see the related link
[22] Please see the related link
[23] Please see revised license.
[24] Please see revised license.

WPP after having license started to analysis of VER and decided to get consultancy for VER development, much before planned construction starting date.
In the following, the investment analysis is applied to clearly demonstrate that the project activity is unlikely to be financially/economically attractive without the revenue from the sale of VERs.

B.5.1. Prior Consideration

Step 2. Investment analysis

'Guidance on the Assessment of Investment Analysis (version 5)' [25] is considered when applying this step.
Applied tool: "Tool for the demonstration and assessment of additionality version 7.0.0[26]"

Sub-step 2a: Appropriate analysis method

Three options can be applied for the investment analysis: the simple cost analysis, the investment comparison analysis and the benchmark analysis.

- Option I: Simple cost analysis
- Option II: Investment comparison analysis
- Option III: Benchmark analysis

The simple cost analysis is not applicable for the proposed project because the project activity will have revenue (from electricity sales) other than CDM related income. The investment comparison analysis is also not applicable for the proposed project because the baseline scenario, providing the same annual electricity output by the Turkish National Grid, is not an investment project.

To conclude, the benchmark analysis will be used to identify whether the financial indicators (Project IRR in this case) of the proposed project is better than relevant benchmark value. With the help of the investment analysis, it shall be demonstrated that the proposed project activity is not economically or financially feasible without the revenue from the sale of VERs. Therefore, the benchmark analysis shall be applied, as there is no alternative project activity for a comparison of the attractiveness of an investment.

Sub-step 2b: Option III: Benchmark analysis

While applying the Benchmark Analysis, Option III, the project IRR is selected as the financial indicator for the demonstration of the additionality of the project as permitted in the additionality tool.

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[25] Please see the related link

[26] Please see the related link

Benchmark rate is calculated in line with "Tool 27: Investment Analysis version 08.0[27]" which suggests the applied benchmark shall be appropriate to the type of IRR calculated. "Local commercial lending rates or WACC are appropriate benchmarks for a project IRR. Required/expected returns on equity are appropriate benchmarks for an equity IRR. Benchmarks supplied by relevant national authorities are also appropriate."

Ministry of Development publishes "Main Economic Indicators" on a monthly basis. Since the project is a mid-term investment (exceeding one year), lending rate for medium term investment has been selected as the benchmark. The lending rate for the medium-term investment as estimated by the Turkish Development Bank is 14.5% for the September 2018.[28] Thus, 14.5% is taken as the benchmark value for Project IRR (after tax to be conservative).

Assessment of likelihood conditions for each parameter to reach benchmark IRR is provided below:

Electricity Price

In order to reach 14.50% Project IRR benchmark, electricity price should increase more than 10% from assumed price. This feed-in-tariff price is already very high compared to general market price and not likely to increase. Thus, this 10.0% increase of the feed-in-tariff is not likely to happen. Even if electricity price will increase by 10%, project IRR cannot reach up to 14.50%.

Investment Cost

In order to reach benchmark IRR, investment costs shall be decreased more than 10%. Since the equipment contract which has the higher share of the total costs is fixed, 10% decrease in the investment cost is unlikely. Thus, it is not likely for project activity to have threshold investment cost and reach to benchmark IRR. Even if investment cost will decrease by 10%, project IRR cannot reach up to 14.50%.

Energy Yield

To have benchmark IRR, annual energy yield amount shall increase more than 10% more than base case electricity generation amount used in financial analysis. Although most of the wind power project uses electricity generation amount from energy yield reports, to be conservative in financial investment analysis of the project activity. These figures are annual electricity generation to be sold except transmission loss. Using electricity generation amount in financial analysis, which have less than 10% probability of occurrence is not rational. Thus, it is not likely for project activity to generate threshold energy yield to reach benchmark IRR. Even if energy yield will increase by 10%, project IRR cannot reach up to 14.50%.

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[27] Please see the related link

[28] Please see the related link (latest data to determine the benchmark at the decision time)

Operation Cost
In order to reach benchmark IRR, annual operation decrease more than 10%. Such huge decrease in annual operation cost is not likely. Even if operation cost will decrease by 10%, project IRR cannot reach up to 14.50%.

Sub-step 2c: Calculation and comparison of the project IRR
In the paragraph 12 of the 'Guidance on the Assessment of Investment Analysis' version 5, it is stated that:
Local commercial lending rates or weighted average costs of capital (WACC) are appropriate benchmarks for a project IRR. Since, benchmark that will be identified in the Sub-step 2b is required local commercial lending rates are appropriate benchmarks for project IRR, project IRR (after tax) of the project activity shall be calculated for comparison.

Calculation and comparison of financial indicators
Local commercial lending rates or weighted average costs of capital (WACC) are appropriate benchmarks for a project IRR. Since, benchmark that will be identified in the Sub-step 2b is required local commercial lending rates are appropriate benchmarks for project IRR, project IRR (after tax) of the project activity shall be calculated for comparison.

Technical lifetime of Saros WPP is determined by using the *Tool to determine the remaining lifetime of equipment (v.1)*. In the tool it is said that default lifetime for the onshore wind turbines is 25 years.

For depreciation, the useful year has been taken as 10 years. In addition to this, feed in tariff is used which grants further incentives for period of five years if local content sourced from Turkey. Fair value is taken as 5 % to be on a more conservative side and is added to the last year of the cash flow in the IRR analysis.

The project IRR (after tax) of Saros WPP was calculated based on cash flows (investment, operating costs and revenues from electricity sale). It has yielded as 7.04% after tax. The parameters and values used for the IRR calculation will be available to VVB during validation.

Sub-step 2d: Sensitivity analysis
While the main parameter determining the income of the project is the electricity sales revenue, investment cost and operation cost, a variation of the accordant values shall demonstrate the reliability of the project IRR calculation. Key parameters are varied with +/-10%. The worst, base and best-case results for each parameter variation are given below, in **Table**.

The sensitivity analysis confirms that the proposed project activity is unlikely to be economically attractive without the revenues from VERs as even the maximum IRR result for the best-case scenario is below the benchmark, which is 14.50%.
The design change of the project already started generating electricity, which means there is no chance that the investment cost will be -%10. In addition to that, Turkey

has feed in tariff which means fixed electricity price for renewable project, it is unlikely to have a higher electricity price, which is above the market price.

Table 5. IRR Results with respect to Different Financial Scenarios

Parameter	Power Price			Investment Cost			Energy Yield			Operating Cost		
Variance	-10%	0%	10%	-10%	0%	10%	-10%	0%	10%	-10%	0%	10%
Project IRR After Tax (for 25 years)	5.38%	7.04%	8.63%	8.69%	7.04%	5.65%	5.34%	7.04%	8.67%	7.67%	7.04%	6.32%

Step 3. Barrier analysis

The investment analysis will probably fully demonstrate and explain the additionality of the project, so step 3 will be skipped.

Step 4: Common Practice Analysis

The section below provides the analysis as per step 4 of the "Tool for the demonstration and assessment of additionality", version 7.0.0 and according to "Common Practice" Tool version 03.1[29].

Step 1. Calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed project activity: The proposed project has a capacity of 137.997 MWe. Per the guideline of +/-50%, the applicable output range for the project is 68.9985 MWe to 206.9955 MWe.

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

a) The projects are located in the applicable geographical area; (Turkey)
b) The projects apply the same measure as the proposed project activity; (Renewable Energy Projects)
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; (Wind Power Plants)
d) The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g., clinker) as the proposed project plant; (N.A.)
e) The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1; (68.9985 MWe to 206.9955 MWe)
f) The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity;

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 Nall.

[29] Please see the related link

All projects with conditions are listed in an excel table and **only 1 project** are identified, which cannot be demonstrated as CDM or voluntary carbon projects (N_{all}). They are given in Step-4.

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 N_{diff}.
Paragraph 12 of the Common Practice Tool lists the criteria for identification of N_{diff} projects, and paragraph (d) which "investment climate of the project" is taken into account to identify N_{diff} projects. Feed-in-tariff is essential for a renewable project as it ensure a certain financial flow to the investment and thus increases its credibility. Also, as per item c of the same paragraph, size of installation (power capacity)/energy savings is another essential whether it manage to have certain financial flow to the investment. In below table N_{all} projects identified in Step-3 with feed-in-tariff (subsidiary)[30] and installation capacity of the projects are given.

Table 6. N_{all} Projects

COMPANY NAME	PP NAME	FUEL TYPE	INSTALLED POWER (MWe)	FEED IN TARIFF*-**	PROJECT TYPE	Ndiff
LODOS KARABURUN EL. ÜR. A.Ş.	KARABURUN RES	RES	120.00	7.30 USDc/kWh	LARGE SCALE	0
Proposed Project: *Boylam Enerji Yatırım Üretim ve Ticaret A.Ş.*	*SAROS RES*	*RES*	137.997	***7.30 USDc/kWh***	LARGE SCALE	0

As it can be seen from the table, there is one project which get same or less feed-in-tariff and have different project category with respect to its installation capacity comparing to the proposed project activity. Thus, we can conclude that N_{diff} is 0.

Step 5: Calculate factor $F=1-N_{diff}/N_{all}$ 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.

$F = 1- (N_{diff}/N_{all})$
$= 1 - (0/1) = 1$
Factor F equals to 1.

[30] Please see the related link

B.5.2. Ongoing Financial Need

This alternative is realistic and credible as Saros may undertake project activity if it sees no risk for project and/or if the project turns out to be financially attractive without GS VER credit income. However, investments analyses shows that the project is not economically feasible without GS VER credit income. Moreover, the sensitivity analysis confirms that the proposed project activity is unlikely to be economically attractive without the revenues from VERs as even the maximum IRR result for the best-case scenario (8.69%) is below the benchmark, which is 14.5%. Consequently, the project activity is additional, it has still ongoing financial need.

Conclusion:
The proposed project activity is a "common practice" within a sector in the applicable geographical area if the factor F is greater than 0.2 and N_{all}-N_{diff} is greater than 3. Although F is smaller than 0.2, but N_{al}l-N_{diff} equal to 1 (not greater than 3), Saros WPP is not a common practice.

B.6. Sustainable Development Goals (SDG) outcomes

Sustainable Development Goals Targeted	Most relevant SDG Target	SDG Impact Indicator
13 Climate Action	13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula
8 Decent Work and Economic Growth	8.8. Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	8.8.2 Increase in national compliance of labour rights (freedom of association and collective bargaining) based on International Labour Organization (ILO) textual sources and national legislation, by sex and migrant status
7 Affordable and Clean Energy	7.2. By 2030, increase substantially the share of	7.2.1 Renewable energy share in the total final energy consumption

	renewable energy in the global energy mix	
6 Clean Water	6.6. By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	6.6.1 Change in the extent of water-related ecosystems over time

B.6.1. Explanation of methodological choices/approaches for estimating the SDG Impact

- **SDG 13**

The annual emission reduction estimated by the project is 313,081 tonnes of tCO_2/year, approximately. While this amount of emissions are mitigated, technology transfer is also realized as benefitting from wind energy.

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

This project is expected to remove of CO2: 313,081 tCO2/year. It contributes to the following target 13.3. and following indicator 13.3.1.

- **SDG 8**

The employment of local people that have necessary technical qualifications for the required post is the priority and enhanced by all project activities during operation of wind farm. As a result, local poverty and unemployment are partially eliminated by increased job opportunities and project business activities. Construction materials for the foundations, cables and other auxiliary equipment were/are preferentially be sourced locally. Moreover, as contribution of the project to welfare of the region, the quality of the electricity consumed in the region is increased by local electricity production, which also contributes decreasing of distribution losses. On the other hands, health and safety trainings are/will be provided to all employees to decrease the risk and injuries during the operation.

The project is expected to provide health and safety trainings to all employees. It contributes to the following target 8.8. and following indicator 8.8.2.

- **SDG 7**

Firstly, the project helps to accelerate the growth of the wind power industry and stimulates the designation and production of renewable energy technologies in Turkey. Then, other entrepreneurs irrespective of sector are encouraged to invest in wind power generations. It also assists to reduce Turkey's increasing energy deficit and diversify the electricity generation mix while reducing import dependency, especially natural gas. Importantly, rural developments are maintained in the areas

around the project site by providing infrastructural investments to these remote villages.

Calculation of Electricity Generation of Saros WPP:

Electricity Generation of Saros WPP = Electricity supplied to the grid (MWh) - Electricity consumption from the grid (MWh)

The project is expected to generate 483,000 MWh/annually. The project contributes to the following target 7.2. and following indicator 7.2.1.

- **SDG 6**

The project activities replace the grid electricity, which is constituted of different fuel sources causing greenhouse gas emissions. By replacing in the consumption of these fuels, it contributes to conservation of water. Amount of wastewater to be discharged to the environment is decreased.

The project activity causes a domestic wastewater discharge, which is calculated as follow:

Average Amount of Wastewater Discharged per each GWh Electricity Generation	=	Total Wastewater Discharged by Thermal Power Plants in 2018	÷	Total Electricity Generation in the related year

The project is expected to avoid of 11,961.8 (x1000 m3/y) wastewater discharge to the environment. It contributes to the following target 6.3. and following indicator 6.3.1.

B.6.2 Data and parameters fixed ex ante

SDG13

Data/parameter	**$EF_{grid,CM,y}$**
Unit	tCO_2/MWh
Description	For the combined margin CO2 emission factor that were used to calculate estimated emission reductions, publication of Turkish Ministry of Energy and Natural Resources which is indicating Turkey's National Electric Grid Emission Factor for the year of 2019 was used.
Source of data	Please see: https://enerji.gov.tr/Media/Dizin/EVCED/tr/%C3%87evreVe%C4%B0klim/%C4%B0klimDe%C4%9Fi%C5%9Fikli%C4%9Fi/T%C3%BCrkiyeUlusalElektrik%C5%9EebekesiEmisyonFakt%C3%B6r%C3%BC/Belgeler/EK-2.pdf
Value(s) applied	0.6482 tCO2/MWh
Choice of data or Measurement methods and procedures	The baseline emissions are the product of electrical energy baseline expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.
Purpose of data	For the calculation of the Baseline Emission
Additional comment	This parameter is fixed ex-ante for the first crediting period.

Data/parameter	**$EF_{grid,CM,y}$**
Unit	tons/GWh
Description	For the CO, NMVOC and NOx combined margin emission factors
Source of data	Emission amount due to electricity generation is taken from UNFCCC Common Reporting Format (CRF) excel spreadsheets and total electricity generation in related year is taken from TEİAŞ website to determine the emission factor for air quality indicators. All references have been provided in the CM excel.

Value(s) applied	With respective orders of CO, NMVOC, NO_x emissions: 0.098 tons/GWh 0.009 tons/GWh 1.135 tons/GWh
Choice of data or Measurement methods and procedures	The baseline emissions are the product of electrical energy baseline expressed in GWh of electricity produced by the renewable generating unit multiplied by an emission factor.
Purpose of data	For the calculation of the Baseline Emission
Additional comment	This parameter is fixed ex-ante for the first crediting period.

SDG 7

Data/parameter	Gross electricity generation
Unit	MWh
Description	Gross Electricity supplied to the grid (2019)
Source of data	Turkish Electricity Transmission Company (TEİAŞ), Annual Development of Turkey's Gross Electricity Generation of Primary Energy Resources (2019) TEİAŞ
Value(s) applied	TEİAŞ (2019), please see: https://webapi.teias.gov.tr/file/345a1333-4709-4506-a1b7-24c6332d32d0?download (303,897.5 GWh)
Choice of data or Measurement methods and procedures	TEIAS is the national electricity transmission company, which makes available the official data of all power plants in Turkey.
Purpose of data	Used for baseline emissions
Additional comment	-

SDG 6

Data/parameter	Average amount of wastewater discharged
Unit	m3/GWh
Description	Average amount of wastewater discharged per GWh
Source of data	Turkish Electricity Transmission Company (TEİAŞ), Annual Development of Turkey's Gross Electricity Generation of Primary Energy Resources (2019) Turkish Statistical Institute (TURKSTAT), Wastewater Discharged by Thermal Power Plants (2018)
Value(s) applied	24.77 m3/GWh TEİAŞ (2019) please see: https://webapi.teias.gov.tr/file/345a1333-4709-4506-a1b7-24c6332d32d0?download TURKSTAT (2018) please see: https://data.tuik.gov.tr/Bulten/Index?p=Termik-Santral-Su,-Atiksu-ve-Atik--Istatistikleri-2018-30674
Choice of data or Measurement methods and procedures	Coefficient for wastewater avoidance from potential cooling water operations calculated by taking Total Wastewater Discharged by Thermal Power Plants in the related year (publication of TURKSTAT data for the year of 2018, which is the most recent available data, was used) and Net Electricity Generation in the related year (publication of TEİAŞ data for the year of 2019 was used) TEIAS is the national electricity transmission company, which makes available the official data of all power plants in Turkey. TURKSTAT compile, evaluate, analyses and publish official statistics in the fields of economy, social issues, demography, culture, environment, science and technology, and in the other required areas in Turkey.
Purpose of data	Avoidance wastewater discharge to the environment and for the calculation of the baseline factor.
Additional comment	-

B.6.3 Ex ante estimation of SDG Impact

SDG 13 Climate Action:

The baseline emissions are the product of electrical energy baseline EGPJ,y expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.

Year	Baseline estimate	Project estimate	Net benefit
17.10.2020-31.12.2020	65,189	0	65,189
2021	313,081	0	313,081
2022	313,081	0	313,081
2023	313,081	0	313,081
2024	313,081	0	313,081
01.01.2025-16.10.2025	247,892	0	247,892
Total	**1,565,405**	**0**	**1,565,405**
Total number of crediting years	**5**		
Annual average over the crediting period	**313,081**	**0**	**313,081**

The start date of crediting period has been planned as 17/10/2020. This is expected date of start date of GS crediting period and is two years prior to the date of project design certification. If GS registration date is changed, the start date of GS crediting period will be changed accordingly.

SDG 8 Decent Work and Economic Growth:

The project leads to employment opportunities which would not have been possible in the baseline scenario. The project is expected to give employment to around 24 persons. Also, a set of trainings will be provided to improve the skills and competency to the working people.

SDG 7: Affordable and Clean Energy:

Year	Baseline estimate	Project estimate	Net benefit
17.10.2020-31.12.2020	0	100,570	100,570
2021	0	483,000	483,000
2022	0	483,000	483,000
2023	0	483,000	483,000
2024	0	483,000	483,000

01.01.2025-16.10.2025	0	382,430	382,430
Total	**0**	**2,415,000**	**2,415,000**
Total number of crediting years	**5**		
Annual average over the crediting period	**0**	**483,000**	**483,000**

SDG 6 Clean Water and Sanitation:

In order to calculate wastewater avoidance from the facility (by taking cooling water discharge in thermal power plants into account), the first step is to calculate a factor showing estimated wastewater discharge per GWh generated electricity. This factor is derived by dividing "Total Wastewater Discharged by Thermal Power Plants in the related year (2018 in this case)" with "Total Electricity Generation in 2019 in the related year in GWh". Then, the wastewater discharge in the baseline scenario is reached by multiplying this factor with the estimated electricity generation of the WPP. This output also refers to Avoided Wastewater Discharge Amount. According to calculation[31], project is expected to avoid 11,961,810 m3 wastewater discharge per year.

B.6.4 Summary of ex ante estimates of each SDG Impact

SDG13

Year	Baseline estimate	Project estimate	Net benefit
17.10.2020-31.12.2020	65,189	0	65,189
2021	313,081	0	313,081
2022	313,081	0	313,081
2023	313,081	0	313,081
2024	313,081	0	313,081
01.01.2025-16.10.2025	247,892	0	247,892
Total	**1,565,405**	**0**	**1,565,405**
Total number of crediting years	**5**		
Annual average over the crediting period	**313,081**	**0**	**313,081**

[31] Please see excel spreadsheet

SDG 7

Year	Baseline estimate	Project estimate	Net benefit
17.10.2020-31.12.2020	100,570	0	100,570
2021	483,000	0	483,000
2022	483,000	0	483,000
2023	483,000	0	483,000
2024	483,000	0	483,000
01.01.2025-16.10.2025	382,430	0	382,430
Total	**2,415,000**	**0**	**2,415,000**
Total number of crediting years	**5**		
Annual average over the crediting period	**483,000**	**0**	**483,000**

SDG 8

The project leads to employment opportunities which would not have been possible in the baseline scenario. The project is expected to give employment to around 24 persons. Also, a set of trainings will be provided to improve the skills and competency to the working people.

SDG 6

According to calculation below, project is expected to avoid 11,961,810 m3 wastewater discharge per year.

Total Wastewater Discharged by Thermal Power Plants in 2018 (x1000 m3)	Total Electricity Generation in 2019 (GWh)	Average Amount of Wastewater Discharged per each GWh Electricity Generation in 2018 (x1000 m3/GWh)	Annual Electricity Generation of Project Activity (GWh/y)
7,527,047.00	303,897.50	24.77	483.0

Amount of Avoided Wastewater Discharge per year by Project Activity (x1000 m3/y)	Amount of Avoided Wastewater Discharge by Project Activity per year (x1000 m3/y) (3)	Amount of Avoided Wastewater Discharge by Project Activity per year (x1000 m3/y)
11,963.1	1.314	**11,961.8**

B.7. Monitoring plan

B.7.1 Data and parameters to be monitored

SDG 13 Climate Action
Target: 13.3
Indicator: 13.3.1

Data / Parameter	**ER_y**
Unit	tCO_2e/year
Description	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.
Source of data	Both measured and calculated Emission reductions will be calculated as considering the EPIAS records for the net electricity generated and the emission factor for the grid, 0.6482 tCO2/MWh, which is calculated and published by The Ministry of Energy and Natural Resources of Turkey
Value(s) applied	313,081
Measurement methods and procedures	Amount of annual net electricity generation, which is calculated by monthly settlement notifications of EPİAŞ based on monthly meter readings, will continue used to calculate estimated CO2 emission reduction by project activity.
Monitoring frequency	Annually
QA/QC procedures	Calculation of amount of emission reduction will be calculated on an excel document and provided in each monitoring period.
Purpose of data	To monitor the SDG 13 Indicator
Additional comment	Data will be archived in paper & electronic form for two years after the end of crediting period or of the last issuance of GS-VERs for this project activity, whichever occurs later. Value(s) will be provided by project owner.

Data / Parameter	**ER_y**
Unit	-tCO/year -tNMVOC/year -tNO_x/year

Description	CO, NMVOC and NOx emission reductions achieved per year
Source of data	Emission amount due to electricity generation is taken from UNFCCC Common Reporting Format (CRF) excel spreadsheets and total electricity generation in related year is taken from TEİAŞ website to determine the emission factor for air quality indicators. All references have been provided in the CM excel.
Value(s) applied	With respective orders of CO, NMVOC, NO_x emissions: -47.2 tons/y (estimated) -4.5 tons/y (estimated) -548.0 tons/y (estimated)
Measurement methods and procedures	The baseline emissions are the product of electrical energy baseline $EG_{PJ,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.
Monitoring frequency	As per monitoring period
QA/QC procedures	Not Applicable
Purpose of data	To monitor the SDG 13 Indicator
Additional comment	Data will be archived in paper & electronic form for two years after the end of crediting period or of the last issuance of GS-VERs for this project activity, whichever occurs later. Values will be calculated by carbon consultant using net electricity production during the monitoring period.

SDG 8 Decent Work and Economic Growth
Target: 8.8
Indicator: 8.8.2

Data / Parameter	**Qualitative Employment**
Unit	-
Description	Number of Trainings Given and Injuries Recorded
Source of data	-Plant records or the training records for all the employees/Letter from O&M contractor for employment generation/ VVB interview with employees, local stakeholders etc. -Health and safety records
Value(s) applied	HSE trainings will be provided to all employees.

Measurement methods and procedures	The Project will organize a series of trainings for the staff on the technology & technical capacity building, and the monitoring of the plant operation, and the emergency and safety procedures. Also, it provides a safe working condition to all employees.
Monitoring frequency	As per monitoring period
QA/QC procedures	-
Purpose of data	To show that the employment quality is supported via the trainings given and injuries mitigated
Additional comment	Value(s) will be provided by project owner

Data / Parameter	**Quantitative Employment**
Unit	-
Description	Number of people employed directly due to the project activity
Source of data	Plant records or the training records for all the employees/Letter from O&M contractor for employment generation/ VVB interview with employees, local stakeholders etc.
Value(s) applied	24
Measurement methods and procedures	The total number of persons working in the plant would be calculated based on the daily log available at site. This parameter also monitors number of men/women employed by the project activity. The project activity ensures that "equal pay for work of equal value" for both men and women and there is not any discrimination against women. "The employment covers number of men and number of women employed by the project activity. The job is of type temporary/permanent or skilled/unskilled, local/ non-local etc. Also, it is ensued that peoples will get equal payment for equal work. The payment will be based on work and no gender inequality for payment for work of equal value".
Monitoring frequency	As per monitoring period
QA/QC procedures	Social security records of the employees.
Purpose of data	To Monitor the SDG 8 Indicator
Additional comment	Value(s) will be provided by project owner.

SDG 7

Target: 7.2
Indıcator: 7.2.1

Data / Parameter	**EG** $_{facility, y}$
Unit	MWh/year
Description	Net electricity supplied to the grid.
Source of data	TEİAŞ reports that are cited in the registered CM Excel.
Value(s) applied	483,000
Measurement methods and procedures	The net electricity supplied to the grid is the basis for estimating emission reductions from the project activity. The power generated by each wind turbine generator (WTG) is stepped up via a step-up transformer and fed into the feeder line. The net electricity supplied to the grid is calculated as follows: Net Electricity supplied to the grid by Project Activity = Total electricity exported by project activity - Total electricity imported by project activity The total electricity exported and imported by the project activity WTGs is determined based on the apportioning procedure described in section B.7.2 and in the measurement methods and procedures for the parameters EGy, Export and EGy, Import
Monitoring frequency	Continuous measurement & monthly recording and summarized annually
QA/QC procedures	The calibration of the monitoring equipment was carried out according to the information provided in the GS-VER PDD. The GS-VER PDD mainly includes the following obligation for the calibration of the appropriate meters: "The Turkish Electricity Market Regulation Agency (EPDK) sets rules on the accuracy of electricity meters that are used by power plants feeding into the grid. The rules are part of the EPDK regulation 25056 from 22 March 2003. The table in Article 11 of the regulation specifies the use of electricity meters of the accuracy class 0.5S for power plants between 10 MW and 100 MW and refers to compliance with International Electrotechnical Commission's norm EN 60687. Technicians, employees of Boylam Enerji conduct readings from two meters from the project site and sends it to TEIAŞ. By this way, a cross-check is done. Moreover, continuously these two meters

	are compared with each other and if any differences are detected the necessary control measures are taken. According to the Article 2 of the Communiqué: 'The meters to be used in the electricity market shall be compliant with the standards of Turkish Standards Institute or IEC and have obtained "Type and System Approval" certificate from the Ministry of Trade and Industry.' Therefore, Ministry of Trade and Industry (Ministry) is responsible from control and calibration of the meters. Paragraph b) of the Article 9 of the 'Regulation of Metering and Testing of Metering Systems' 7 (Regulation) of Ministry states that: 'b) Periodic tests of meters of electricity, water, coal gas, natural gas and current and voltage transformers are done every 10 years.' Therefore, periodic calibration of the meters will be done every 10 years. As above mentioned, the data acquisition and management and quality assurance procedures that are anyway in place, no additional procedures have to be established for the monitoring plan. The specifications of electricity meters are provided below:[32] Calibration date of the metering devices is 16/03/2020 First protocol date is 12/11/2019 for both meters.
Purpose of data	Calculation of emission reductions
Additional comment	The data will be kept for two years after the crediting period or from last issuance. The values shall be monitored ex-post and VERs will be calculated at actual. Value(s) will be provided by project owner.

Name	Serial Number	Brand – Model	Date Of Calibration	Year of Manufacturer	Accuracy Level
Main Meter	9276667	EMH–LZQJ-XC-P2FB	16/03/2020	2019	Active 0.2S Reactive 0.5S
Check meter	9276668	EMH–LZQJ-XC-P2FB	16/03/2020	2019	Active 0.2S Reactive 0.5S

[32] Please see calibration documents

SDG 6

Target: 6.3
Indicator: 6.3.1

Data / Parameter	**Avoidance of wastewater generation and discharge**
Unit	m^3
Description	Quantity of avoided cooling wastewater and domestic wastewater discharge
Source of data	- For cooling wastewater avoidance: As per Monitoring Plan sheet of registered CM Excel. During the verification, the results shall be obtained from the Actual ER excel file. - For domestic wastewater discharge to natural bodies: Receipts of sewage truck loan
Value(s) applied	11,961,810/y
Measurement methods and procedures	- For cooling wastewater avoidance: The cooling wastewater avoidance will be calculated based on Saros WPP's electricity generation data. - For domestic wastewater discharge to natural bodies: The receipts of sewage truck have shown that necessary precautions have been taken in order to avoid domestic wastewater discharge into natural environments. Also, a picture of Cesspool of the plant taken during the site visit is provided.
Monitoring frequency	As per monitoring period
QA/QC procedures	Not Applicable
Purpose of data	To Monitor the SDG 6 Indicator
Additional comment	Values will be calculated by carbon consultant using net electricity production during the monitoring period.

Principle 9.4 – Release of Pollutants

Data / Parameter	**Biodiversity**
Unit	N/A
Description	Avoidance of domestic solid waste disposal into natural bodies by removing them in line with the regulations
Source of data	Removal collection receipts

Value(s) applied	N/A
Measurement methods and procedures	Removal collection receipts
Monitoring frequency	As per monitoring period
QA/QC procedures	Not Applicable
Purpose of data	Avoiding natural body damage due to the project activity
Additional comment	Value(s) will be provided by project owner.

Principle 9.5 – Hazardous and Non-hazardous Waste

Data / Parameter	**Hazardous and Non-hazardous Waste formed due to the project activity**
Unit	N/A
Description	Avoidance of oil wastes disposal into natural bodies by removing them in line with the regulations
Source of data	Removal collection receipts
Value(s) applied	N/A
Measurement methods and procedures	Removal collection receipts
Monitoring frequency	As per monitoring period
QA/QC procedures	Not Applicable
Purpose of data	Avoiding natural body damage due to the project activity
Additional comment	Value(s) will be provided by project owner.

Principle 9.11 – Endangered Species

Data / Parameter	**Bird watch**
Unit	N/A
Description	Avoidance of significant level of bird mortality due to the project
Source of data	Ornithological reports or interview with the head of the village and local people
Value(s) applied	N/A

Measurement methods and procedures	Ornithological reports and interview with the head of the village and local people
Monitoring frequency	As per monitoring period
QA/QC procedures	Not Applicable
Purpose of data	To minimize bird mortality in the project area
Additional comment	Value(s) will be provided by project owner.

B.7.2 Sampling plan

No sampling plan is required for wind projects.

B.7.3 Other elements of monitoring plan

The purpose of the monitoring plan is to define the organizational structure of the monitoring team, monitoring practices, QA and QC procedures and archiving procedures. The monitoring plan will ensure that the emission reductions from the project activity are reported accurately and transparently.

Roles and Responsibilities of the Monitoring Team

The responsibility of project management as well as monitoring, measurement and reporting lies with Life Enerji as the Boylam Enerji's carbon consultant. In other words, the project proponent has formulated a Monitoring Team to ensure proper and continuous monitoring of the emission reductions as well as performance of turbines and generation of power.

To ensure trouble free operation of all the wind turbines, Boylam Enerji has entered into a comprehensive Operation and Maintenance agreement with the manufactures of the turbines. The contractor, GE Wind Energy GmbH, would be responsible for the operation and maintenance of the WTGs. The O&M personnel are qualified engineers and are trained at the WTG manufacturing facility of GE Wind Energy GmbH.

Boylam Enerji keeps all the data needed for the calculation of emission reductions during the crediting period and until two years after the last issuance of GS VERs for Saros WPP.

The monitoring team will interact with the O&M contractors as well as the National Authority officials for executing the monitoring plan.

Metering Arrangements and Procedures

The general conditions set out for metering, recording, meter readings, meter inspections, Test & Checking and communication shall be as per the PPA (power purchase agreement). The electricity exported from the sub-station will be metered using electronic trivector meters. Trivector meter is an energy meter which accurately measures all the parameters of supply such as voltage, current, power factor, active load, reactive load, apparent load etc. On a monthly basis, meter reading will be carried out in the presence of the national authority officials and representatives of the project promoters.

The WTGs will be connected to different feeders, and each feeder will have a corresponding metering point. Each feeder would have several WTGs connected to it, some of which may not be part of the project activity. Also, the power from all feeders would be exported to the sub-station of the state utility, from where it would be exported to the grid. An apportioning procedure would be carried out to calculate electricity exported from the project activity. This procedure is described below.

Calculation of Net Electricity Exported from Project Activity

The net electricity supplied to the grid by project activity is recorded in electricity generation statements of Saros WPP. The main billing meter at substation records total supplied, and total consumed by all the connected WTGs. Additionally, the O&M contractors maintain records of the electricity generation from WTGs which is monitored through the SCADA system. This data is used for the calculation of electricity supplied and consumed by WTGs.

The net electricity generation by the WTGs of Saros WPP would be calculated by;

Net electricity generation amounts by project activity = Total electricity generated by project activity - Total electricity consumed by project activity

The above calculations are under purview of state electricity board and PP do not have any control on it. The monitoring plan mentioned the generation, consumption and net electricity parameters available with PP. As a result, the net electricity generation amounts is calculated by subtracting electricity withdrawn from the grid from electricity supplied to the grid.

Quality control and Quality Assurance Procedures

Calibration Procedures
In accordance with the requirements of TEİAŞ, there are two meters installed at the site where one is called the main meter and check meter. TEİAŞ is the main responsible for calibration and maintenance of the devices. TEİAŞ performs the necessary maintenance and calibration. Since the electricity generation data is used for the billing and accounting between TEIAŞ and the project participant the data is of high quality. Ministry of Trade and Industry (Ministry) is responsible from control and calibration of the meters. Paragraph b) of the Article 9 of the 'Regulation of Metering and Testing of Metering Systems' (Regulation) of Ministry states that: '' b) Periodic tests of meters of electricity, water, coal gas, natural gas and current and voltage transformers are done every 10 years.'' Therefore periodic calibration of the meters is done every 10 years. Also, if TEİAŞ deems suitable, it will perform the test of the meters.
The meters shall be deemed to be working satisfactorily if the errors are within specifications for meters' accuracy class. The data registered by the main meter alone will be adopted for the purpose of calculation as long as the error in the main meter is within permissible limits. If during the annual accuracy tests, the main meter is found to be within the permissible limit of error and the corresponding check meter is beyond the limits, the main meter reading shall be considered as usual. However, the check meter shall be calibrated immediately. If the main meter is found to be beyond the permissible limits of error, but corresponding check meter is within limits, then the check meter reading shall be adopted for that period. The main meter shall be calibrated immediately.

Data collection and archiving
The daily data on electricity generation from WTGs at the site is collected in electronic form. Monthly Saros WPP statements are collected and maintained in hard copy and archived

electronically. The project proponent shall keep complete and accurate records of all the data as a part of monitoring for at least a period of 2 years after the end of the crediting period or the last issuance of VERs for the project activity, whichever occurs late.

SECTION C. DURATION AND CREDITING PERIOD

C.1. Duration of project

C.1.1 Start date of project
05/07/2019 is the date which corresponds to the date of Turbine Agreement.

C.1.2 Expected operational lifetime of project
The expected lifetime of the GE WPP is 25 years. In addition to this, operational lifetime of the project is 49 years.[33]

C.2. Crediting period of project

C.2.1 Start date of crediting period
Start date of crediting period has been determined as 17/10/2020.

C.2.2 Total length of crediting period
5 years. (Twice renewable)

SECTION D. SUMMARY OF SAFEGUARDING PRINCIPLES AND GENDER SENSITIVE ASSESSMENT

D.1 Safeguarding Principles that will be monitored

Principles	Mitigation Measures added to the Monitoring Plan
Principle 6.1 Labour Rights	Necessary health and safety measures will be taken during operation phase according to the regulation of health and safety requirements in construction works. The employment within the project will be implemented in a proper way and audited by the Social Security Agency during each monitoring period.
Principle 9.4 Release of pollutants	Amount of annual net electricity generation, which is calculated by monthly settlement notifications of EPİAŞ based on monthly meter readings, will be used to calculate estimated amount of avoided wastewater discharge by project activity. Principle will be monitored during each monitoring period
Principle 9.5 Hazardous and Non-hazardous Waste	Avoidance of oil wastes disposal into natural bodies by removing them in line with the regulations. Receipts will be provided to VVB. Principle will be monitored during each monitoring period
Principle 9.11 Endangered Species	Ornithological reports or interview with the head of the village and local people's feedbacks will be used to monitor the principle. Principle will be monitored during each monitoring period.

[33] Please see the generation license

D.2. Assessment that project complies with GS4GG Gender Sensitive requirements

Question 1 - Explain how the project reflects the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy?	In accordance with the discussion provided in Gold Standard Gender Policy's Foundational gender-sensitive requirement, the project will strengthen Gold Standard's 'do no harm' approach and addresses safeguards to prevent or mitigate adverse impacts on women or men and girls and boys. It is very well understood that such action is mandatory for all projects seeking Gold Standard certification and includes compliance with the gender 'do no harm' safeguards, gender gap analysis and gender sensitive stakeholder consultations. From this point of view, this renewable energy will not discriminate among gender. In other words, the Project Does not adversely impact women or men. The local stakeholder participant list was shared with VVB. The shared list demonstrates the there is no discrimination among gender.
Question 2 - Explain how the project aligns with existing country policies, strategies and best practices	The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis. Turkey signed the convention of International Labour Organization. The related articles are 100 and 111. The project owner respects Article 5 of Labour Law[34]; Which states no discrimination based on gender, race, religion, sexual orientation or any other basis is allowed.
Question 3 - Is an Expert required for the Gender Safeguarding Principles & Requirements?	No. The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis.
Question 4 - Is an Expert required to assist with Gender issues at the Stakeholder Consultation?	No. At the Stakeholder Consultation, women are free to say anything regarding the project. Their opinions and comments are also taken into account while evaluating the project at the Stakeholder

[34] https://www.ilo.org/dyn/natlex/docs/ELECTRONIC/64083/77276/%20F75317864/TUR64083%20English.pdf

	Consultation. The local stakeholder participant list was shared with VVB.

SECTION E. SUMMARY OF LOCAL STAKEHOLDER CONSULTATION

E.1 Summary of stakeholder mitigation measures

Stakeholders were invited to the meeting held on May 29th, 2018, through different means including:
1. E-mail correspondence.
2. Newspaper advertisements.

During the meeting, to introduce project to the local people and to give details about how this project will impact their lives, a presentation was given.
The agenda of the meeting built based upon the follows:

- Welcome Speech
- Introduction to Climate Change, Clean Development Mechanism and Gold Standard
- Views expressed by the villagers
- Interactive session with the stakeholders
- Vote of Thanks

The information given in presentations was based on the non-technical summary of the project. The presentation was addressing the issues about project specifications and how the project might have some environmental effects, how these issues will be mitigated by the investor and climate change and how the project will help the fight against climate change. After the detailed discussion, stakeholders encouraged to raise their questions on the proposed wind energy-based power project to clear their doubts. A few of the prominent comments and the responses of the project manager are as follows:

- Mustafa Önder (Local Stakeholder): The area where turbines T68 and T69 are located is an area where pines are used by the villagers.
- Response by project manager: After the change in the project, the related turbines will not be included in the project.

- Mesut Yılmaz (Local Stakeholder): Will the two turbines in the "Karadağ village" region change?
- Response by project manager: The related turbines will not be included in the project.

- Hüseyin Tutak (Local Stakeholder): How far is the turbines from our village?
It was answered by the project manager by giving the necessary information.

It may be generally stated that out of 36 people attending the stakeholder meeting, most of them were satisfied with the realization of the project due to clean electricity generation.

All relevant documents and minutes of the stakeholder consultation were shared with VVB.

E.2 Final continuous input / grievance mechanism

Method	Include all details of Chosen Method (s) so that they may be understood and, where relevant, used by readers.
Continuous Input / Grievance Expression Process Book	Continuous Input Process Book was provided to Muhtar of village. Muhtar is the representative of the village and most appropriate person to handle the book and complaints from the village.
GS Contact (mandatory)	help@goldstandard.org

APPENDIX 1 - SAFEGUARDING PRINCIPLES ASSESSMENT

Complete the Assessment below and copy all Mitigation Measures for each Principle into SECTION D above. Please refer to the instructions in the Guide to Completing this Form.

Assessment Questions/ Requirements	Justification of Relevance (Yes/potentially/no)	How Project will achieve Requirements through design, management or risk mitigation.	Mitigation Measures added to the Monitoring Plan (if required)
Principle 1. Human Rights			
1. The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights 2. The Project shall not discriminate with regards to	1. Yes 2. Yes	1. Turkey is a UN party that already ratified Universal Declaration of Human Rights. Thus, this project has been audited under Turkish Legal Framework to prevent any potential violation on the human rights. 2. The Project does not discriminate anybody with regards to participation and inclusion since in Turkey, Universal Declaration of Human Rights is known nationally.	1. No 2. No

participation and inclusion			
Principle 2. Gender Equality			
1. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women 2. Projects shall apply the principles of nondiscrimination, equal treatment, and equal pay for equal work 3. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks 4. (where required) Summary of opinions and recommendations of	1. Yes 2. No 3. Yes 4.-	1. The project does not apply any gender-specific employment policy. 2. Due to project activity, no gender discrimination has not been observed. 3. According to Article 10 of the Constitution of the Republic of Turkey in Turkey women and men have equal rights. (https://www.tbmm.gov.tr/anayasa/anayasa_2018.pdf) on the other hand, Discrimination (Job and Profession) Agreement was accepted on September 9, 1967 in Turkey. https://ailevecalisma.gov.tr/media/1332/tuerkiye-taraf%C4%B1ndan-onaylanan-ilo-soezle%C5%9Fmeleri.pdf (C111), according to this agreement women and men have equal rights in terms of jobs and professions. For this reason, by seeking this, project he Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks. Moreover, In the main office of the project owner company there are women employees as well. Therefore, project contributes to recognition of women rights implicitly.	1. No 2. No 3. No 4. -

an Expert Stakeholder(s)			
Principle 3. Community Health, Safety and Working Conditions			
1. The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community	1. Yes	1. The project will take all the necessary precautions for all the hazards that by mitigating their impacts in line with the legal limits. (ie. level of dust, noise and flickering effect)	1. No
Principle 4.1 Sites of Cultural and Historical Heritage			
Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture?	No	The project does not occupy any high value cultural area.	No
>>			
Principle 4.2 Forced Eviction and Displacement			
Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)?	No	The project does not require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)	No

>>			
Principle 4.3 Land Tenure and Other Rights			
a. Does the Project require any change, or have any uncertainties related to land tenure arrangements and/or access rights, usage rights or land ownership? b. For Projects involving land use tenure, are there any uncertainties with regards to land tenure, access rights, usage rights or land ownership?	a-b. No	a-b. No, the project does not cause any type of change with respect to land tenure or impact any legal rights of the nearby people. The land use permission has been certified.	No
Principle 4.4 - Indigenous people			
Are indigenous peoples present in or within the area of influence of the Project and/or is the Project located on land/territory claimed by indigenous peoples?	No	Turkey does not host any indigenous people community	No
>>			
Principle 5. Corruption			
1. The Project shall not involve, be complicit	1. Yes	1. The project has been awarded by a national climate incentive mechanism called as *Mechanism for Supporting Renewable Energy*	1. No

in or inadvertently contribute to or reinforce corruption or corrupt Projects		*Resources (YEKDEM)* and all the requirements for benefiting from this mechanism have been proven in a suitable and transparent way.	
Principle 6.1 Labour Rights			
1. The Project Developer shall ensure that all employment is in compliance with national labour occupational health and safety laws and with the principles and standards embodied in the ILO fundamental conventions 2. Workers shall be able to establish and join labour organisations 3. Working agreements with all individual workers shall be documented and		1. The employment within the project will be implemented in a proper way and audited by the Social Security Agency. 2. Employee have the right to form unions and higher organizations, without prior permission. and they also possess the right to become a member of a union and to freely withdraw from membership, in order to safeguard and develop their economic and social rights and the interests of their members in their labour relations.[35] 3. a) Regulation On Working Times Regarding Labor Law was updated in April 6, 2004 in Turkey. https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=5447&MevzuatTur=7&MevzuatTertip=5 According to this regulation, working hours cannot exceed 45 hours in every working place in Turkey. For this reason, workers cannot be worked over 45 hours weekly in this project. b) Duties and tasks are clarified in every working place in Turkey within the scope of Labor law which was updated on May 5, 2003	

[35] https://www.anayasa.gov.tr/en/legislation/turkish-constiution/ Please see: page 44, article 51

implemented and include: a) Working hours (must not exceed 48 hours per week on a regular basis), AND b) Duties and tasks, AND c) Remuneration (must include provision for payment of overtime), AND d) Modalities on health insurance, AND e) Modalities on termination of the contract with provision for voluntary resignation by employee, AND f) Provision for annual leave of not less than 10 days per year, not including sick and casual leave.	1. Yes 2. Yes 3. Yes 4. Yes 5. Yes	lately. https://www.resmigazete.gov.tr/eskiler/2003/06/20030610.htm c) Over Work and with Over Time Regarding Labor Law Working Regulation was prepared on 22nd of May, 2003. https://www.mevzuat.gov.tr/File/GeneratePdf?mevzuatNo=6249&mevzuatTur=KurumVeKurulusYonetmeligi&mevzuatTertip=5 According to this regulation, payment of overtime is provided by employer. For this reason, this rule is applied for the employees within this project's border. d) Social Insurance Operations Regulation was rearranged on 31st of May 2016 in Turkey. https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=13973&MevzuatTur=7&MevzuatTertip=5 Under this regulation, within the border of Turkey, without social insurance, employees cannot be worked in any shape or form. e) Labor law which was updated on May 5, 2003 lately. https://www.resmigazete.gov.tr/eskiler/2003/06/20030610.htm This law covers all of the modalities on termination of the contract with provision for voluntary resignation by employee. f) Annual Paid Leave Regulation has been prepared based on Article 60 of the Labor Law dated 22/5/2003 and numbered 4857. https://www.mevzuat.gov.tr/File/GeneratePdf?mevzuatNo=5451&mevzuatTur=KurumVeKurulusYonetmeligi&mevzuatTertip=5	1. No 2. No 3. No 4. No 5. No

4. No child labour is allowed (Exceptions for children working on their families' property requires an Expert Stakeholder opinion) 5. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures		According to this regulation, employees have right for annual leave of not less than 10 days per year, not including sick and casual leave. 4. No child will be employed for the project construction and implementation. 5. Project owner provides all employees to have trainings for the use of appropriate equipment, documentation and reporting of accidents and incidents and emergency preparedness and response measures regularly. Additionally, relevant staff are trained to be able to work with high voltages, high heights and heavy machineries.	
Principle 6.2 Negative Economic Consequences			
1. Does the project cause negative economic consequences during and after project implementation?	1. No	1. On the contrary, it supplies job opportunities for local people. By this way, it contributes improvement of economy.	1.No
>>			
Principle 7.1 Emissions			

Will the Project increase greenhouse gas emissions over the Baseline Scenario? >>	No	No, Since the project is a renewable energy production activity, there won't be any GHG emissions due to the project.	No
Principle 7.2 Energy Supply			
Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users? >>	Potentially	Plant sometimes can use energy from local grid in the absence of wind. However, this amount is less when it is compared with its production of green energy amount.	This amount will be tried to decrease as far as possible. It can be check during the verification process with the monthly meter readings and EPİAŞ records.
Principle 8.1 Impact on Natural Water Patterns/Flows			
Will the Project affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of	No	Since there is no water use in the generation of electricity, Project does not affect the natural or pre-existing pattern of watercourses, groundwater and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity. Only water use in the project side is for domestic purposes.	No

aquatic connectivity or water scarcity?			
>>			
Principle 8.2 Erosion and/or Water Body Instability			
a. Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion? b. Is the Project's area of influence susceptible to excessive erosion and/or water body instability?	a. No b. No	a-b. Since there is no water use in the generation of electricity the Project directly or indirectly cannot cause additional erosion and/or water body instability or disrupt the natural pattern of erosion.	No
>>			
Principle 9.1 Landscape Modification and Soil			
Does the Project involve the use of land and soil for production of crops or other products?	No	No. Project does not involve the use of land and soil for production of crops or other products	No
>>			
Principle 9.2 Vulnerability to Natural Disaster			
Will the Project be susceptible to or lead to	No	The project area is not a place to specific extreme climatic conditions and harmful natural events such as subsidence,	No

increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions?		landslides, erosion, flooding, drought. However, project area is located on earthquake zone, but the project complies with the regulation on buildings to be built in disaster areas.[36]	
>>			
Principle 9.3 Genetic Resources			
Could the Project be negatively impacted by or involve genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development, or take place in facilities or farms that include GMOs in their processes and production)?	No	There is no relevance to GMO of a WPP.	No
>>			
Principle 9.4 Release of pollutants			
Could the Project potentially result in the release of pollutants to the environment?	1.Potentially	Only wastewater and solid waste production results from daily water use (eg. domestic wastewater) and daily domestic consumption (eg. domestic solid waste). These domestic wastes	Wastewater is vacuumed by vacuum truck regularly. By

[36] Please see EIA report (page 63)

>>		are removed from the project facility in line with the associated legislative framework.[37]	this way, discharge of plant sourced wastewater will not be allowed. Moreover, domestic solid wastes will be collected regularly
Principle 9.5 Hazardous and Non-hazardous Waste			
Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?	Potentially	In the case that only hazardous and non-hazardous waste production results from windmill operation (eg. waste oil and related materials). These wastes are removed from the project facility in line with the associated legislative framework.	There will be no pollutant disposal from the WFP to the natural bodies. All the wastes (eg. waste oil and domestic wastewater are removed).
>>			
Principle 9.6 Pesticides & Fertilisers			
Will the Project involve the application of pesticides and/or fertilisers?	No	There is no operation which requires pesticide fertilizer use for this project.	No

[37] Please see EIA report (page 207)

>>			
Principle 9.7 Harvesting of Forests			
Will the Project involve the harvesting of forests?	No	The turbines are mostly located on treeless lands, on unused private lands, away from residential areas. However, vegetable soil laying, afforestation, germination and rehabilitation of the natural environment were carried out in order to restore the environment of the lands affected by the project activity on the turbine platforms and roads to its former natural state. [38]	No
Principle 9.8 Food			
Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	No	The project owner did not involve any operation that disrupt husbandry and agriculture in the region.	No
>>			
Principle 9.9 Animal husbandry			
Will the Project involve animal husbandry?	No	The project owner does not involve any operation that disrupt husbandry and agriculture in the region. Necessary precautions have been taken in accordance with the EIA report.	No
>>			
Principle 9.10 High Conservation Value Areas and Critical Habitats			
Does the Project physically affect or alter largely intact or High Conservation Value			

[38] Please see EIA report (page 170), and for Principle 9.8 (page 265), and also for Principle 9.9 (page 249-250)

(HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified? >>	No	The Project physically does not affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified.[39]	No
Principle 9.11 Endangered Species			
a. Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)? b. Does the Project potentially impact other areas where endangered species may be present through transboundary affects? >>	No	The Project does not potentially impact other areas where endangered species may be present through transboundary affects. With this respect, there is no damage or alteration of any flora or fauna due to the project activity.[40]	No

[39] Please see EIA report (page 161)
[40] Please see EIA report (page 164)

APPENDIX 2- CONTACT INFORMATION OF PROJECT PARTICIPANTS

Organization name	Boylam Enerji Yatırım Üretim ve Ticaret A.Ş.
Registration number with relevant authority	-
Street/P.O. Box	Pürtelaş Hasan Efendi, Meclis-i Mebusan Cd. No:35/2, Salıpazarı
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E-mail	energytrade@borusanenbwenerji.com
Website	http://www.borusanenbw.com/tr/Anasayfa.aspx
Contact person	
Title	
Salutation	Ms.
Last name	Yaşaroğlu
Middle name	
First name	Emel
Department	
Mobile	
Direct tel.	
Personal e-mail	

Organization name	Life İklim ve Enerji Ltd. Şti
Registration number with relevant authority	-
Street/P.O. Box	Oğuzlar Mah. 1377.Sok No:19/9 Balgat
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First name	Kerem
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Personal e-mail	