المجلس العالمي للبصمة الكربونية
GLOBAL CARBON COUNCIL

Project Submission Form

V3.2 - 2020

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Contents

SECTION A. DESCRIPTION OF THE PROJECT ACTIVITY 11

A.1. PURPOSE AND GENERAL DESCRIPTION OF THE PROJECT ACTIVITY 11
A.2. LOCATION OF THE PROJECT ACTIVITY 13
A.3. TECHNOLOGIES/MEASURES 14
A.4. PROJECT OWNER(S) 15
A.5. DECLARATION OF INTENDED USE OF APPROVED CARBON CREDITS (ACCS) GENERATED BY THE PROJECT ACTIVITY 15
A.6. ADDITIONAL REQUIREMENTS FOR CORSIA 16

SECTION B. APPLICATION OF SELECTED METHODOLOGY(IES) 16

B.1. REFERENCE TO METHODOLOGY(IES) 16
B.2. APPLICABILITY OF METHODOLOGY(IES) 16
B.3. PROJECT BOUNDARY, SOURCES AND GREENHOUSE GASES (GHGS) 19
B.4. ESTABLISHMENT AND DESCRIPTION OF THE BASELINE SCENARIO 21
B.5. DEMONSTRATION OF ADDITIONALITY 22
B.6. ESTIMATION OF EMISSION REDUCTIONS 27
B.6.1. EXPLANATION OF METHODOLOGICAL CHOICES 27
B.6.2. DATA AND PARAMETERS FIXED EX ANTE 30
B.6.3. EX-ANTE CALCULATION OF EMISSION REDUCTIONS 35
B.6.4. SUMMARY OF EX ANTE ESTIMATES OF EMISSION REDUCTIONS 44
B.7. MONITORING PLAN 45
B.7.1. DATA AND PARAMETERS TO BE MONITORED 45
B.7.2. MONITORING-PROGRAM OF RISK MANAGEMENT ACTIONS 50
B.7.3. SAMPLING PLAN 50
B.7.4. OTHER ELEMENTS OF THE MONITORING PLAN 50

SECTION C. START DATE, CREDITING PERIOD TYPE AND DURATION 52

C.1. START DATE OF THE PROJECT ACTIVITY 52
C.2. EXPECTED OPERATIONAL LIFETIME OF THE PROJECT ACTIVITY 52
C.3. CREDITING PERIOD OF THE PROJECT ACTIVITY 52
C.3.1. FIXED CREDITING PERIOD 52
C.3.2. START DATE OF THE CREDITING PERIOD 52
C.3.3. DURATION OF THE CREDITING PERIOD 52

SECTION D. ENVIRONMENTAL IMPACTS 53

D.1. ANALYSIS OF ENVIRONMENTAL IMPACTS 53

D.2. ENVIRONMENTAL IMPACT ASSESSMENT 53

SECTION E. ENVIRONMENTAL AND SOCIAL SAFEGUARDS 53

E.1. ENVIRONMENTAL SAFEGUARDS 54
E.2. SOCIAL SAFEGUARDS 61

SECTION F. UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS (SDG) 68

SECTION G. LOCAL STAKEHOLDER CONSULTATION 74

G.1. MODALITIES FOR LOCAL STAKEHOLDER CONSULTATION 74
G.2. SUMMARY OF COMMENTS RECEIVED 75
G.3. CONSIDERATION OF COMMENTS RECEIVED 75

SECTION H. APPROVAL AND AUTHORIZATION 75

Appendix 1. Contact information of project owners 76
Appendix 2. Affirmation regarding public funding 76
Appendix 3. Applicability of methodology(ies) 76
Appendix 4. Further background information on ex ante calculation of emission reductions 76
Appendix 5. Further background information on monitoring plan 77
N/A 77
Appendix 6. Summary report of comments received from local stakeholders (Evaluation Form Examples) 77
Appendix 7. Summary of de-registered CDM project (Type B) 91

COVER PAGE- Project Submission Form (PSF)

Complete this form in accordance with the instructions attached at the end of this form.

BASIC INFORMATION

Title of the Project Activity	**Karaçayır Wind Power Project**
PSF version number	04
Date of completion of this form	07/12/2021
Project Owner(s) (Shall be consistent with De-registered CDM Type B Projects)	1. Mursal Enerji Üretimi Sanayi ve Ticaret Anonim Şirketi 2. Maki Elektrik Enerji Operasyonları Yönetimi Anonim Şirketi
Country where the Project Activity is located	Turkey
GPS coordinates of the project site(s)	See table below
Eligible GCC Project Type as per the Project Standard (Tick applicable project type)	☒ **Type A:** ☐ Type A1 ☒ Type A2 ☐ **Type B – De-registered CDM Projects:**[1] ☐ Type B1 ☐ Type B2

Turbine	Latitude (UTM)	Longitude (UTM)
T1	39.93833938692388	36.98209426232223
T2	39.93927832522025	36.98583519308959
T3	39.940171514674795	36.989542455691684
T4	39.942844731347066	36.996685616959006
T5	39.944821258431766	37.00002223659547
T6	39.94660590699023	37.00425418913277

[1] Owners of Type B projects shall fill in the form provided in Appendix 7.

<table>
<tr><td>Minimum compliance requirements</td><td>☒ Real and Measurable GHG Reductions
☒ National Sustainable Development Criteria (if any)
☒ Apply credible baseline and monitoring methodologies
☒ Additionality
☒ Local Stakeholder Consultation Process
☒ Global Stakeholder Consultation Process
☒ No GHG Double Counting
☒ Contributes to United Nations Sustainable Development Goal 13 (Climate Action)</td></tr>
<tr><td>Choose optional and additional requirements
(Tick applicable label categories)</td><td>☒ Do-no-net-harm Safeguards to address Environmental Impacts
☒ Do-no-net-harm Safeguards to address Social Impacts
☒ Contributes to United Nations Sustainable Development Goals (in addition to Goal 13)</td></tr>
<tr><td>Applied methodologies
(Shall be approved by the GCC or the CDM)</td><td>AMS-I.D Small-scale Methodology: Grid-connected renewable electricity generation from, ver 18.0</td></tr>
<tr><td>GHG Sectoral scope(s) linked to the applied methodology(ies)</td><td>GHG-SS .#1 - Energy (renewable / non-renewable sources)</td></tr>
<tr><td>Applicable Rules and Requirements for Project Owners
(Tick applicable Rules and Requirements)</td><td>
<table>
<tr><th colspan="2">Rules and Requirements</th><th>Reference</th><th>Version</th></tr>
<tr><td colspan="2">☒ ISO 14064-2</td><td></td><td></td></tr>
<tr><td colspan="2">☒ Applicable host country legal requirements /rules</td><td></td><td></td></tr>
<tr><td rowspan="5"></td><td>☒ Project Standard</td><td></td><td>V3.1</td></tr>
<tr><td>☐ Approved GCC Methodology (XXXXX)</td><td></td><td></td></tr>
<tr><td>☒ Program Definitions</td><td></td><td>V3.1</td></tr>
<tr><td>☒ Environment and Social Safeguards Standard</td><td></td><td>V2.0</td></tr>
<tr><td>☒ Project Sustainability Standard</td><td></td><td>V2.1</td></tr>
</table>
</td></tr>
</table>

	☒ GCC Rules and Requirements[2]	☒ Instructions in Project Submission Form (PSF)-template		V3.2
		☐ Add rows if required		
	☒ CDM Rules[3]	☒ Approved CDM Methodology (XXXXX)	AMS-I.D Small-scale Methodology Grid-connected renewable electricity generation from, ver 18.0	V18.0
		☐ Tool for the demonstration and assessment of additionality	TOOL 01	
		☐ Combined tool to identify the baseline scenario and demonstrate additionality	TOOL 02	
		☒ Tool to calculate the emission factor for an electricity system	TOOL 07	V07.0
		☐ Demonstration of additionality of microscale project activities	TOOL 19	
		☒ Demonstration of additionality of small-scale project activities	TOOL 21	V13.1
		☐ Additionality of first-of-its-kind project activities	TOOL 23	
		☐ Common practice	TOOL 24	
		☒ Investment analysis	TOOL 27	V11.0
		☐ Positive lists of technologies	TOOL 32	
		☐ Guidelines for objective demonstration		

[2] GCC Program rules and requirements: https://www.globalcarboncouncil.com/resource-centre.html
[3] CDM Program rules: https://cdm.unfccc.int/Reference/index.html

		and assessment of barriers		
		☐ Add rows if required		

Choose Third Party External Project Verification by approved GCC Verifiers[4] (Tick applicable verification categories)	☒ GHG emission reductions (i.e., Approved Carbon Credits **(ACCs)**) ☒ Environmental No-net-harm Label (**E+**) ☒ Social No-net-harm Label (**S+**) ☒ United Nations Sustainable Development Goals (**SDG+**) ☐ Bronze SDG Label ☐ Silver SDG Label ☒ Gold SDG Label ☐ Platinum SDG Label ☐ Diamond SDG Label ☒ CORSIA requirements (**C+**) ☐ Host Country Attestation on Double counting

[4] **Note:** GCC Verifiers under the Individual Track are not eligible to conduct verifications for GCC Project Activities whose owners intend to supply carbon credits (ACCs) for use within CORSIA.

Declaration to be made by the Project Owner(s)[5] (Tick all applicable statements)	The Project Owner(s) declares that: ☒ The Project Activity complies with the eligibility of the applicable project type (A1, A2, B1 or B2) as stipulated by the Project Standard. ☒ The Project Activity shall start operations, and start generating emission reductions, on or after 1 January 2016. ☒ The Project Activity is eligible to be registered under the GCC program. ☒ No carbon credits generated by the proposed Project Activity will be claimed as carbon credits in any other GHG program anywhere in the world, either for compliance or voluntary purposes, for the entire 10-year GCC crediting period. ☒ The proposed Project Activity, if Type A, is NOT registered as a GHG Project Activity in any other GHG program or any other voluntary program anywhere in the world. ☒ The proposed Project Activity is NOT included as a component Project Activity (CPA) in a registered GHG Programme of Activities (PoA) under any GHG program (such as the CDM or any other voluntary program) anywhere in the world. ☒ The proposed Project Activity is NOT a CPA that has been excluded from a registered PoA under any GHG program (such as the CDM or any other voluntary program) anywhere in the world. Provide details (if any) below for the boxes ticked above.
	☒ If a GCC project chooses to apply to use ACCs under CORSIA, the Project Owner(s) is required to declare that they are aware that they must obtain and provide to the GCC and its Registry (operated by IHS Markit) a written attestation from the host country's national focal point (e.g., Ministry of Environment or Civil Aviation Authority) or focal point's designee, as required by CORSIA Emissions Unit Eligibility Criteria, which: ☒ Confirms the avoidance of double counting as required by CORSIA; ☒ Shall be made publicly available prior to the use of units from the host country under CORSIA; and ☒ Places all responsibility on the Project Owner(s) to replace any and all doubly claimed or counted ACCs by the host country, in the GCC registry operated by IHS Markit.

[5] The "Project Owner" means the legal entity or organization that has overall control and responsibility for the Project Activity.

	Provide details below for the boxes ticked above
	The Project Owner(s) declares that: ☒ All of the information provided in this document, including any supporting documents submitted to the GCC or its registry operator IHS Markit at any time, is true and correct; ☒ They understand that a failure by them to provide accurate information or data, or concealing facts and information, can be considered as negligence, fraud or willful misconduct. Therefore, they are aware that they are fully responsible for any liability that arises as a result of such actions. Provide details below for the boxes ticked above
Appendixes 1-7	Details about the Project Activity are provided in Appendixes 1 through 7 to this document.
Name, designation, date and signature of the Project Owner(s)	**On behalf of Mursal Enerji Üretimi Sanayi ve Ticaret Anonim Şirketi** **Emre Diniz & Burak Sezercan** **Executive Board Members**
	07/12/2021

1. PROJECT SUBMISSION FORM

Section A. Description of the Project Activity

A.1. Purpose and general description of the Project Activity

Karaçayır WPP has been developed by Mursal Enerji Üretimi Sanayi ve Ticaret Anonim Şirketi. The project aim to contribute to reducing national energy deficit and development of local industries as it allows the use of cheaper energy for industrialists and gain advantage in a competitive environment.

The purpose of the project is to generate clean energy by harnessing the wind power and providing the energy to the Turkish national grid. By implementing the project, investors also aim to reduce dependency to the fossil fuels thereby reducing the sources of environmental pollution. In order to achieve the highest possible power output and the emission reductions associated with it; the project owner invested in state-of-the-art turbines and all the necessary assessments were carried out before the implementation.

In this scope, Mursal Enerji Üretimi Sanayi ve Ticaret Anonim Şirketi planned to install 6*(2.1 MWm/1.667 MWe) wind turbines in central districts of Sivas province of Turkey with the purpose of contributing to the national economy the meeting the increased electricity demand.

The project is operational since 01.10.2016. The project complies with the relevant regulations and laws in Turkey. In line with Turkish environmental regulations, an “Environmental Impact Assessment (EIA) is not required” decision was given by the Ministry of Environment and Forestry in 04/05/2009. Consequently, the project has an EIA exemption since the installed capacity is below than the threshold value which was indicated in EIA regulation annex-2 list.[6]

The project is licensed on 14/06/2011 as 12.6 Mwm/10 MWe. As per the license issued by Energy Market Regulatory Authority (EMRA) all legal rights of the project is given to Mursal Enerji Üretimi Sanayi ve Ticaret Anonim Şirketi for 49 years including pre-construction and construction periods.

The project activity will generate greenhouse gas (GHG) emission reductions by avoiding CO2 emissions from electricity generation by fossil fuel power plants connected to Turkish National Power Grid. The average annual generated energy was analyzed and 90% PoE of estimated value was taken as 35,500 MWh according to the energy yield assessment report[7].the project will be able to deliver a reduction in emissions of around 20,497 tCO2e (tons of carbon dioxide equivalent) per annum and 204,970 tonnes of CO2 for the whole crediting period.

As it was mentioned above, the project will help Turkey to stimulate and commercialize the use of grid connected renewable energy technologies and markets. Furthermore, the project will

[6] https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=20235&MevzuatTur=7&MevzuatTertip=5

[7] Energy Yield Assessment Report Page:9)

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;
- 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.

Milestone table of the project is presented below:

Event	Date
EIA exemption decision	04/05/2009
Generation license	14/06/2011
Connection agreement	20/03/2014
Turbine agreement	03/07/2015
Construction agreement	09/09/2015
Start date of the operation	01/10/2016

In terms of local benefits, the project mainly contributes to the reduction of local air pollutants and local employment.

The project is expected to contribute 4 SDGs which are SDG 6, SDG 7, 11 and 13.

SDG 6 Clean Water and Sanitation: The project contributes SDG Target 6.3 “By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.”

SDG 7 Energy: The project contributes SDG Target 7.2 “By 2030, increase substantially the share of renewable energy in the global energy mix” by the utilization of biomass as a renewable energy source.

SDG 11 Sustainable Cities and Communities: The project helps SDG Target 11.6 “By 2030, reduce the adverse per capita environmental impacts of cities, including by paying special attention to air quality and municipal and other waste management.” by decreasing particulate matter caused by fossil fuel emissions in the cities.

SDG 13 Climate Change: The project produces clean renewable energy by diminishing CO2 emissions. Therefore, it contributes SDG Target 13.3 “Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning”.

A.2. Location of the Project Activity

The location of the project activity is inner Anatolian Region of Turkey. It is located in central district of Sivas province in Turkey. The map which shows the project site is given in the figure below.

Address and geodetic coordinates of the physical site of the Project Activity		
Physical address	**Latitude, Decimal Degrees (UTM)**	**Longitude, Decimal Degrees (UTM)**
Sivas province, Central District/TURKEY	39.93833938692388 39.93927832522025 39.940171514674795 39.942844731347066 39.944821258431766 39.94660590699023	36.98209426232223 36.98583519308959 36.989542455691684 36.996685616959006 37.00002223659547 37.00425418913277

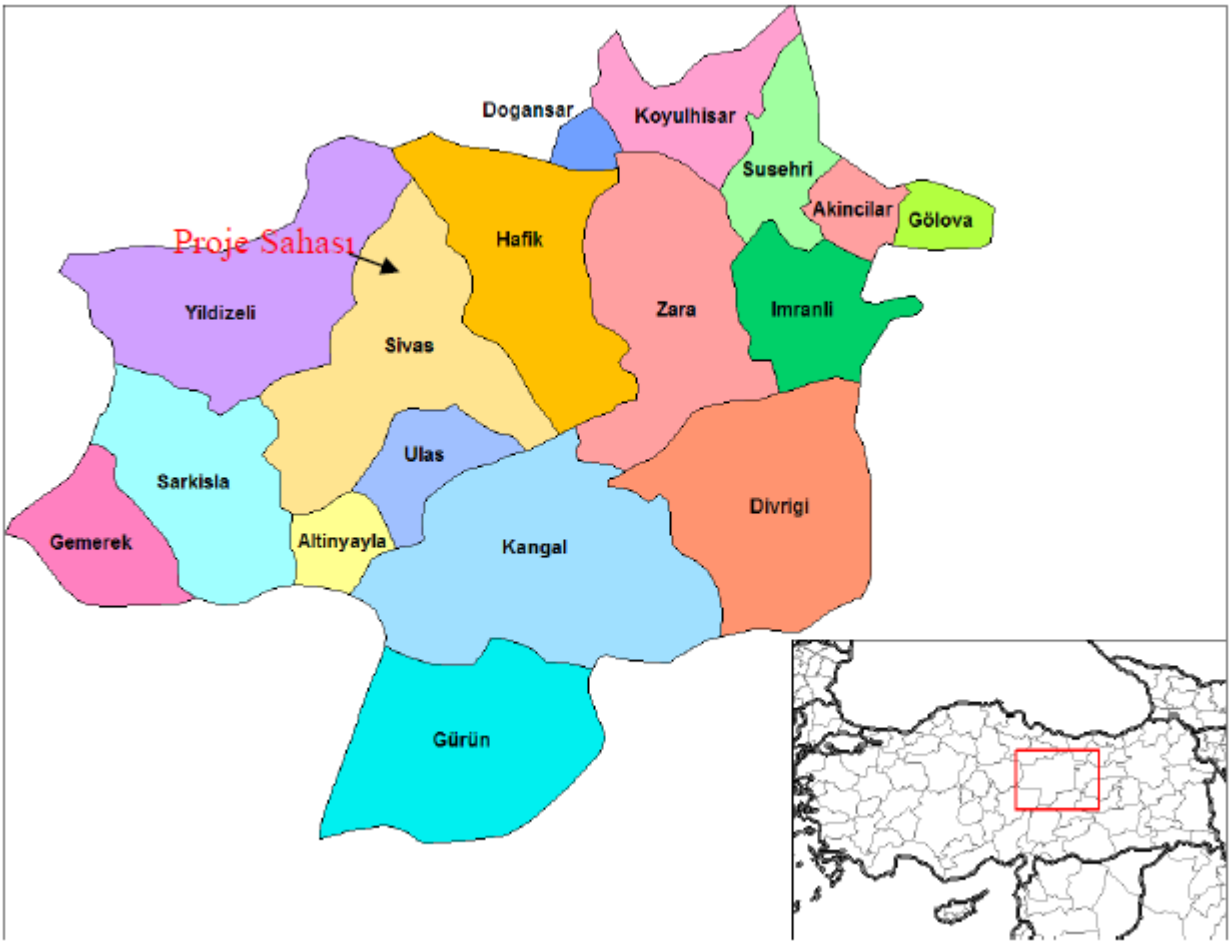

Figure 1 The location of Karaçayır Wind Power Plant Project

A.3. Technologies/measures

The technology chosen is wind turbines utilizing wind power in to energy. The installed capacity of the project per license issued by EMRA (Energy market Regulatory Authority) is 12.6 MWm and 10 MWe which consist of 6 wind turbines with unit capacity of 2.1 MWm/1.667 MWe were selected for the project. Gamesa 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 also for fine visual appearance.

Layout / WTG Type	Gamesa G114_2100kW
Wind Turbine Capacity (MW)	2.1
Hub height (m)	80
Rotor Diameter (m)	114.0
No of turbines	6

Figure 2 Technical Specifications of Gamesa G114_2100kW Turbines[8]

A.4. Project Owner(s)

Location/ Country	Project Owner(s)	Where applicable[9], indicate if the host country has provided approval (Yes/No)
Turkey	1. Mursal Enerji Üretimi Sanayi ve Ticaret Anonim Şirketi 2. Maki Elektrik Enerji Operasyonları Yönetimi Anonim Şirketi	No

A.5. Declaration of intended use of Approved Carbon Credits (ACCs) generated by the Project Activity

The Project Activity is expected to generate ACCs for a full 10-year crediting period and supply the credits to offset the following GHG emissions:

Period		Name of the Entities	Purpose and Quantity of ACCs to be supplied
From	To		
01/10/2016	30/09/2026	CORSIA	204,970 tCo2 to be used for CORSIA

[8] Wind And Energy Yield Assessment Report For Karacayir WPP

[9] For example, *Project Coordination Form* is to be filled-in by Project Owners for projects located in Qatar. A written attestation from the host country's national focal point or the focal point's designee, as required by CORSIA (Refer section A.5 of the PSF guidelines).

Karaçayır WPP, as a small scale wind power plant project, serves 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 rotates in generators and electricity generated here is transferred to the grid for consumer without any greenhouse gas emissions. ACCs from the project activity shall help to realize this seminal technology by providing an adequate compensation for the lacking financial incentives in the Turkish renewable energy market.

On the other hand, Project owner confirms that the carbon credits (ACCs) from the Project Activity shall not be double counted. The project activity is being registered only with GCC and no other carbon standard nor Renewable Energy Certification Program.

A.6. Additional requirements for CORSIA

Please check Section E and F.

Section B. Application of selected methodology(ies)

B.1. Reference to methodology(ies)

The United Nations approved consolidated baseline methodology applicable to this project is AMS-I.D.: Grid connected renewable electricity generation --- Version 18.0[10].

AMS-I.D refers to the following tools:

- “Demonstration of additionality of small-scale project activities” Version 13.1[11], and
- ‘‘Tool to calculate the emission factor for an electricity system’’, Version 0.7.0[12].
- “Investment analysis, tool 27, ver 11.0[13]
- “Tool to determine the remaining lifetime of equipment” , Version 1.0[14]

B.2. Applicability of methodology(ies)

Since the project is below 15 MW installed capacity, small scale methodology AMS I.D. version 18 is used. The applicability criteria are described as follows;

[10] https://cdm.unfccc.int/methodologies/DB/W3TINZ7KKWCK7L8WTXFQQOFQQH4SBK

[11] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-21-v13.1.pdf

[12] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf
[13] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-27-v11.0.pdf
[14] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-10-v1.pdf

Applicability Criteria	Applicability to the project
1. This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass a) supplying electricity to a national or a regional grid; or b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.	The project is renewable energy generation through installation of on-shore wind turbines. The project supplies electricity to the national grid, sale to grid as well as third party. Thus, the project activity complies with this criterion.
2. This methodology is applicable to project activities that (a) Install a Greenfield plant; b) Involve a capacity addition in (an) existing plant(s); (c) Involve a retrofit of (an) existing plant(s); (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) Involve a replacement of (an) existing plant(s).	This methodology is applicable to the project activity as, it's an Greenfield project where Option (a) i.e. install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant) . Hence the project activity fulfils the applicable criterion.
3. Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology: -The project activity is implemented in an existing reservoir with no change in the volume of reservoir; -The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m2; -The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m2.	The Project activity is not a Hydro Power Project, therefore this eligibility criterion is not applicable to the proposed project activity.
4. If the new unit has both renewable and non-renewable components (e.g., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.	The project activity has only renewable component, i.e., wind turbine generated power with 10 MW capacity, which meets the eligibility of 15 MW for a small scale CDM project activity. The capacity of the project shall remain the same for the entire crediting period. Further, the project does not involve any use of fossil fuel. Thus, this criterion is not applicable to the project activity.
5. Combined heat and power (co-generation) systems are not eligible under this category.	The project activity generates only power and hence is not a cogeneration system. Thus, this criterion is not applicable to the project activity.

Applicability Criteria	Applicability to the project
6. In the case of project activities that involve the capacity addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.	The project activity is the new installation of small scale wind turbine generated power project and doesn't involve the addition of new unit to any of existing renewable power generation facility therefore the given criterion is not applicable to the project activity.
7. In the case of retrofit, rehabilitation or replacement, to qualify as a small-scale project, the total output of the retrofitted, rehabilitated or replacement power plant/unit shall not exceed the limit of 15 MW.	Not applicable, project activity is neither retrofit nor modification of existing facility. The installed capacity of the project is 10 MW, which is not exceeding the limit for small scale projects. The entire project is a Green field project activity and not the enhancement or up gradation project.
8. In the case of landfill gas, waste gas, wastewater treatment and agro-industries projects, recovered methane emissions are eligible under a relevant Type III category. If the recovered methane is used for electricity generation for supply to a grid then the baseline for the electricity component shall be in accordance with procedure prescribed under this methodology. If the recovered methane is used for heat generation or cogeneration other applicable Type-I methodologies such as "AMS-I.C.: Thermal energy production with or without electricity" shall be explored.	Not applicable as the project activity is neither a landfill gas, waste gas, wastewater treatment and agro-industries projects, nor a recovered methane emissions project.
9. In case biomass is sourced from dedicated plantations, the applicability criteria in the tool "Project emissions from cultivation of biomass" shall apply.	Not applicable as the project is not a biomass project.

The methodology of AMS I.D. version 18 also refers to the latest approved versions of the following approved methodologies and tools:

(a) "Project emissions from cultivation of biomass";

(b) "ACM0002: Grid-connected electricity generation from renewable source";

(c) "AMS-I.A.: Electricity generation by the user";

(d) "AMS-I.C.: Thermal energy production with or without electricity";

(e) "AMS-I.F.: Renewable electricity generation for captive use and mini-grid";

(f) "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion";

(g) “Tool to calculate the emission factor for an electricity system”;

(h) “Tool to determine the remaining lifetime of equipment”;

(i) “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period”.

Since (a), (b), (c), (d), (e), (f) and (i) are not applicable for this project, only (g) “Tool to calculate the emission factor for an electricity system” and (h) “Tool to determine the remaining lifetime of equipment” were considered since combined margined has been calculated by being based on (g) and the lifetime of equipment has been determined by referencing (h). In addition to this, According to the flowchart for the determination of applicable additionality tool in “Demonstration of additionality of small-scale project activities” Version 13.1”, this project should use regular additionality procedure. For this reason, tool of “Investment analysis, tool 27, ver 11.0 was also applied for this project.

B.3. Project boundary, sources and greenhouse gases (GHGs)

The project spatial extend of Karaçayır WPP 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, the project does not involve any other emissions sources not foreseen by the methodologies.

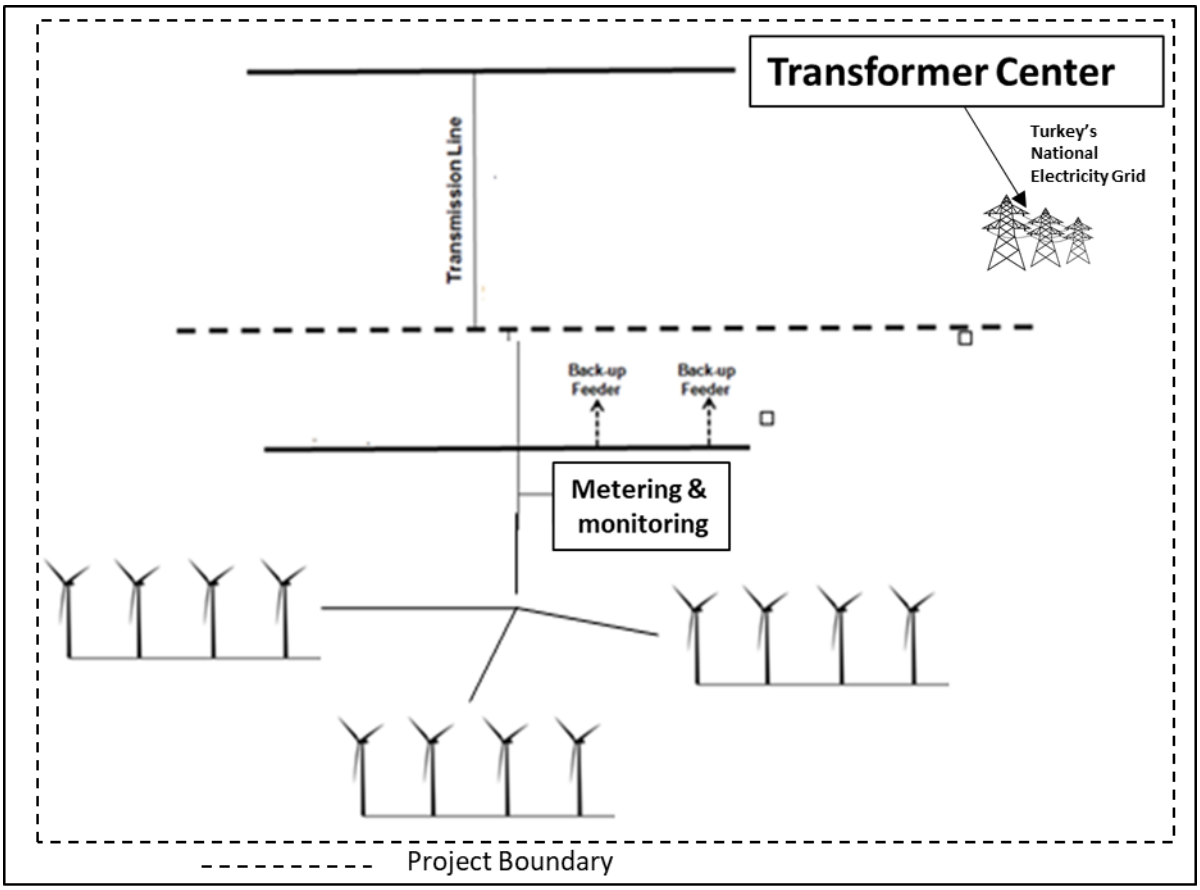

Figure 3 Operation diagram of the project

The table below provides an overview of the emissions sources included or excluded from the project boundary for determination of baseline and project emissions.

Source		GHG	Included?	Justification/Explanation
Baseline	Electricity Generation	CO_2	Yes	Main emission source
		CH_4	No	Minor emission source. Excluded for simplification
		N_2O	No	Minor emission source. Excluded for simplification
Project Activity	For geothermal power plants, fugitive emissions of CH4 and CO2 from non-condensable gases contained in geothermal steam.	CO_2	No	Not Applicable. Project is a wind power plant.
		CH_4	No	Not Applicable. Project is a wind power plant.
		N_2O	No	Not Applicable. Project is a wind power plant.
	CO2 emissions from combustion of fossil fuels for electricity generation in solar thermal power plants and geothermal power plants.	CO_2	No	Not Applicable. Project is a wind power plant.
		CH_4	No	Not Applicable. Project is a wind power plant.
		N_2O	No	Not Applicable. Project is a wind power plant.
	For hydro power plants, emissions of CH4 from the reservoir.	CO_2	No	Not Applicable. Project is a wind power plant.
		CH_4	No	Not Applicable. Project is a wind power plant.
		N_2O	No	Not Applicable. Project is a wind power plant.

B.4. Establishment and description of the baseline scenario

According to the guidelines of the applicable small scale approved methodology AMS.I.D (Version 18), “The baseline scenario is that the 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 into the grid.” Thus, proposed project activity will evacuate power to the National Grid complying with the stated guideline.

To describe the baseline and its development for the project activity, long-term electricity demand and supply projections for Turkey are assessed. Turkish electricity generation is mainly composed of thermal power plants and the share of renewable resources; especially hydroelectric power plants have decreased significantly in recent years whereas share of wind power plants are still very low. Since Turkey is an advanced developing country, there is an increasing demand for electricity which is fully expected to continue in the foreseeable future.

The trend in Turkey to date and given historically slow development of alternative energy resources is to build an increasing number of thermal power plants in the future to satisfy the annual growth in energy consumption demand. Turkey as an advanced developing nation has looked at dealing with energy security by developing and constructing high capacity coal and natural gas power plants. The

development of thermal power plants has been also encouraged by the large natural resource availability in Turkey, especially the abundance of economically accessible lignite.

In the absence of the proposed project activity, the same amount of electricity is required to be supplied via either the current power plants or by increasing the number of thermal power plants thus increasing GHG emissions.

15

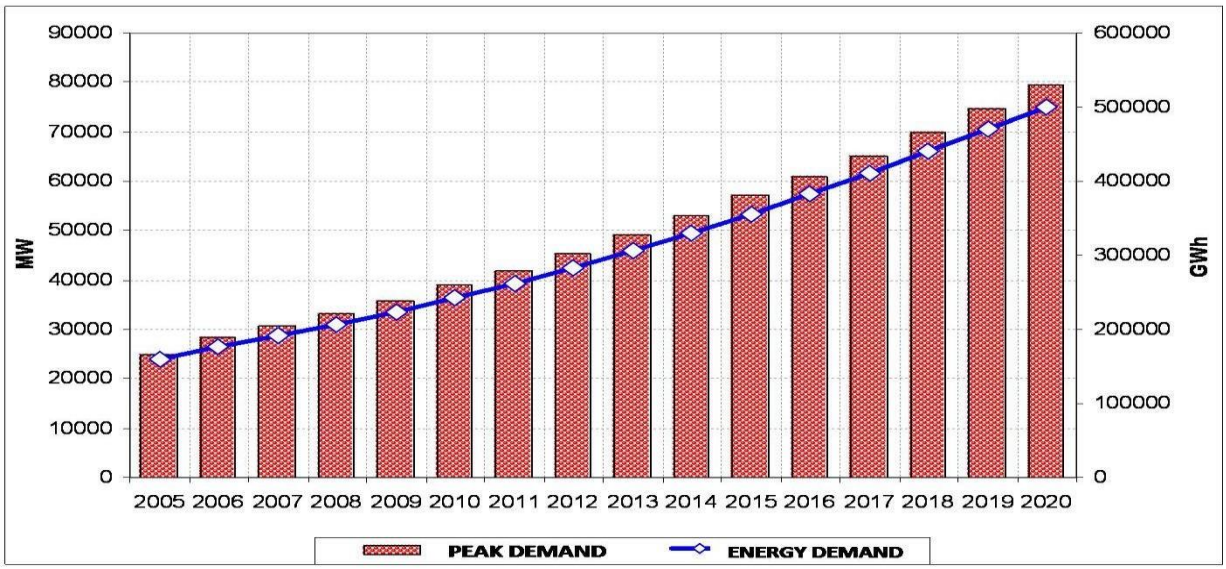

Figure 4 Peak Load and consumption projection for Turkish electricity system between 2005- 2020

B.5. Demonstration of additionality

The additionality of a GCC Project shall be demonstrated by applying the following approach, consisting of two components:

(i) A Legal Requirement Test; and

(ii) An Additionality Test either based on a Positive List test or a projects-specific additionality test.

The project is not enforced by law. The project passes the legal requirement test since there are no enforced laws, statutes, regulations, court orders, environmental-mitigation agreements, permitting conditions of other legally-binding mandates requiring its implementation. Since voluntary commitments/agreements within a sector or by an entity do not constitute the legal requirement, the

[15] https://www.emo.org.tr/ekler/6e51f22c86d237a_ek.doc?tipi=41&turu=X&sube=0

project is additional as per paragraph 46 of Project Standard.

Specify the methodology or activity requirement or product requirement that establish deemed additionality for the proposed project (including the version number and the specific paragraph, if applicable).	This project follows the an approved small scale UNFCCC methodology which is AMS- I.D.: Grid connected renewable electricity generation --- Version 18.0 Selected methodology has been applied together with the "tool to calculate the emission factor for an electricity system, version 0.7.0" and "Demonstration of additionality of small-scale project activities, version 13". These are the latest version of the methodology and related additionality & calculation tool. Investment analysis, tool 27, ver 11.0 has also been used.
Describe how the proposed project meets the criteria for additionality.	1- Proposed project is not undertaken as a ACC project activity. Project without carbon revenue is not financially attractive as discussed in investment analysis section below (benchmark and sensitivity analysis). 2- Continuation of the current situation- supply of equal amount of electricity by the newly built grid connected power plants. Continuation of the current situation is not considered as a realistic alternative due to increasing electricity demand therefore new power plants should be constructed which includes mainly thermal power plants. 3- The following applicable mandatory laws and regulations have been identified: - Electricity Market Law - Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electricity Energy - Energy Efficiency Law - Forest Law - Environment Law

According to tool (TOOL 21, "Demonstration of additionality of small-scale project activities) for demonstration and additionality the steps listed below are followed in detail;

Project participants shall provide an explanation to show that the project activity would not have occurred anyway due to at least one of the following barriers:

(a) Investment barrier: a financially more viable alternative to the project activity would have led to higher emissions;
(b) Technological barrier: a less technologically advanced alternative to the project activity involves lower risks due to the performance uncertainty or low market share of the new technology adopted for the project activity and so would have led to higher emissions;

(c) Barrier due to prevailing practice: prevailing practice or existing regulatory or policy requirements would have led to implementation of a technology with higher emissions;

(d) Other barriers: without the project activity, for another specific reason identified by the project participant, such as institutional barriers or limited information, managerial resources, organizational capacity, financial resources, or capacity to absorb new technologies, emissions would have been higher.

Option (a) has been chosen.

The investment analysis has been done in order to make an economic and financial evaluation of the project according to TOOL 21. No public funding or ODA are available in Turkey for finance of this type of projects. For investment analysis, loan conditions have been determined considering the average market rates/term sheets signed with the banks.

Sub-step 2a - Determine appropriate analysis method

There are three options for the determination of analysis method which are:

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

Since Project generates economic benefits from sales of electricity, the simple cost analysis is not applicable. Also, since the baseline of the project is generation of electricity by the grid, no alternative investment is considered at issue. So, it has been decided to use benchmark analysis for evaluation of the project investment.

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

For benchmark analysis, average value defined by EBRD, which is one of the international finance institutions providing loan to Turkish RE and EE projects, has been used. EBRD has published their evaluation report for similar project types in Turkey in 2015.[16] This report shows that average IRR of 27 Turkish projects financed by EBRD is 15%. Since, it is "local commercial lending rate" which meets the described requirement of Tool 27: "Investment Analysis version 11.0", benchmark IRR has been taken as 15%. Benchmark IRR applied which was taken from EBRD Loan provided to Turkish Clean Energy sector within the scope of clean technology fund (CTF). The proposed benchmark of CTF was deemed consistent with emission reduction project eligibility criteria (that is, significant potential in emission reductions, demonstration potential, development impact and implementation potential).

[16] https://www.ebrd.com/documents/evaluation/operation-evaluation-mid-size-sustainable-energy-financing-facility-midseff.pdf (page 27, table 6)

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.

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

In order to reach 15 % project IRR benchmark, electricity price should increase more than 10.00% from assumed price. This feed-in-tariff price is already very high compared to general market price and not likely to increase. Thus, this 10.00% increase of the feed-in-tariff is not likely to happen. Even if electricity price will increase by 10.00%, project IRR cannot reach up to 15%.

Investment Cost

In order to reach benchmark IRR, investment costs shall be decreased more than 10.00%. Since the equipment contract which has the higher share of the total costs is fixed, 10.00% 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 10.00%, project IRR can barely reach up to 15%.

Energy Yield

To have benchmark IRR, annual energy yield amount shall increase more than 10.00% 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 10.00% 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 10.00%, project IRR cannot reach up to 15%.

Operation Cost

In order to reach benchmark IRR, annual operation cost should decrease more than 10.00%. Such huge decrease in annual operation cost is not likely. Even if operation cost will decrease by 10%, project IRR cannot reach up to 15%.

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

Item	Value	Units	Source
Installed Power	12.6 MWm/10 MWe	MWm/MWe	Generation License of The project
Operational lifetime of the project	25	years	Tool to determine the remaining lifetime of equipment
Net Generation to be sold	35,500	MWh/yr	Please see IRR calculation sheet
Investment Cost	Confidential	-	Cost Information related

& O&M related costs			these items will be submitted to GCC Verifier
Electricity tariff	Between 2016-2026 70.06 After 2026 49.7	EUR/MWh	Please see IRR calculation sheet
Depreciation Duration	10	years	Please see IRR calculation sheet
Corporate Tax Rate	20%	-	Please see IRR calculation sheet

Technical life time of Karacayir 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 on-shore wind turbines is 25 years.

Operational life time of the Karacayir 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 on-shore wind turbines is 25 years.

The project IRR (after tax) of Karacayir WPP is calculated on the basis of expected cash flows (investment, operating costs and revenues from electricity sale), as used in the financial analysis for the feasibility assessment of the project. The parameters and values used for the IRR calculation are available to GCC Verifier during verification. The resulting IRR for 25 years is 7.59%.

The Benchmark is 15.00% and it does clearly exceed the resulting project IRRs for design capacities, thus rendering the project activity economically unattractive.

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 IRR calculation. Key parameters are varied with +/-10%. The worst, base and best-case results for each parameter variation are given in table below.

The sensitivity analysis confirms that the proposed project activity is unlikely to be economically attractive without the revenues from ACCs as even the maximum IRR result (10.32%) for the best case scenario is below the benchmark, which is 15%.

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 1 Project IRR results according to different parameters

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)	4.85 %	7.59 %	10.32 %	8.94 %	7.59 %	6.45 %	6.11 %	7.59 %	8.99 %	8.21 %	7.59 %	6.89 %

B.6. Estimation of emission reductions

B.6.1. Explanation of methodological choices

The Emission Factor has been calculated in a conservative manner as requested by the methodology. The basic assumptions made are;

- Emission factor will remain same over the crediting period,
- Emission factor of fuels sources is “0” or the lowest value in the references when there is no information available.

The additionality assessment of the project activity has been demonstrated using the latest version of the “Tool for assessment and demonstration of additionality, ver 7”.

According the “Tool to calculate the emission factor for an electricity system”, ver. 0.7, the following four methods are applicable to calculate the operating margin:

a) Simple OM,
b) Simple adjusted OM,
c) Dispatch Data Analysis OM and
d) Average OM.

The Simple Operating Margin (OM) emission factor ($EF_{grid,\ OM,\ y}$) is calculated as the generation weighted average CO_2 emissions per unit net electricity generation (tCO_2/MWh) of all the generating plants serving the system, excluding low-cost/must-run power plants. As electricity generation from solar and low cost biomass facilities is insignificant and there are no nuclear plants in Turkey, the only low cost /must run plants considered are hydroelectric, wind and geothermal facilities. The Turkish electricity mix does not comprise nuclear energy. Also there is no obvious indication that coal is used as must run resources. Therefore, the only low cost resources in Turkey, which are considered as must-run, are Hydro, Renewables and Waste, Geothermal and Wind (according to statistics of TEIAS).

$$EF_{grid,OMsimple,y} = \frac{\sum_i FC_{i,y} x NCV_{i,y} x EF_{CO2,i,y}}{EG_y} \quad (1)$$

Where:

$EF_{grid,OMsimple,y}$	=	Simple operating margin CO_2 emission factor in year y (tCO_2/MWh)
$FC_{i,y}$	=	Amount of fossil fuel type i consumed in the project electricity system in year y (mass or volume unit)
$NCV_{i,y}$	=	Net calorific value (of fossil fuel type i in year y (GJ / mass or volume unit)
$EF_{CO2,i,y}$	=	CO_2 emission factor of fossil fuel type i in year y (tCO_2/GJ)
EG_y	=	Net electricity generated and delivered to the grid by all power sources serving the system, not including low-cost / must-run power plants / units,

		in year y (MWh)
i	=	All fossil fuel types combusted in power sources in the project electricity system in year y
y	=	three most recent years for which data is available at the time of submission of the PSF to the GCC Verifier for verification

The methodology has been applied in a conservative manner. Tools addressed by the applied methodology have been used to calculate baseline, project and leakage emissions. The equations used are:

Emission Factor

The build margin emissions factor is the generation-weighted average emission factor (tCO_2/MWh) of all power units *m* during the most recent year *y* for which power generation data is available, calculated as follows:

$$EF_{grid,BM,y} = \frac{\sum_m EG_{m,y} x EF_{EL,m,y}}{\sum_m EG_{m,y}} \quad (2)$$

Where:

$EF_{grid,BM,y}$	=	Build margin CO_2 emission factor in year y (tCO_2/MWh)
$EG_{m,y}$	=	Net quantity of electricity generated and delivered to the grid by power unit m in year y (MWh)
$EF_{EL,m,y}$	=	CO_2 emission factor of power unit m in year y (tCO_2/MWh)
m	=	Power units included in the build margin
y	=	Most recent historical year for which data is available

Since fuel consumption and electricity generation data is not available for the Turkey's case, *Option A2* of Simple OM method is used to calculate emission factor. The formulation of emission factor is given below:

$$EF_{EL,m,y} = \frac{EF_{CO2,m,i,y} x 3.6}{\eta_{m,y}}$$

(3)

Where:

$EF_{EL,m,y}$	=	CO_2 emission factor of power unit m in year y (tCO_2/MWh)
$EF_{CO2,m,i,y}$	=	Average CO_2 emission factor of fuel type i used in power unit m in year y (tCO_2/GJ)
$\eta_{m,y}$	=	Average net energy conversion efficiency of power unit m in year y (%)
m	=	All power units serving the grid in year y except low-cost/must-run power units
y	=	Most recent year for which data is available at the time of submission of the PSF to the GCC Verifier

For BM factor calculation, since no official emission factors for different fuel types are available, lower confidence default values of IPCC Guidelines are applied.
The combined margin emission factor is calculated as follows:

$$EF_{grid,CM,y} = EF_{grid,OM,y} * w_{OM} + EF_{grid,BM,y} * w_{BM} \quad \textbf{(4)}$$

Where:

$EF_{grid,BM,y}$	=	Build margin CO_2 emission factor in year y (tCO_2/MWh)
$EF_{grid,OMy}$	=	Operating margin CO_2 emission factor in year y (tCO_2/MWh)
w_{OM}	=	Weighting of operating margin emissions factor (%)
w_{BM}	=	Weighting of build margin emissions factor (%)

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y \quad \textbf{(5)}$$

Where:
ER_y = Emission reductions in year *y* (t CO_2/yr).
BE_y = Baseline emissions in year *y* (t CO_2/yr).
PE_y = Project emissions in year *y* (t CO_2/yr).
LE_y = Leakage emissions in year *y* (t CO_2/yr).

Project emissions
The proposed project activity involves the generation of electricity by development of a wind plant. The generation of electricity does not result in greenhouse gas emissions and therefore is taken as 0 tCO_2/year.

Leakage
No Leakage emissions are considered. The main emission potentially giving rise to leakage in the context of electrical sector projects is emission arising due to activities arising such as power plant construction and upstream emission from fossil fuel use (e.g. extraction, processing, and transport). These emission sources are neglected.

Then: $ER_y = BE_y$

Baseline emissions
Baseline emissions include only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity, calculated as follows:

$$BE_y = (EG_y - EG_{baseline}) \times EF_{grid,CM,y} \quad \textbf{(6)}$$

Where:
BE_y = Baseline emissions in year y (tCO_2/yr).
EG_y = Electricity supplied by the project activity to the grid (MWh).
$EG_{baseline}$ = Baseline electricity supplied to the grid in the case of modified or retrofit facilities (MWh). For new power plants this value is taken as zero.
$EF_{grid,CM,y}$ = Combined margin CO2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system (ver 0.7)".
The project activity is the installation of a new grid-connected renewable power plant so, $EG_{baseline} = 0$

B.6.2. Data and parameters fixed ex ante

Data / Parameter Table 1.

Data / Parameter:	**EG_y**
Methodology reference	AMS-I.D
Data unit	MWh
Description	Net electricity generated by power plant/unit m, k or n (or in the project electricity system in case of EGy) in year y or hour h
Measured/calculated /default	Measured
Data source	For gross generation electricity generated and delivered to the grid by all power sources serving the system, not including low-cost/must run power plants in year y : https://www.teias.gov.tr/tr-TR/turkiye-elektrik-uretim-iletim-istatistikleri Türkiye Brüt Elektrik Enerjisi Üretiminin Üretici Kuruluşlar ve Birincil Enerji Kaynaklarına göre Yıllar İtibariyle Gelişimi (2006-2017) For net generation and imported electricity:

	https://www.teias.gov.tr/tr-TR/turkiye-elektrik-uretim-iletim-istatistikleri (İthal Edilen Elektrik Enerjisinin Yıllar İtibariyle Aylık Dağılımı (2009-2018)
Value(s) of monitored parameter	197,054.8 MWh in 2014 176,674.4 MWh in 2015 181,420.7 MWh in 2016 555,149.8 MWh in total between 2014 and 2016.
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	Once in the crediting period
Calculation method (if applicable)	Calculation of baseline emissions
QA/QC procedures	-
Purpose of data	Data used for emission reduction calculation (for calculation of OM, Net-to-Gross electricity ratio and share of low-cost must-run sources)
Additional comments	-

Data / Parameter Table 2.

Data / Parameter:	**$FC_{i,y}$**
Methodology reference	AMS-I.D
Data unit	Mass or volume unit
Description	Amount of fuel type i consumed in the project electricity system in year y
Measured/calculated/default	Measured
Data source	TEIAS web page https://www.teias.gov.tr/tr-TR/turkiye-elektrik-uretim-iletim-istatistikleri III – Electricity Production / Consumption / Losses 2016 (TRDF6F.xls)

Value(s) of monitored parameter

Energy Sources	2014	2015	2016
Hard Coal+Imported Coal	14,501,934	16,629,492	19,642,410
Lignite	57,696,139	49,940,131	60,213,772
Fuel Oil	754,283	516,912	526,674
Diesel Oil	119,988	238,388	306,393
LPG	0	0	0
Naphta	0	0	0
Natural Gas	25,426,014	20,914,868	18,954,093

Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	Once (ex-ante)
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculation of baseline emissions
Additional comments	-

Data / Parameter Table 3.

Data / Parameter:	**EFCO2, i, y**
Methodology reference	AMS-I.D
Data unit	tCO2/GJ
Description	CO2 emission factor of fuel type i used in power unit m in year y
Measured/calculated/default	Measured
Data source	For EF of fossil fuels, IPCC values at the lower limit have been used.
Value(s) of monitored parameter	**Energy Sources** / **EFCO2, I (kg/TJ)** *Hard Coal+Imported Coal* / *89.50* *Lignite* / *90.90* *Fuel Oil* / *72.60* *Diesel Oil* / *72.60* *LPG* / *61.60* *Naphta* / *69.30* *Natural Gas* / *54.30*
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	Once in the crediting period
Calculation method (if applicable)	According to the applied tool, IPCC default values at lower limit of 95% confidence interval can be used. Although, the actual emission reduction is expected to be higher due to high EF of fuels consumed in existing power plants, IPCC values have been used for conservativeness as requested by the methodology.
QA/QC procedures	-

Purpose of data	Calculation of baseline emissions
Additional comments	-

Data / Parameter Table 4.

Data / Parameter:	**ɳ m,y**
Methodology reference	AMS-I.D
Data unit	-
Description	Average net energy conversion efficiency of power unit m in year y
Measured/calculated/default	Default
Data source	Default values provided in the ER calculation sheet
Value(s) of monitored parameter	**Fuels Used in Set Sample** / **Effective CO2 emission factor (tCO2/GJ)** / **Average Efficiency (ηm,y)** / **EFel (tCO2/MWh)** Natural Gas / 0.0543 / 62.00% / 0.3153 Lignite / 0.0909 / 50.00% / 0.6545 Import Coal / 0.0895 / 50.00% / 0.6444
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	Once in the crediting period
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculation of baseline emissions
Additional comments	-

Data / Parameter Table 5.

Data / Parameter:	**NCVi,y**
Methodology reference	AMS-I.D
Data unit	GJ/mass or volume unit
Description	Net Calorific Value of fuel types in the years of 2014, 2015 and 2016

<table>
<tr><td>Measured/calculated/default</td><td>Measured</td></tr>
<tr><td>Data source</td><td>TEIAS web page
http://www.teias.gov.tr/sites/default/files/2019-10/75.xls (Türkiye Termik Santrallarında Kullanılan Yakıtların Isı Değerlerinin Üretici Kuruluşlara Dağılımı (2006-2018)</td></tr>
<tr><td>Value(s) of monitored parameter</td><td>
<table>
<tr><th>Energy Sources</th><th>NCVi 2014 (TJ/Gg)</th><th>NCVi 2015 (TJ/Gg)</th><th>NCVi 2016 (TJ/Gg)</th></tr>
<tr><td>Hard Coal+Imported Coal</td><td>23.93</td><td>24.08</td><td>24.07</td></tr>
<tr><td>Lignite</td><td>7.11</td><td>7.16</td><td>7.20</td></tr>
<tr><td>Fuel Oil</td><td>41.32</td><td>44.22</td><td>42.42</td></tr>
<tr><td>Diesel Oil</td><td>43.44</td><td>43.78</td><td>0.00</td></tr>
<tr><td>LPG</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
<tr><td>Naphta</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
<tr><td>Natural Gas</td><td>37.49</td><td>37.84</td><td>38.01</td></tr>
</table>
</td></tr>
<tr><td>Measurement/ Monitoring equipment (if applicable)</td><td>-</td></tr>
<tr><td>Measuring/reading/ recording frequency (if applicable)</td><td>Once in the crediting period</td></tr>
<tr><td>Calculation method (if applicable)</td><td>Data has been calculated from Grid Operator’s (TEIAS) statistics</td></tr>
<tr><td>QA/QC procedures</td><td>-</td></tr>
<tr><td>Purpose of data</td><td>Calculation of baseline emissions</td></tr>
<tr><td>Additional comments</td><td>-</td></tr>
</table>

Data / Parameter Table 6.

Data / Parameter:	**$EF_{GRID,CM,Y}$**
Methodology reference	AMS-I.D
Data unit	t CO2e/MWh
Description	CO2 emission factor of the grid electricity in year y
Measured/calculated/default	Calculated
Data source	-
Value(s) of monitored parameter	0.5774 tCO2/MWh
Measurement/ Monitoring equipment (if applicable)	As per the requirements in “Tool to calculate the emission factor for an electricity system”
Measuring/reading/ recording frequency (if applicable)	Once in the crediting period

Calculation method (if applicable)	Data has been calculated from Grid Operator's (TEIAS) statistics
QA/QC procedures	-
Purpose of data	Calculation of baseline emissions
Additional comments	-

B.6.3. Ex-ante calculation of emission reductions

Baseline scenario is identified and described in B.4. Emission reductions due to project activity will be calculated according to "Tool to calculate the emission factor for an electricity system"(ver 07.0) (Tool) as indicated in AMS I.D.

Stepwise approach of "Tool to calculate the emission factor for an electricity system" version 07.0 is used to find this combined margin (emission coefficient) as described below:

Step 1. Identify the relevant electric systems

There are 21 regional distribution regions in Turkey but no regional transmission system is defined. In Article 20 of License Regulation it is stated that:

> "*TEIAS shall be in charge of all transmission activities to be performed over the existing transmission facilities and those to be constructed as well as the activities pertaining to the operation of* ***national transmission system*** *via the National Load Dispatch Center and the regional load dispatch centers connected to this center and the operation of Market Financial Reconciliation Center*[17]".

As it can be understood from this phrase, only one transmission system, which is national transmission system is defined and only TEİAŞ is in the charge of all transmission system related activities. Moreover, a communication with representative of TEIAS, which indicates that: "*There are not significant transmission constraints in the national grid system which is preventing dispatch of already connected power plants*" is submitted to the GCC Verifier. Therefore, the national grid is used as electric power system for project activity. The national grid of Turkey is connected to the electricity systems of neighboring countries. Complying with the rules of the tool, the emission factor for imports from neighboring countries is considered 0 (zero) tCO_2/MWh for determining the OM. There is no information about interconnected transmission capacity investments, as TEİAŞ, who operates the grid, also didn't take into account imports-exports for electricity capacity projections.[18]Because of that, for BM calculation transmission capacity is not considered.

Step 2. Choose whether to include off-grid power plants in the Project electricity system (optional)

According to Tool project participants may choose between the following two options to calculate the

[17] Please see, www.enermet.com.tr/upload/mce/.../1._electricity_market_licensing_regulation.doc (Page 21)

[18] Please see, http://www.epdk.org.tr/TR/Dokumanlar/Elektrik/YayinlarRaporlar/UretimKapasiteProjeksiyonlari

operating margin and build margin emission factor:

Option I: Only grid power plants are included in the calculation.

Option II: Both grid power plants and off-grid power plants are included

For this project **Option I** is chosen.

Step 3: Select a method to determine the operating margin (OM);

The calculation of the operating margin emission factor ($EF_{grid,OM,y}$) is based on one of the following methods:

(a) Simple OM; or
(b) Simple adjusted OM; or
(c) Dispatch data analysis OM; or
(d) Average OM.

The Simple Operating Margin (OM) emission factor ($EF_{grid,\ OM,\ y}$) is calculated as the generation weighted average CO_2 emissions per unit net electricity generation (tCO_2/MWh) of all the generating plants serving the system, excluding low-cost/must-run power plants. As electricity generation from solar and low cost biomass facilities is insignificant and there are no nuclear plants in Turkey, the only low cost /must run plants considered are hydroelectric, wind and geothermal facilities. The Turkish electricity mix does not comprise nuclear energy. Also there is no obvious indication that coal is used as must run resources. Therefore, the only low cost resources in Turkey, which are considered as must-run, are Hydro, Renewables and Waste, Geothermal and Wind (according to statistics of TEIAS).

Table 2: *Share of Low Cost Resource (LCR) Production 2012-2016 (Production in GWh)*[19]

Share of Low Cost Resource (LCR) Production 2012-2016 (Production in GWh)					
	2012	**2013**	**2014**	**2015**	**2016**
Gross production	211,207.7	240,154.0	251,962.8	261,783.30	274,407.70
TOTAL LCR Production	55,837.6	69,512.7	52,961.4	83,981.0	89,938.10
Hydro	51,795.5	59,420.5	40,644.7	67,145.83	67,230.90
Renewables and Waste	457.5	1,171.2	1,432.6	1,758.19	2,371.60
Geothermal and Wind	3,584.6	8,921.0	10,884.1	15,076.97	20,335.60
Share of LCRs	*26.44%*	*28.95%*	*21.02%*	*32.08%*	*32.78%*
Average of last five years	**28.25%**				

As average share of low cost resources for the last five years is far below 50% (28.25%), the simple OM method is applicable to calculate the operating margin emission factor ($EF_{grid,OM,y}$).

For the simple OM, the emissions factor can be calculated using either of the two following data vintages:

[19] Please see: https://www.teias.gov.tr/tr-TR/turkiye-elektrik-uretim-iletim-istatistikleri

- **Ex ante option:** A 3-year generation-weighted average, based on the most recent data available at the time of submission of the GCC-PSF to the GCC Verifier for verification, or
- **Ex post option:** The year, in which the project activity displaces grid electricity, requiring the emissions factor to be updated annually during monitoring.

The **ex-ante option is selected for Simple OM method**, with the most recent data for the baseline calculation stemming from the years 2014 to 2016.

Step 4. Calculate the operating margin emission factor according to the selected method

The simple OM emission factor is calculated as the generation-weighted average CO_2 emissions per unit net electricity generation (tCO_2/MWh) of all generating power plants serving the system, not including low-cost/must-run power plants. The calculation of the simple OM emission factor can be based on

- **Option A:** data on net electricity generation a CO_2 emission factor of each power unit, or
- **Option B:** data on the total net electricity generation of all power plants serving the system and the fuel types and total fuel consumption of the project electricity system.

Option B is chosen to calculate the Simple OM, as there is no power plant specific data available, renewable power generation are considered as low-cost power sources and amount of electricity supplied to the grid by these sources is known.

Where Option B is used, the simple OM emission factor is calculated based on the net electricity supplied to the grid by all power plants serving the system, not including low-cost / must-run power plants, and based on the fuel type(s) and total fuel consumption of the project electricity system, as follows:

$$EF_{grid,OMsimple,y} = \frac{\sum_i FC_{i,y} x NCV_{i,y} x EF_{CO2,i,y}}{EG_y} \quad (1)$$

Where:

$EF_{grid,OMsimple,y}$	=	Simple operating margin CO_2 emission factor in year y (tCO_2/MWh)
$FC_{i,y}$	=	Amount of fossil fuel type i consumed in the project electricity system in year y (mass or volume unit)
$NCV_{i,y}$	=	Net calorific value (of fossil fuel type i in year y (GJ / mass or volume unit)
$EF_{CO2,i,y}$	=	CO_2 emission factor of fossil fuel type i in year y (tCO_2/GJ)
EG_y	=	Net electricity generated and delivered to the grid by all power sources serving the system, not including low-cost / must-run power plants / units, in year y (MWh)
i	=	All fossil fuel types combusted in power sources in the project electricity system in year y
y	=	three most recent years for which data is available at the time of submission of the PSF to the GCC Verifier for verification

For the calculation of the OM the consumption amount and heating values of the fuels for each

sources used for the years 2014, 2015 and 2016, is taken from the TEİAŞ annual statistics, which holds data on annual fuel consumption by fuel types as well as electricity generation amounts by sources and electricity imports. All the data needed for the calculation, including the emission factors and net calorific values (NCVs), are provided in excel table that shows OM emission factor, Fossil Fuel Consumption Amounts and Net Calorific Values. Total CO_2 emission due to electricity generation in Turkey for the years of 2014, 2015 and 2016 are given in the table below.

Table 3*: CO_2 emissions from electricity production 2014-2016 ($ktCO_2$)*

	2014	2015	2016
CO_2-Emmissions	113,727	123,437	133,025

Table below presents the gross electricity production data by all the relevant energy sources. Low-cost/must run resources like hydro, wind, geothermic and biomass do not emit fossil CO_2 and thus are not taken into account in calculations.

Table 4: Gross electricity production by fossil energy sources 2014-2016 (GWh)[20]

Gross Electricity Production by Energy Source 2014-2016 [GWh]			
Natural Gas	120,576.0	99,218.70	89,227.10
Lignite	36,615.4	31,335.70	38,569.90
Coal	39,647.3	44,829.90	53,703.20
Fuel Oil	1,662.9	980.4	969.10
Motor Oil	482.4	1,243.60	957.20
Naphtha	0.0	0.0	0.00
LPG	0.0	0.0	0.00
Total fossil fuels	**198,984.0**	**177,608.3**	**183,426.5**

Above table shows gross data, but EG_y in the above described formula means electricity delivered to the grid, i.e. net generation, the following table shall help to derive net data by calculating the net/gross proportion on the basis of overall gross and net production numbers.

***Table 5**: Net/gross electricity production 2015-2017 (GWh)[21]*

Relation Net/Gross Electricity Production 2014-2016			
Gross Production [GWh]	251,962.82	261,783.30	274,407.70
Net Production [GWh]	239,448.83	249,889.50	261,936.80
Relation	**95.03%**	**95.46%**	**95.46%**

[20] Please see: https://www.teias.gov.tr/tr-TR/turkiye-elektrik-uretim-iletim-istatistikleri

[21] Please see: https://www.teias.gov.tr/tr-TR/turkiye-elektrik-uretim-iletim-istatistikleri

Multiplying these overall gross/net relation percentages with the fossil fuels generation amount does in fact mean an approximation. However this is a conservative approximation as the consumption of plant auxiliaries of fossil power plants is higher than for the plants that are not included in the baseline calculation. In the end this would lead to a lower net electricity generation and therefore to a higher OM emission factor and higher emission reductions.

Table given below shows the resulting net data for fossil fuel generation and adds electricity imports.

Table 6*: Electricity supplied to the grid, relevant for OM (GWh)*

Net El. Production by fossil fuels and Import 2014-2016 [GWh]			
Net El. Prod. by fossil fuels	189,101.3	169,538.9	175,090.4
Electricity Import	7,953.5	7,135.5	6,330.3
Electricity supplied to grid by relevant sources	**197,054.8**	**176,674.4**	**181,420.7**

Electricity import is added to the domestic supply in order to fulfill the Baseline Methodology requirements. Imports from connected electricity systems located in other countries are weighted with an emission factor of 0 (zero) tCO_2/MWh.

The last step is to calculate $EF_{grid,OMsimple,y}$:

Table 7: *Calculation of Weighted $EF_{grid,OMsimple,y}$ ($ktCO_2/GWh$)*

	2014	**2015**	**2016**
CO2-Emmissions (ktCO2)	122,715	113,727	122,454
Net Electricity Supplied to Grid by relevant sources (GWh)	197,054.8	176,674.4	181,420.7
EFgrid,OMsimple,y (ktCO2/GWh)	0.6227	0.6437	0.6750
3-year Generation Weighted Average $EF_{grid,OMsimple,y}$ ($ktCO_2/GWh$)	**0.6465**		

$EF_{grid,OMsimple,y}$ = 0.6465 ($ktCO_2/GWh$)

Step 5. Calculate the build margin (BM) emission factor

Option 1: For the first crediting period, calculate the build margin emission factor ex ante based on

the most recent information available on units already built for sample group m at the time of GCC-PSF submission to the GCC Verifier for verification. For the second crediting period, the build margin emission factor should be updated based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the GCC Verifier. This option does not require monitoring the emission factor during the crediting period.

Option 2: For the first crediting period, the build margin emission factor shall be updated annually, *ex post*, including those units built up to the year of registration of the project activity or, if information up to the year of registration is not yet available, including those units built up to the latest year for which information is available. For the second crediting period, the build margin emissions factor shall be calculated *ex ante*, as described in Option 1 above.

Again, the project proponents can chose between two options according to the calculation tool: calculate the BM ex-ante based on the latest available data or update the BM each year ex post. Option 1, the ex-ante approach, is again chosen.

The sample group of power units are used to calculate the build margin should be determined as per the following procedure, consistent with the data vintage selected above. There is no official data available on plant-based annual electricity production for years 2012, 2013, 2014, 2015 and 2016. The most recent official data available on plant-based annual electricity production belongs to year 2012. In order to update the BM to the year 2016, the only data which can used to estimate the annual production is the installed capacity of plants. It can be assumed that every power plant operates with full capacity all around the year in order to tackle this data problem. It should be noted that the usage of capacity is a CDM Executive Board approved deviation from the methodology AM005 for a similar situation. According to the CDM-EB-approved deviation, in the absence of annual production data use of weights estimated using installed capacity in place of annual electricity generation is permitted.[22]

While determining the sample group, energy investments data from Ministry of Energy and Natural Sources website[23] is used. VER plants are excluded from sample group. While identifying the sample group dismantled, revised, retrofits are not included. Only new capacity additions (power plants / units) are taken into account. All power plants put in operation until the end of 2016 are given in Excel sheet Sample Group for BM Factor Calculation (Latest Power Plants put in Operation in Turkey). Total installed capacity at the end of 2016 is 78,488.40 MW and 20% of this capacity is 15697.68 (AEGSET->20%) MW and total installed capacity of last five power plants put in operation in 2016 is 167.10 MW (AEGSET-5-units). Since AEGSET->20% is bigger than AEGSET-5-units, SET->20% is chosen as SETsample. Also in the sample group there is no power plant started supply electricity to grid more than 10 years ago, steps d, e and f are ignored.

[22] Please see: http://cdm.unfccc.int/filestorage/A/M/_/AM_CLAR_QEJWJEF3CFBP1OZAK6V5YXPQKK7WYJ2/Several%20projects%20in%20China%20%28application%20of%20approved%20methodology%20AM0005%29.pdf?t=d1h8cGlsM2dqfDAa2Ej_S79ygpyv18-h9mdh

[23] Please see: http://www.enerji.gov.tr/tr-TR/EIGM-Raporlari

The build margin emissions factor is the generation-weighted average emission factor (tCO_2/MWh) of all power units *m* during the most recent year *y* for which power generation data is available, calculated as follows:

$$EF_{grid,BM,y} = \frac{\sum_m EG_{m,y} x EF_{EL,m,y}}{\sum_m EG_{m,y}} \quad (2)$$

Where:

$EF_{grid,BM,y}$	=	Build margin CO_2 emission factor in year y (tCO_2/MWh)
$EG_{m,y}$	=	Net quantity of electricity generated and delivered to the grid by power unit m in year y (MWh)
$EF_{EL,m,y}$	=	CO_2 emission factor of power unit m in year y (tCO_2/MWh)
m	=	Power units included in the build margin
y	=	Most recent historical year for which data is available

Since fuel consumption and electricity generation data is not available for the Turkey's case, *Option A2* of Simple OM method is used to calculate emission factor. The formulation of emission factor is given below:

$$EF_{EL,m,y} = \frac{EF_{CO2,m,i,y} x 3.6}{\eta_{m,y}} \quad (3)$$

Where:

$EF_{EL,m,y}$	=	CO_2 emission factor of power unit m in year y (tCO_2/MWh)
$EF_{CO2,m,i,y}$	=	Average CO_2 emission factor of fuel type i used in power unit m in year y (tCO_2/GJ)
$\eta_{m,y}$	=	Average net energy conversion efficiency of power unit m in year y (%)
m	=	All power units serving the grid in year y except low-cost/must-run power units
y	=	Most recent year for which data is available at the time of submission of the PSF to the GCC Verifier

$EF_{EL,m,y}$ calculation and results is given in the below table. For BM factor calculation, since no official emission factors for different fuel types are available, lower confidence default values of IPCC Guidelines are applied. Explanation of emission factor selection for each energy sources and references are given in EF Calculation Excel.

Table 8: $EF_{EL,m,y}$ calculation by using equation (3)

Fuels Used in Set Sample	Effective CO2 emission factor (tCO2/GJ)	Average Efficiency (ηm,y)	$EF_{EL,m,y}$ (tCO2/MWh)
Natural Gas	0.0543	62.00%	0.3153
Lignite	0.0909	50.00%	0.6545
Import Coal	0.0895	50.00%	0.6444

For the calculation of $EF_{grid,BM,y}$, since there is no data available on plant-based annual electricity generation, it can be assumed that every power plant operates with full capacity all around the year. Moreover, since this assumption affects both numerator and denominator of equation (2), multiplication of installed capacity with 8760 hours/year would cancel each other. Therefore by using data on the table above and using the equation (2), $EF_{grid,BM,y}$ is calculated and presented below. Lastly, Gross/Net Electricity Generation difference is taken into account while calculating $EF_{grid,BM,y}$.

Table 9: Data used for $EF_{grid,BM,y}$ calculation

	Total Natural Gas Capacity Addition (MW)	Emission Addition of NG (MW*tCO_2/MWh)	Total Lignite Capacity Addition (MW)	Emission Addition of Lignite (MW*tCO_2/MWh)	Total Import Coal Capacity Addition (MW)	Emission Addition of Import Coal (MW*tCO_2/MWh)
Sample Group Total	6102.790	1924.150628	2327.890	1523.557447	3582.300	2308.43412

$$EF_{grid,BM,y} = 0.3701\ tCO_2/MWh$$

Step 6. Calculate the combined margin emission factor

The calculation of the combined margin (CM) emission factor (*EFgrid,CM,y*) is based on one of the following methods:
(a) Weighted average CM; or

(b) Simplified CM.

The combined margin emission factor is calculated as follows:

$$EF_{grid,CM,y} = EF_{grid,OM,y} * w_{OM} + EF_{grid,BM,y} * w_{BM} \quad \textbf{(4)}$$

Where:

$EF_{grid,BM,y}$	=	Build margin CO_2 emission factor in year y (tCO_2/MWh)
$EF_{grid,OMy}$	=	Operating margin CO_2 emission factor in year y (tCO_2/MWh)
w_{OM}	=	Weighting of operating margin emissions factor (%)
w_{BM}	=	Weighting of build margin emissions factor (%)

$EF_{grid,CM,y}$ = 0.6465 tCO2/MWh * 0.75 + 0.3701 tCO2/MWh * 0.25

=0.5774 tCO2/MWh

According to the Tool for solar power generation project activities: w_{OM} = 0.75 and w_{BM} = 0.25.

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y \quad \textbf{(5)}$$

Where:
ER_y = Emission reductions in year *y* (t CO_2/yr).
BE_y = Baseline emissions in year *y* (t CO_2/yr).
PE_y = Project emissions in year *y* (t CO_2/yr).
LE_y = Leakage emissions in year *y* (t CO_2/yr).

Project emissions
The proposed project activity involves the generation of electricity by development of a wind plant. The generation of electricity does not result in greenhouse gas emissions and therefore is taken as 0 tCO_2/year.

Leakage
No Leakage emissions are considered. The main emission potentially giving rise to leakage in the context of electrical sector projects is emission arising due to activities arising such as power plant construction and upstream emission from fossil fuel use (e.g. extraction, processing, and transport). These emission sources are neglected.

Then: $ER_y = BE_y$

Baseline emissions
Baseline emissions include only CO_2 emissions from electricity generation in fossil fuel fired power

plants that are displaced due to the project activity, calculated as follows:

$BE_y = (EG_y - EG_{baseline}) \times EF_{grid,CM,y}$ **(6)**

Where:
BE_y = Baseline emissions in year *y* (tCO_2/yr).
EG_y = Electricity supplied by the project activity to the grid (MWh).
$EG_{baseline}$ = Baseline electricity supplied to the grid in the case of modified or retrofit facilities (MWh). For new power plants this value is taken as zero.
$EF_{grid,CM,y}$ = Combined margin CO2 emission factor for grid connected power generation in year *y* calculated using the latest version of the "Tool to calculate the emission factor for an electricity system (ver 07.0)".
The project activity is the installation of a new grid-connected renewable power plant so, $EG_{baseline} = 0$

Then:

$ER_y = BE_y = EG_y * EF_{grid,CM,y}$ = 35,500 MWh/year * 0.5774tCO2/MWh = 20,497 tCO2/year

Baseline scenario is identified and described in B.6.1. Emission reductions due to project activity will be calculated according to "Tool to calculate the emission factor for an electricity system" (Tool) version 7.0. as indicated in AMS- I.D.: Grid connected renewable electricity generation --- Version 18.0.

A brief explanation of this methodology is given in Tool as (page 7):

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.6.4. Summary of ex ante estimates of emission reductions

Year	Baseline emissions (t CO_2e)	Project emissions (t CO_2e)	Leakage (t CO_2e)	Emission reductions (t CO_2e)
2016 (01.10.2016-31.12.2016)	5,166	0	0	5,166
2017	20,497	0	0	20,497
2018	20,497	0	0	20,497
2019	20,497	0	0	20,497
2020	20,497	0	0	20,497
2021	20,497	0	0	20,497
2022	20,497	0	0	20,497
2023	20,497	0	0	20,497
2024	20,497	0	0	20,497
2025	20,497	0	0	20,497

2026 (01.01.2026-30.09.2026)	15,331	0	0	15,331
Total	**204,970**	0	0	**204,970**
Total number of crediting years	10 years			
Annual average over the crediting period	20,497	0	0	20,497

B.7. Monitoring plan

B.7.1. Data and parameters to be monitored

Data / Parameter Table 1.

Data / Parameter:	**EG,y**
Methodology reference	AMS-I.D
Data unit	MWh
Description	Net Electricity generated and delivered to the grid by the power plant in year y
Measured/calculated /default	Measured
Data source	Electricity meter readings on-site
Value(s) of monitored parameter	Estimated annual generation forming the basis for emission reduction calculation is 35,500 MWh as indicated in energy yield assessment report.
Measurement/ Monitoring equipment	Type of meter: Elster A1500 (main meter) Elster A1500 (back-up meter) Location of meter: On-site Accuracy of meter: 0.5S Serial number of meter: 00503836 (main meter) 00503838 (back-up meter) Calibration frequency: 10 years Date of Calibration/ validity: 08/09/2026 Reference No. of Calibration Certificate: Çamlıbel Elektrik Dağıtım A.Ş. Genel Müdürlüğü İlk Endeks Tespit Protokolü Calibration Status: Calibrated
Measuring/reading/ recording frequency	Continuous measurement and at least monthly recording

Calculation method (if applicable)	EGy calculation is used by EPIAS (which is one of the TEIAS association) records and which are more conservative than the site records. Generation is recorded via remote reading system. The values are cross-checked with the on-site meter records. The quantity of electricity supplied by the project plant/unit to the grid(ISVM) and the quantity of electricity delivered to the project plant/unit from the grid (UECM) are measured. Net generation is calculated via subtracting energy delivered by the project activity to the grid for internal consumption from electricity fed to the grid.
QA/QC procedures	According to the Article 2 of the Communiqué of Meters in Electricity Sector[24]: '*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. Also according to Article 11 of this Communiqué, meters shall be in class of 0.5s, which means error interval for measuring is in +-0.5% range which is well acceptable according to rules. Paragraph b) of the Article 9 of the 'Regulation of Metering and Testing of Metering Systems'[25] (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 according to the regulation. However, meters on the plant will be calibrated by the supplier firm on an annual basis. Also according to Article 67 (page 20) of this regulation, the calibration shall be done in calibration stations which have been tested and approved by Ministry of Trade and Industry. Article 10 d) of Communiqué requires the meters shall be three phase four wire and Article 64 of Regulation clearly states how calibration shall be performed for this kind of meters. 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.
Purpose of data	Calculation of Baseline Emission
Additional comments	-

[24] See, www.**epdk**.org.tr/TR/Dokuman/3156

[25] See, http://www.mevzuat.gov.tr/Metin.Aspx?MevzuatKod=7.5.6381&MevzuatIliski=0&sourceXmlSearch=

Data / Parameter Table 2.

Data / Parameter:	**CO2 Emissions**
Methodology reference	GCC Environment-and-Social-Safeguards-Standard-v2
Data unit	tCO2e
Description	Reduction of CO2 emissions due to implementation of project activity that would otherwise be emitted by thermal power plants
Measured/calculated /default	Calculated
Data source	Electricity generated by Karacayir WPP and OM&BM calculations
Value(s) of monitored parameter	20,497 tCO2e annually
Measurement/ Monitoring equipment	<table><tr><td colspan="2"></td></tr><tr><td>Type of meter</td><td>Elster A1500 (main meter) Elster A1500 (back-up meter)</td></tr><tr><td>Location of meter</td><td>On-site</td></tr><tr><td>Accuracy of meter</td><td>0.5S</td></tr><tr><td>Serial number of meter</td><td>00503836 (main meter) 00503838 (back-up meter)</td></tr><tr><td>Calibration frequency</td><td>10 years</td></tr><tr><td>Date of Calibration/ validity</td><td>08/09/2026</td></tr><tr><td>Reference No. of Calibration Certificate</td><td>Çamlıbel Elektrik Dağıtım A.Ş. Genel Müdürlüğü İlk Endeks Tespit Protokolü</td></tr><tr><td>Calibration Status</td><td>Calibrated</td></tr></table>
Measuring/reading/ recording frequency	Continuous measurement and at least monthly recording
Calculation method (if applicable)	The net electricity supplied by the Project will be continuously measured and recorded by EPIAS; and will be kept by the Project Owner
QA/QC procedures	-
Purpose of data	To assess to contribution SDG 13 Climate Change: The project produces clean renewable energy by diminishing CO2 emissions. Therefore, it contributes SDG Target 13.3 “Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.
Additional comments	-

Data / Parameter Table 3.

Data / Parameter:	**PM2.5 and PM10**
Methodology reference	AMS-I.D
Data unit	$\mu g/m^3$
Description	Avoided PM2.5 and PM10

<table>
<tr><td>Measured/calculated /default</td><td>Calculated</td></tr>
<tr><td>Data source</td><td>Air Quality Report, 2016 and 2017:
https://www.cmo.org.tr/resimler/ekler/a941df595b4c831_ek.pdf?tipi=67&turu=H...0

https://www.cmo.org.tr/resimler/ekler/2145efce8f89f52_ek.pdf
&
TEİAŞ website</td></tr>
<tr><td>Value(s) of monitored parameter</td><td>PM2.5 and PM10 emissions arise from thermal electricity generation (except natural gas power plants). Karacayir WPP, as a renewable energy power plant, will contribute to reductions of both PM2.5 and PM10 by replacing fossil fuels.
In Turkey, monitoring of PM2.5 is not conducted in all cities. It is only monitored in 24 different cities of Turkey[26]. Therefore, the most recent average data for Turkey's PM 2.5 value was taken (27 µg/m3).

Turkey's province's average PM10 value for 2016 has been around 58 µg/m^3 which is the average data recorded in different cities' stations in Turkey.

Corresponding PM2.5 reduction for Karacayir WPP was calculated as 0.01 µg/m^3 while the corresponding PM10 reduction was found as 0.01 µg/m^3 for baseline, annually.</td></tr>
<tr><td>Measurement/ Monitoring equipment</td><td>
<table>
<tr><td colspan="2"></td></tr>
<tr><td>Type of meter</td><td>Elster A1500 (main meter)
Elster A1500 (back-up meter)</td></tr>
<tr><td>Location of meter</td><td>On-site</td></tr>
<tr><td>Accuracy of meter</td><td>0.5S</td></tr>
<tr><td>Serial number of meter</td><td>00503836 (main meter)
00503838 (back-up meter)</td></tr>
<tr><td>Calibration frequency</td><td>10 years</td></tr>
<tr><td>Date of Calibration/ validity</td><td>08/09/2026</td></tr>
<tr><td>Reference No. of Calibration Certificate</td><td>Çamlıbel Elektrik Dağıtım A.Ş. Genel Müdürlüğü
İlk Endeks Tespit Protokolü</td></tr>
<tr><td>Calibration Status</td><td>Calibrated</td></tr>
</table>
</td></tr>
<tr><td>Measuring/reading/ recording frequency</td><td>Once in each monitoring period</td></tr>
<tr><td>Calculation method (if applicable)</td><td>To calculated the PM emission reduction contribution of the Project in Turkey: "PM 2.5 emitted for each GWH generation of thermal power plants" and "PM 10 emitted for each GWH generation of thermal power plants" were calculated by using data which were gathered from</td></tr>
</table>

[26] https://www.cmo.org.tr/resimler/ekler/2145efce8f89f52_ek.pdf page 22

	Periodical Reports of Chamber of Environmental Engineers of Turkey and TEIAS. Those are the most up-to-date documents that recent data can be obtained. Detailed calculations can be found in the "PM" sheet of ER Calculation spreadsheet.
QA/QC procedures	-
Purpose of data	To assess the contribution to SDG 11 Sustainable Cities and Communities/ SDG Target 11.6 "By 2030, reduce the adverse per capita environmental impacts of cities, including by paying special attention to air quality and municipal and other waste management "
Additional comments	-

Data / Parameter Table 4.

Data / Parameter:	**Water Quality and Quantity**
Methodology reference	AMS-I.D
Data unit	m^3
Description	Cooling water discharge prevented. The project activities replaces 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.
Measured/calculated /default	Calculated
Data source	Monthly meter readings, TEIAS's statistics
Value(s) of monitored parameter	For baseline, avoidance of cooling wastewater was calculated as 827.6 (x1000 m^3/year)
Measurement/ Monitoring equipment	

Type of meter	Elster A1500 (main meter) Elster A1500 (back-up meter)
Location of meter	On-site
Accuracy of meter	0.5S
Serial number of meter	00503836 (main meter) 00503838 (back-up meter)
Calibration frequency	10 years
Date of Calibration/ validity	08/09/2026
Reference No. of Calibration Certificate	Çamlıbel Elektrik Dağıtım A.Ş. Genel Müdürlüğü İlk Endeks Tespit Protokolü
Calibration Status	Calibrated

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.

Measuring/reading/ recording frequency	Once in each monitoring period
Calculation method (if applicable)	The net electricity generation of the Project will be multiplied with the cooling water discharge intensity. Detailed calculations can be found in the “Wastewater” sheet of ER Calculation spreadsheet.
QA/QC procedures	-
Purpose of data	Avoidance wastewater discharge to the environment
Additional comments	-

B.7.2. Monitoring-program of risk management actions

There is no parameter evaluated as “Harmful” in Section E.

B.7.3. Sampling plan

N/A

B.7.4. Other elements of the 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 **Mursal Enerji Üretimi Sanayi ve Ticaret Anonim Şirketi**’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, **Mursal Enerji Üretimi Sanayi ve Ticaret Anonim Şirketi** has entered into a comprehensive Operation and Maintenance agreement with the manufactures of the turbines. The contractor, GAMESA, 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 GAMESA.

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. A main and check meter would be installed for every feeder and also at the sub-station of the state utility. On a monthly basis, a joint meter reading will be carried out in the presence of the national authority officials and representatives of the project promoters.

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. A calculation would be carried out to calculate electricity exported from the project activity.

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 Karacayir 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 Karacayir 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 is 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
Main meters and check meters are installed for monitoring the energy exported. The main and check meters shall be calibrated on a ten year basis with reference to a portable standard meter. 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 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 Karacayir 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 ACCs for the project activity, whichever occurs late.

Section C. Start date, crediting period type and duration

C.1. Start date of the Project Activity

Start date of project activity is 01/10/2016, when the project started generating electricity and supplying it to the national grid.

C.2. Expected operational lifetime of the Project Activity

The operational lifetime of the project is 25 years as per "Tool to determine the remaining lifetime of equipment (v.1.0)".

C.3. Crediting period of the Project Activity

C.3.1. Fixed crediting period

The crediting period is 10 years.

C.3.2. Start date of the crediting period

Start date of crediting period is 01/10/2016, after the project start generating electricity and supply it to the national grid.

C.3.3. Duration of the crediting period

The crediting period is between 01/10/2016 and 30/09/2026.

Section D. Environmental impacts

D.1. Analysis of environmental impacts

Please see Section E.

D.2. Environmental impact assessment

The project complies with the relevant regulations and laws in Turkey. In line with Turkish environmental regulations, an “Environmental Impact Assessment (EIA) not required letter” was approved by the Ministry of Environment and Urbanization in 04/05/2009.

Section E. Environmental and social safeguards

E.1. Environmental safeguards

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Impact of Project Activity on		**Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards**									**Project Owner's Conclusion**	
		Description of Impact *(both positive and negative)*	**Legal requirement / Limit**	**Do-No-Harm Risk Assessment**			**Risk Mitigation Action Plans**		**Do-No-Harm Residual Risk Assessment**		**Self-Declaration**	
				Not Applicable *(No actions required)*	**Harmless** *(No actions required)*	**Harmful** *(Actions required)*	**Operational Controls**	**Program of Risk Management Actions**	**Re-evaluate Risks**	**Monitoring**	**Explanation of Conclusion**	**The Project Activity will not cause any harm**
Environmental impacts on the identified categories[27] indicated below.	*Indicators for environmental impacts*	*Describe anticipated environmental impacts, both positive and negative from all sources (stationary and mobile), that may result from the Project Activity, within and outside the project boundary, over which the Project Owner(s) has control, and beyond what would reasonably be expected to occur in the absence of the Project Activity.*	*Describe the applicable national regulatory requirements /legal limits related to the identified risks of environmental impacts.*	*If no environmental impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as **Not Applicable** (No actions required)*	*If environmental impacts are anticipated, but are expected to be in compliance with applicable national regulatory requirements/ below the legal limits, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as **Harmless** (No actions required)*	*If environmental impacts are anticipated that will not be in compliance with the applicable national regulatory requirements or are likely to exceed legal limits, then the Project Activity is likely to cause harm (may be un-safe) and shall be indicated as **Harmful** (Actions required).*	*Describe the operational controls and best practices, focusing on how to implement and operate the Project Activity, to reduce the risk of impacts that have been identified as **Harmful**.*	*Describe the Program of Risk Management Actions (refer to Table 3), focusing on additional actions (e.g., installation of pollution control equipment) that will be adopted to reduce the risk of impacts that have been identified as **Harmful**.*	*Re-evaluate risks after Risk Mitigation Action Plans have been developed (refer to previous two columns) for impacts that have been identified as Harmful. Indicate whether the risks have been eliminated or reduced and, where appropriate, indicate them as **Harmless** (No actions required)*	*Describe the monitoring approach and the parameters to be monitored for each impact that has been identified as Harmful and described in the PSF (refer to Table 3).*	*Describe how the Project Owner has concluded that the Project Activity is likely to achieve the identified Risk Mitigation Action Plan targets for managing risks to levels that are unlikely to cause any harm.*	*Confirm that the Project Activity risks of negative environmental impacts are expected to be managed to levels that are unlikely to cause any harm (Mark +1 for **Yes** or and -1 for **No**)*
Environmental Safeguards												
	SO_x emissions	N/A		N/A	-	-	N/A	N/A	N/A	N/A	N/A	

[27] sourced from the CDM SD Tool and the sample reports are available (https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx)

Environment *- Air*			Limit:60 kg/hr[25]									
	NO_x emissions	N/A	20 kg /hr[28]	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	CO_2 emissions	The project reduces CO2 emissions since it reduces the amount of fossil fuel used. In case of “no project”,	N/A	N/A	-	-	N/A	N/A	N/A	The electricity generation will be monitored	In the baseline scenario (grid) some of the fossil fuel power plants may have emitted CO2 emissions, which has been calculated by the combined margin emission factor. Therefore emission reductions are expected to be reduced which will be regularly monitored and verified ex - post and	+1

											therefore is eligible to be scored.	
	CO emissions	N/A	50 kg/hr[28]	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Suspended particulate matter (SPM) emissions	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Fly ash emissions	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Non-Methane Volatile Organic Compounds (NMVOCs)	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Odor emissions	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Noise Pollution	Noise values could be generated from Karacayir WPP, fall below the limit values specified in the "Evaluation of Environmental Noise and Management Regulation". The nearest settlement is about 2 km from the closest turbine which is located in the northwest of the plant and the noise could be transmitted to Hidirnali Village were calculated 0 dbA.[28]	Regulation on the Ambient Noise Evaluation and Control has the limit of 70 Dba.	-	Harmless	-	N/A	N/A	N/A	During the future emission reduction verification procedures' site visits within this crediting period, interviews with local people will be considered.	Due to the fact that the distance between nearest settlement and nearest turbine to that settlement is long and transmitted noise is quite below than the regulated limit, it is expected that noise will be significantly low from the project activity.	+1

[28] Project introduction document (page 26)

Environment *- Land*	*Solid waste Pollution from Plastics*	There may be plastic wastes generated at the end of domestic use at the project site. Those wastes are properly stored and disposed.	According to the Solid Waste Regulation[29], domestic solid wastes shall be collected in closed trashes and disposed by the municipality.	N/A	-	-	N/A	N/A	N/A	N/A	No significant plastic waste is expected from the project activity during operational phase.	N/A
	Solid waste Pollution from Hazardous wastes	There may be oil wastes generated at the project site. Waste oil is disposed via licenced recycling firms.[30]	According to the "Waste Oil Control Regulation", waste oil shall be taken by the licenced recycling firms.[31]	-	Harmless	-	N/A	N/A	N/A	The records for the transfer of the wastes will prove the disposal of hazardous wastes.	As hazardous wastes shall be transported by licensed transporters to the licensed processing and disposal facilities, the records for the transfer of the wastes will prove the disposal.	N/A
	Solid waste Pollution from Bio-medical wastes	There is no medical waste generated at the project site.	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Solid waste Pollution from E-wastes	There is no e-waste generated at the project site.	N/A	-	-	-	N/A	N/A	N/A	N/A	N/A	
	Solid waste Pollution from Batteries	There is no battery waste generated at the project site.	N/A	-	-	-	N/A	N/A	N/A	N/A	N/A	

[29] https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=14012&MevzuatTur=7&MevzuatTertip=5

[30] Project introduction document(page 26,27

[31] https://www.resmigazete.gov.tr/eskiler/2019/12/20191221-1.htm

	Solid waste Pollution from end of life products/ equipment	N/A	N/A	-	-	-	N/A	N/A	N/A	N/A	N/A	
	Soil Pollution from Chemicals (including Pesticides, heavy metals, lead, mercury)	There is no soil pollution caused by chemicals at the project site.	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Soil erosion	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
Environment *- Water*	*Reliability/ accessibility of water supply*	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Water Consumption from ground and other sources	There is no water consumption from ground for the project use.	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Generation of wastewater	Project generates wastewater caused by the domestic use but it is disposed	According to the Water Pollution Control Regulation[32] ,wastewater produced by workers during operation was collected in a septic tank and later when they are filled, they were periodically transferred to wastewater treatment plant.	-	Harmless	-	N/A	N/A	N/A	Wastewater Transfer records will be used as a proof the disposal of wastewater.	When the septic tanks are full, collected wastewaters are vacuumed by authorized entities. Moreover, since the number of employees in the plant is few, there is not much wastewater generation at the plant.	+1

[32] https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=7221&MevzuatTur=7&MevzuatTertip=5

	Wastewater discharge without/with insufficient treatment	The project does not cause any ww discharge without treatment.	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Pollution of Surface, Ground and/or Bodies of water	The project does not led water pollution of surface and groundwater and water bodies since it is a wind power plant.	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
Environment – *Natural Resources*	*Conserving mineral resources*	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Protecting/ enhancing plant life	There are no nature protection areas within the borders of Sivas Province.	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Protecting/ enhancing species diversity	There may be harmful effects for birds due to turbine operation.	IUCN criteria	N/A	Harmless	-	N/A	N/A	N/A	Site personnel will monitor bird and bats carcasses and any negative impact will be reported.	In the ornithology report prepared for the project, it was determined that the project area is not on the main migration routes of migratory birds. As a result, the location of the site is seen as a suitable project in terms of ecosystem.[33]	+1
	Protecting/ enhancing forests	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	

[33] Ornithology Report of the Project (page 105)

	Protecting/ enhancing other depletable natural resources	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Conserving energy	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Replacing fossil fuels with renewable sources of energy	The project activity replaces fossil fuels with wind energy as it's based on the baseline.	No legal limit	N/A	-	-	N/A	N/A	N/A	The electricity generation will be monitored.	The generated electricity by the project activity will be continuously measured and the related CO2 emission reduction will be calculated according to the applied methodology.	+1
	Replacing ODS with non-ODS refrigerants	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Others	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Add more rows if required	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	

Note: If the score is: (a) zero or greater, the overall impact is neutral or positive and there is no net harm; and (b) less than zero, the overall impact is negative and there is net harm to Environment. Score is obtained after adding the individual scores in each of the rows in the last column of the above table.

Net Score:	**+5**
Project Owner's Conclusion in PSF:	The Project Owner confirms that the Project Activity will not cause any net harm to the environment.

E.2. Social Safeguards

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Impact of Project Activity on		**Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards**									**Project Owner's Conclusion**	
		Description of Impact (*both positive and negative*)	**Legal requirement /Limit**	**Do-No-Harm Risk Assessment**			**Risk Mitigation Action Plans**		**Do-No-Harm Residual Risk Assessment**		**Self-Declaration**	
				Not Applicable *(No actions required)*	**Harmless** *(No actions required)*	**Harmful** *(Actions required)*	**Operational Controls**	**Program of Risk Management Actions**	**Re-evaluate Risks**	**Monitoring**	**Explanation of Conclusion**	**The Project Activity will not cause any harm**
Social impacts on the identified categories[34] indicated below.	*Indicators for social impacts*	*Describe the impacts on society and stakeholders, both positive and negative, that may result from constructing and operating of the Project Activity.*	*Describe the applicable national regulatory requirements / legal limits related to the identified risks of social impacts.*	*If no social impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as* ***Not Applicable*** *(No actions required)*	*If social impacts are anticipated, but are expected to be in compliance with applicable national regulatory requirements/ legal limits, then it the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as* ***Harmless*** *(No actions required)*	*If social impacts are anticipated that will not be in compliance with the applicable national regulatory requirements/ legal limits, then the Project Activity is likely to cause harm (may be unsafe) and shall be indicated as* ***Harmful*** *(Actions required).*	*Describe the operational controls and best practices, focusing on how to implement and operate the Project Activity, to reduce the risk of impacts that have been identified as* ***Harmful****.*	*Describe the Program of Risk Management Actions (refer to Table 3), focusing on additional actions (e.g., construction of crèche for workers) that will be adopted to reduce the risk of impacts that have been identified as* ***Harmful****.*	*Re-evaluate risks after Risk Mitigation Actions plans have been developed (refer to previous two columns) for impacts that have been identified as Harmful. Indicate whether the risks have been eliminated or reduced and, where appropriate, indicate them as* ***Harmless*** *(No actions required)*	*Describe the monitoring approach and the parameters to be monitored for each impact that has been identified as Harmful and to be described in the PSF (refer to Table 3).*	*Describe how the Project Owner has concluded that the Project Activity is likely to achieve the identified Risk Mitigation Action Plan targets for managing risks to levels that are unlikely to cause any harm.*	*Confirm that the Project Activity risks of negative social impacts are expected to be managed to levels that are unlikely to cause any harm (Mark +1 for* ***Yes*** *or and -1 for* ***No****)*
Social Safeguards												
Social - *Jobs*	*Long-term jobs (> 1 year) created/ lost*	*The project activity has created jobnopportunities.*	Employments have been realized in accordance with the Labor Law.[35]	N/A	-	-	N/A	N/A	N/A	Records of People employed (Social Security Records) by the project will be maintained.	Thanks to project activity, there is positive impact on income generation of local people.	+1

[34] sourced from the CDM SD Tool and the sample reports are available (https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx)

[35] https://www.mevzuat.gov.tr/MevzuatMetin/1.5.4857.pdf

											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.	
	New short-term jobs (< 1 year) created/ lost	The project activity provided short term job opportunities during the construction phase of the project.	Employments have been realized in accordance with the Labor Law.[36]	N/A	-	-	N/A	N/A	N/A	Construction of the project was implemented by qualified construction company contracted by project owner. Project owner has no access to the employment records of the short - term employment. Hence, this parameter will not be scored.	N/A	N/A

[36] https://www.mevzuat.gov.tr/MevzuatMetin/1.5.4857.pdf

	Sources of income generation increased / reduced	Income generation has been provided with the project activity.	Employments have been realized in accordance with the Labor Law and Social Security Regulations	N/A	-	-	N/A	N/A	N/A	Site personnel will be interviewed on job opportunities. Records of People employed (Social Security Records) by the project will be maintained.	According to the labor law of the Republic of Turkey[37], employers are obliged to insure their employees for the duration of their employment. Employers' insurance records are proof that there are income generation by the employer which is project owner.	+1
Social - *Health & Safety*	*Disease prevention*	N/A.	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Reducing / increasing accidents	Occupational accidents are probable within the scope of the projects. Job training are given to the employees.	Employees are trained in line the HSE Law.[38]		Harmless	-	N/A	N/A	N/A	Participant lists for HSE trainings will be used as proof of the attended trainings.	According to the occupational health and safety law[39], the employer is obliged to provide this training to its employees. Training records can also be considered as proof of this.there are income generation	+1

[37] https://www.mevzuat.gov.tr/MevzuatMetin/1.5.4857.pdf
[38] https://www.mevzuat.gov.tr/MevzuatMetin/1.5.6331.pdf
[39] https://www.mevzuat.gov.tr/MevzuatMetin/1.5.6331.pdf

											by the employer which is project owner.	
	Reducing / increasing crime	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Reducing / increasing food wastage	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Reducing / increasing indoor air pollution	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Efficiency of health services	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Sanitation and waste management	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
Social - *Education*	*Job related training imparted or not*	The project owner provides job related training for the special positions.	-	N/A	-	-	The employee may be given job-related training in order to increase the capability of them, if required.	N/A	N/A	According to the "REGULATION ON PROCEDURES AND PRINCIPLES OF EMPLOYEE'S OCCUPATIONAL HEALTH AND SAFETY TRAINING" which was come into force on 15th May, 2013, all of the legal employees that are working within the border of	According to the occupational health and safety law[40], the employer is obliged to provide this training to its employees. Training records can also be considered as proof of that there are income generation by the employer which is project owner.	+1

[40] https://www.mevzuat.gov.tr/MevzuatMetin/1.5.6331.pdf

										Republic of Turkey should be provided health and safety tranings by their employers. Employers are obliged to provide this. (https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=18371&MevzuatTur=7&MevzuatTertip=5)		
	Educational services improved or not	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Project-related knowledge disseminatio n effective or not	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
Social - *Welfare*	*Improving/ deteriorating working conditions*	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Community and rural welfare	Employment opportunities and thus income generation have been created for local people.	Labor Law[41]	N/A	-	-	N/A	N/A	N/A	Site personnel will be interviewed on job opportunitie s.	The fact that the employees working in the project area are generally local people is the indicator of this situation. Their employment records may be seen as a	+1

[41] https://www.mevzuat.gov.tr/MevzuatMetin/1.5.4857.pdf

											proof of this assessment	
	Poverty alleviation (more people above poverty level)	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Improving / deteriorating wealth distribution/ generation of income and assets	Income generation have been created for local people.	Labor Law[42]	N/A	-	-	N/A	N/A	N/A	Site personnel will be interviewed on job opportunities.	The fact that the employees working in the project area are generally local people is the indicator of this situation. Their employment records may be seen as a proof of this assessment.	+1
	Increased or / deteriorating municipal revenues	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Women's empowerment	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Reduced / increased traffic congestion	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
Note: If the score is: (a) zero or greater, the overall impact is neutral or positive and there is no net harm; and (b) less than zero, the overall impact is negative and there is net harm to society. Score is obtained after adding the individual scores in each of the rows in the last column of the above table.												
Net Score:	**+6**											

[42] https://www.mevzuat.gov.tr/MevzuatMetin/1.5.4857.pdf

Project Owner's Conclusion in PSF:	The Project Owner confirms that the Project Activity will not cause any net harm to society.

Section F. United Nations Sustainable Development Goals (SDG)

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UN-level SDGs	UN-level Target	Declared Country-level SDG	Defining Project-level SDGs					Project Owner(s)'s Conclusion	
			Project-level SDGs	**Project-level Targets/ Actions**	**Project-level Indicators**	**Contribution of Project-level Actions to SDG Targets**	**Monitoring**	**Explanation of Conclusion**	**Are Goal/ Targets Likely to be Achieved?**
Describe UN SDG targets and indicators *See: https://unstats.un.org/sdgs/indicators/indicators-list/*	*Describe the UN-level target(s) and correspo-nding indicator no(s)*	*Has the host country declared the SDG to be a national priority? Indicate Yes or No*	*Define project-level SDGs by suitably modifying and customizing UN/ Country-level SDGs to the project scope.* ***For guidance see:*** *Integrating the SDGs into Corporate Reporting- A Practical Guide: https://www.unglobalcompact.org/docs/publications/Practical_Guide_SDG_Reporting.pdf* *Case-study from Coca-Cola and other organizations to develop organization-wide SDGs (page 114):* https://pub.iges.or.jp/pub/realising-transformative-potential-sdgs	*Define project-level targets/actions, by suitably modifying and customizing UN/Country-level targets to the project scope. Define the target date by which the Project Activity is expected to achieve the project-level SDG target(s). Refer to the previous column for guidance*	*Define project-level indicators by suitably modifying and customizing UN/Country-level indicators to the project scope or creating a new indicator(s). Refer to the previous column for guidance*	*Describe and justify how actions taken under the Project Activity are likely to result in a direct positive effect that contributes to achieving the defined project-level SDG targets and is additional to what would have occurred in the absence of the Project Activity*	*Describe the monitoring approach and the monitoring parameters to be applied for each project-level SDG target and Indicator*	*Describe how the Project Owner has concluded that the project is likely to achieve the identified Project level SDGs target(s).*	*Describe whether the project-level SDG target(s) is likely to be achieved by the target date (Yes or No)*
Goal 1: End poverty in all its forms everywhere	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Goal 3. Ensure healthy lives and promote well-being for all at all ages	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Goal 5. Achieve gender equality and empower all women and girls	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Goal 6. Ensure availability and sustainable management of water and sanitation for all	SDG 6 Clean Water and Sanitation: The project contributes SDG Target 6.3 "By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and	Yes	Since it is renewable energy project, project activity does not consume any water for cooling purposes like fossil fuel energy plants. Therefore, this project provides a significant water use avoidance ant thus protects the environment.	Wastewater avoidance is 827.6 (x1000 m3/year) for the baseline annually.	6.3.1 Proportion of domestic and industrial wastewater flows safely treated	Since it is renewable energy project, project activity does not consume any water for cooling purposes like fossil fuel energy plants, therefore it contributes the water consumption avoidance.	Check annual avoided Wastewater.	Project owner operates the plant since 2016 and complies with targeted SDGs so far	Yes

	substantially increasing recycling and safe reuse globally."								
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	SDG Target 7.2 "By 2030, increase substantially the share of renewable energy in the global energy mix" by the utilization of biomass as a renewable energy source." Indicator 7.2.1 Renewable energy share in the total final energy consumption	Yes	Increase the share of renewables in the total installed power capacity connected to the national grid.	Provide 35.5 GWh clean energy annually.	Enhance the share of installed electricity generation capacity from renewable energy sources.	The project increases the renewable energy share in Turkey's energy production mix. It provides 35.5 GWh annual clean energy to the grid.	Calculate the share of installed capacity from renewable energy.	The project fully commissioned in 2016. Project implementation goes on without any problem.	Yes
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all									
Goal 9. Build resilient infrastructure, promote inclusive									

and sustainable industrialization and foster innovation									
Goal 10. Reduce inequality within and among countries									
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable	SDG Target 11.6 "By 2030, reduce the adverse per capita environmental impacts of cities, including by paying special attention to air quality and municipal and other waste management." Indicator 11.6.2 Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)	Yes	Decrease the amount of PM2.5 and PM10 emissions in the cities	Corresponding PM2.5 reduction for Karacayir WPP was calculated as 0.01 µg/m3 while the corresponding PM10 reduction was found as 0.01 µg/m3 for baseline, annually.	11.6.2 Annual mean levels of fine particular matter (e.g. PM2.5 and PM10) in cities (population weighted)	As known, fossil fuel emissions are secondary sources of PM2.5 and PM10 in the cities. Since the project reduces the use of fossil fuels, PM2.5 and PM10 formation will be reduced accordingly. Hence, the project helps to improve air quality in cities.	Check annual avoided PM	Project owner operates the plant since 2016 and complies with targeted SDGs so far.	Yes
Goal 12. Ensure sustainable consumption and production patterns									

Goal 13. Take urgent action to combat climate change and its impacts	SDG Target 13.3 "Improve educatio n, awarenes s-raising and human and institutio nal capacity on climate change mitigatio n, adaptatio n, impact reduction and early warning". Indicator 13.3.2 Number of countries that have communi cated the strengthe ning of institutio nal, systemic and individual capacity-building to impleme nt adaptatio n, mitigatio n and	Yes	Eliminates 20,497 tco2 annually	Commission 35.5 GWh renewable energy plant.	Reduce greenhouse gas emissions by 20,497 tonnes annually.	Since the project uses wind energy, there is no GHG emissions related to the project activity. It eliminates 20,497 tco2 annually.	Calculate avoided GHG emissions every year.	Project owner operates the plant since 2016 and complies with targeted SDGs so far.	Yes
Goal 14. Conserve and sustainably use the oceans, seas and									

marine resources for sustainable development									
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss									
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels									
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development									

SUMMARY	**Targeted**	**Likely to be Achieved**
Total Number of SDGs	**4**	**4**
Certification label (Bronze, Silver, Gold, Platinum, or Diamond) for the ACCs as defined in the PSF	**Gold**	**Gold**

Section G. Local stakeholder consultation

G.1. Modalities for local stakeholder consultation

In Turkey, planned project activities should be evaluated according to the Environmental Impact Assessment Regulations which was brought into force by the Ministry of Environment and Urbanization. According the to the list which was published by this ministry, there are threshold limit values for all kind of projects in the scope of their EIA necessity[43].In other words, the projects are considered under "EIA required" or "EIA not required" scopes based on their type, capacity, etc. For this reason, since this project's installed capacity is less than the threshold limit which was specified for wind farms in the list, this project has been classified as "EIA not required" type of project.
"EIA not required" document for this project was provided to GCC Verifier.

Consequently, there was no local stakeholder consultation meeting conducted since the project does not have EIA requirement thereby the regulation does not require such a meeting for this type of projects. Moreover, the projects, which does not require EIA study, are expected to be compliant with the environmental and social precautions.

For GCC submission, project standard states that there should have been a LSC process. However, a face-to-face meeting is not possible by now due to COVID-19 precautions held all over the country. Therefore, the consultation was done by using information notes and evaluation forms sent to the stakeholders via e-mail. The institutions listed below have been informed via e-mail on 05/10/2021. However, any positive/negative comment could not be received from the institutions. Also, evaluation forms were sent to the site for local stakeholders. The dates of the evaluation are available on the form. Responses obtained from the stakeholders are given in Appendix 6. The participation of women in the region was also encouraged.

The list of stakeholders that were invited to the distant evaluation is given below:

- Governorate of Sivas province
- Sivas Municipality
- Sivas Directorate of Land Registry
- Sivas Provincial Directorate of Environment and Urbanization
- Sivas Provincial Directorate of Culture and Tourism
- Mukhtar
- Local people

[43] https://webdosya.csb.gov.tr/db/ced/icerikbelge/icerikbelge1847.pdf

G.2. Summary of comments received

10 local people participated to evaluation. 4 of them were women. List of details of the participants (Name&Surname, Gender, Occupation, Contact details) are provided to GCC V.

As it could be seen from the evaluation forms which were given in the Appendix 6, general feedbacks of local people are positive about the projects. Almost in all of the forms, as a summary it was indicated that “there is no any negative impact of these kind of plants” and “it is environmental and climate friendly project”.

On the whole, people that have participated in the evaluation seem to have a positive assessment regarding the solar power plants. A few of the points mentioned the most are;

1. Clean and cheap energy
2. Employment opportunities
3. Environmentally friendly

In this particular evaluation, there was no negative opinion given by the evaluators.

G.3. Consideration of comments received

The comments have been evaluated by the consultant and the project owner and summarized as

There is no negative comment / grievance according to the project implementation so far.

Section H. Approval and authorization

As per the guideline available in this regard, submission of Host Country Attestation (HCA) on Double Counting as and when required by CORSIA. For carbon credits issued during 1st Jan 2016 to 31st Dec 2020, HCA is not required for CORSIA labeled credits. There is currently no mandatory mechanism for this situation for Turkey, which is a host country. However, if there would be a mandatory mechanism for it in the future, the HCA will be provided during the first or subsequent verification, when the issuance of carbon credit is considered beyond 1st Jan 2021.

Appendix 1. Contact information of project owners

Organization name	Maki Elektrik Enerji Operasyonları Yönetimi A.Ş.
Country	Turkey
Address	Gaziosmanpaşa Mah. Nenehatun Cad. No:32/1 Çankaya/Ankara 06680
Telephone	+903124461780
Fax	-
E-mail	emre.diniz@makienerji.com.tr
Website	http://www.makienerji.com.tr/tr
Contact person	Emre Diniz

Organization name	Mursal Enerji Üretim Sanayi ve Ticaret A.Ş.
Country	Turkey
Address	Gaziosmanpaşa Mah. Nenehatun Cad. No:32/2 Çankaya,Ankara /TURKEY/06680
Telephone	-
Fax	-
E-mail	emre.diniz@makienerji.com.tr
Website	-
Contact person	Emre Diniz

Appendix 2. Affirmation regarding public funding

N/A

Appendix 3. Applicability of methodology(ies)

N/A

Appendix 4. Further background information on ex ante calculation of emission reductions

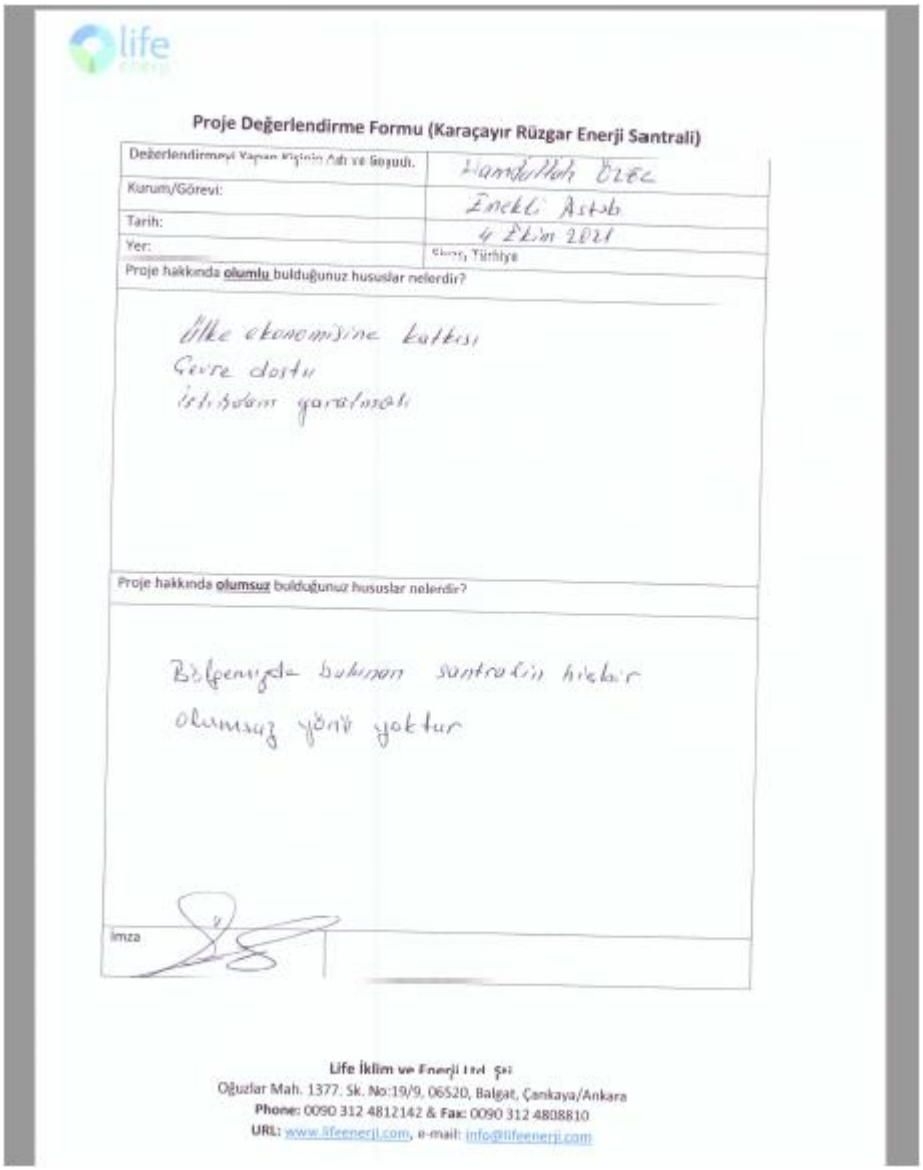
N/A

Appendix 5. Further background information on monitoring plan

N/A

Appendix 6. Summary report of comments received from local stakeholders (Evaluation Form Examples)

Original Versions:



Proje Değerlendirme Formu (Karaçayır Rüzgar Enerji Santrali)

Değerlendirmeyi Yapan Kişinin Adı ve Soyadı:	Handullah Özer
Kurum/Görevi:	Emekli Astsb
Tarih:	4 Ekim 2021
Yer:	Elazığ, Türkiye

Proje hakkında **olumlu** bulduğunuz hususlar nelerdir?

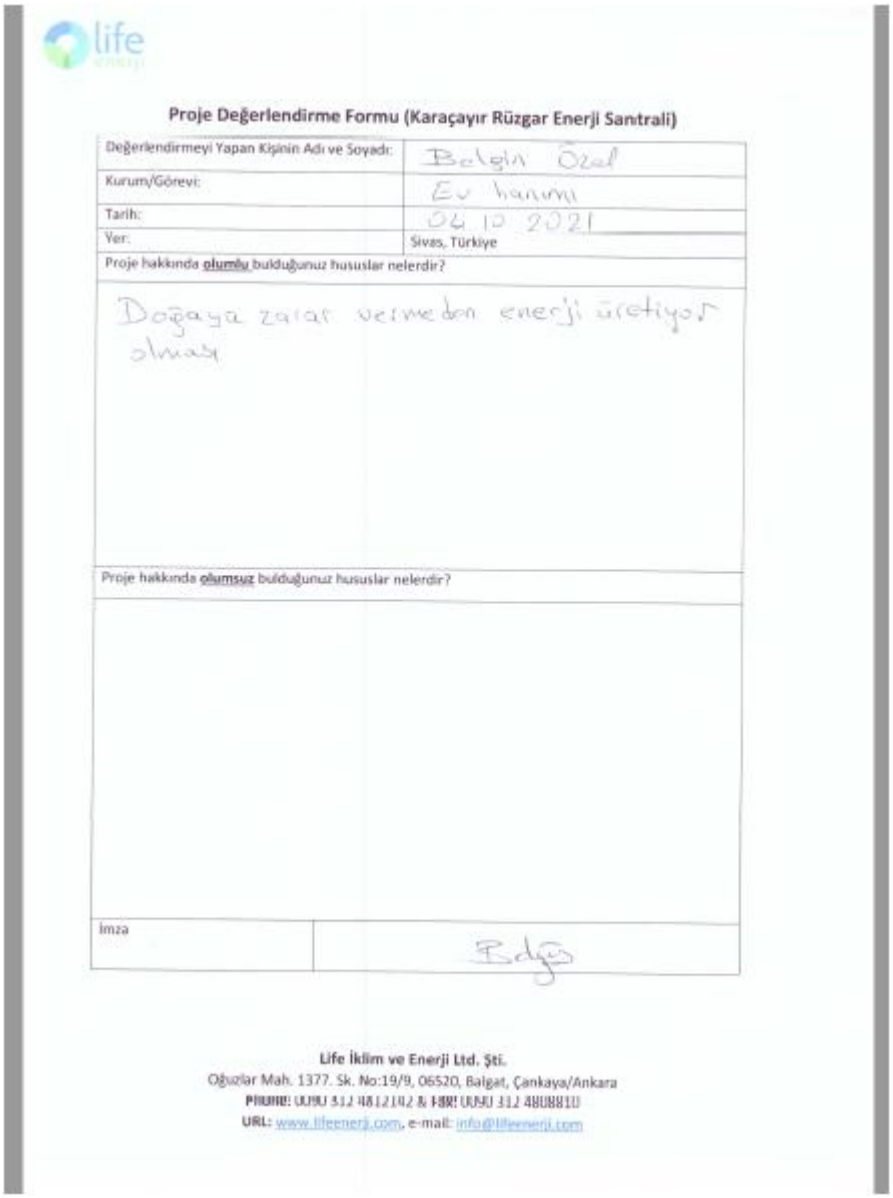
Ülke ekonomisine katkısı
Çevre dostu
İstihdam yaratması

Proje hakkında **olumsuz** bulduğunuz hususlar nelerdir?

Bölgemizde bulunan santralin herhangi
olumsuz yönü yoktur

İmza

Life İklim ve Enerji Ltd. Şti.
Oğuzlar Mah. 1377. Sk. No:19/9, 06520, Balgat, Çankaya/Ankara
Phone: 0090 312 4812142 & **Fax:** 0090 312 4808810
URL: www.lifeenerji.com, e-mail: info@lifeenerji.com



life

Proje Değerlendirme Formu (Karaçayır Rüzgar Enerji Santrali)

Değerlendirmeyi Yapan Kişinin Adı ve Soyadı:	Belgin Özel
Kurum/Görevi:	Ev hanımı
Tarih:	04.10.2021
Yer:	Sivas, Türkiye

Proje hakkında **olumlu** bulduğunuz hususlar nelerdir?

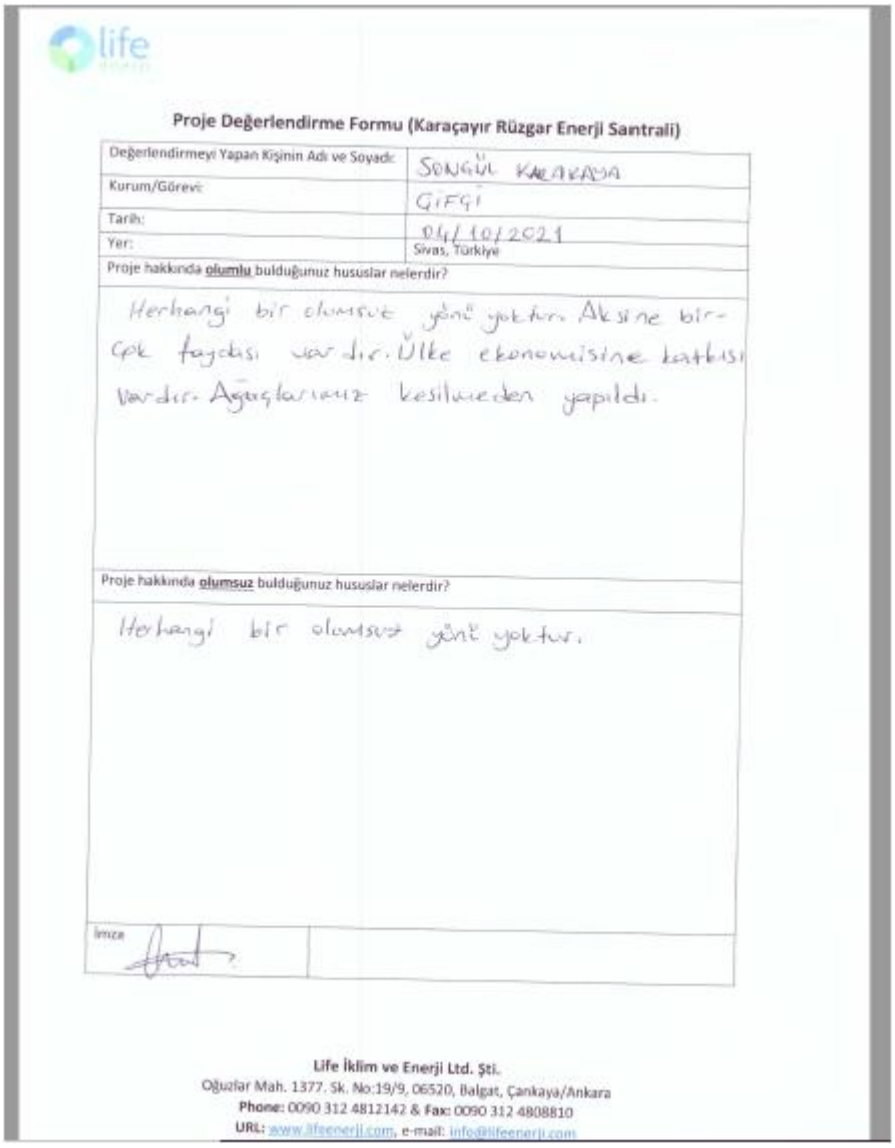
Doğaya zarar vermeden enerji üretiyor olmaları

Proje hakkında **olumsuz** bulduğunuz hususlar nelerdir?

İmza

Belgin

Life İklim ve Enerji Ltd. Şti.
Oğuzlar Mah. 1377. Sk. No:19/9, 06520, Balgat, Çankaya/Ankara
PHONE: [illegible] **&** **FAX:** [illegible]
URL: www.lifeenerji.com, e-mail: info@lifeenerji.com



life

Proje Değerlendirme Formu (Karaçayır Rüzgar Enerji Santrali)

Değerlendirmeyi Yapan Kişinin Adı ve Soyadı:	SONGÜL KARAKAYA
Kurum/Görevi:	GİFGİ
Tarih:	04/10/2021
Yer:	Sivas, Türkiye

Proje hakkında olumlu bulduğunuz hususlar nelerdir?

Herhangi bir olumsuz yönü yoktur. Aksine bir-çok faydası vardır. Ülke ekonomisine katkısı vardır. Ağaçlarınız kesilmeden yapıldı.

Proje hakkında olumsuz bulduğunuz hususlar nelerdir?

Herhangi bir olumsuz yönü yoktur.

İmza

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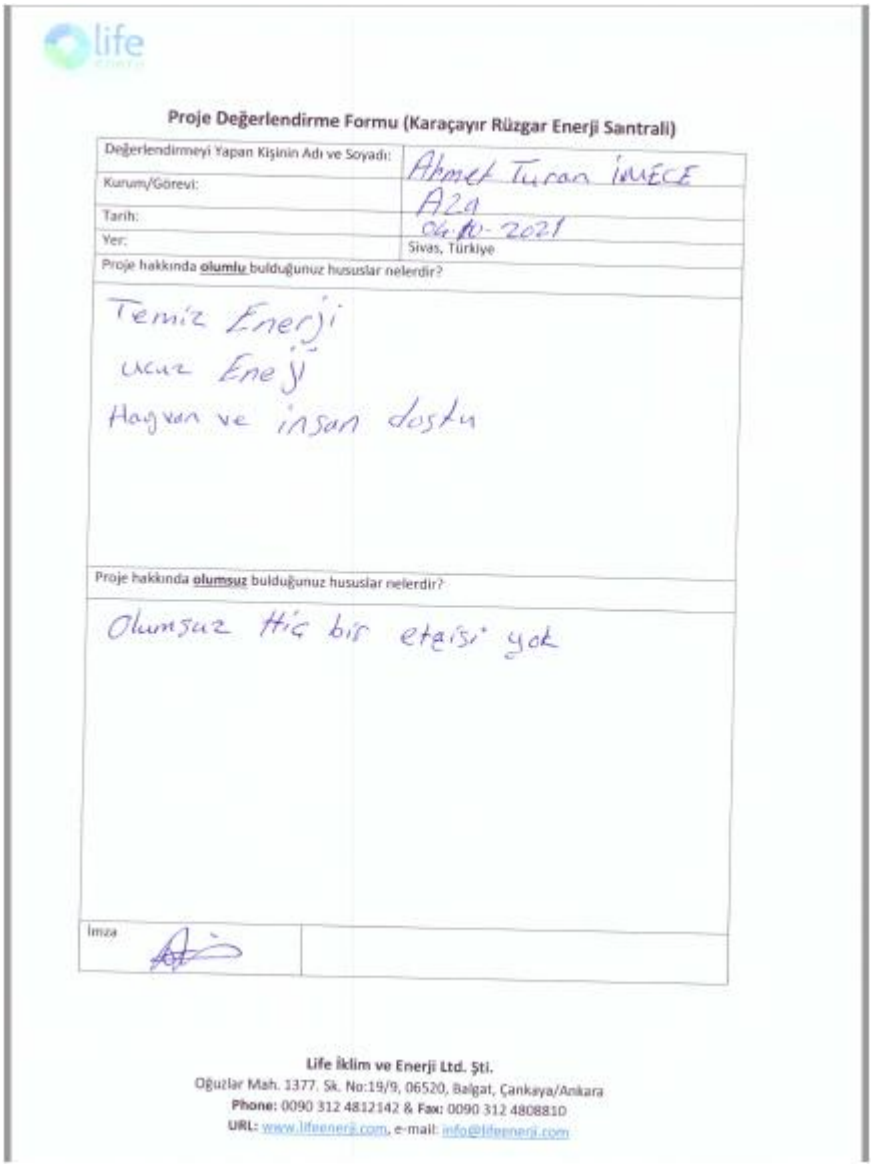
Phone: 0090 312 4812142 & **Fax:** 0090 312 4808810
URL: www.lifeenerji.com, e-mail: info@lifeenerji.com



life

Proje Değerlendirme Formu (Karaçayır Rüzgar Enerji Santrali)

Değerlendirmeyi Yapan Kişinin Adı ve Soyadı:	Ahmet Turan İNECE
Kurum/Görevi:	AZA
Tarih:	06.10.2021
Yer:	Sivas, Türkiye

Proje hakkında **olumlu** bulduğunuz hususlar nelerdir?

Temiz Enerji
Ucuz Enerji
Hayvan ve insan dostu

Proje hakkında **olumsuz** bulduğunuz hususlar nelerdir?

Olumsuz Hiç bir etkisi yok

İmza

Life İklim ve Enerji Ltd. Şti.
Oğuzlar Mah. 1377. Sk. No:19/9, 06520, Balgat, Çankaya/Ankara
Phone: 0090 312 4812142 & **Fax:** 0090 312 4808810
URL: www.lifeenerji.com, e-mail: info@lifeenerji.com

Project Submission Form

Proje Değerlendirme Formu (Karaçayır Rüzgar Enerji Santrali)

Değerlendirmeyi Yapan Kişinin Adı ve Soyadı:	Serife İNECE
Kurum/Görevi:	Gipci
Tarih:	04/10/2021
Yer:	Sivas, Türkiye

Proje hakkında **olumlu** bulduğunuz hususlar nelerdir?

Temiz Enerji
Azgaz kaplar

Proje hakkında **olumsuz** bulduğunuz hususlar nelerdir?

Olumsuz bir Etkisi yok

İmza

Life İklim ve Enerji Ltd. Şti.
Oğuzlar Mah. 1377. Sk. No:19/9, 06520, Balgat, Çankaya/Ankara
Phone: 0090 312 4812142 & **Fax:** 0090 312 4808810
URL: www.lifeenerji.com, e-mail: info@lifeenerji.com

Project Submission Form

Proje Değerlendirme Formu (Karaçayır Rüzgar Enerji Santrali)

Değerlendirmeyi Yapan Kişinin Adı ve Soyadı:	Zeynep ER TÜRK
Kurum/Görevi:	Gümüşdere İDİO Müdür
Tarih:	04.10.2021
Yer:	Sivas, Türkiye

Proje hakkında **olumlu** bulduğunuz hususlar nelerdir?

Temiz enerji
Ucuz enerji
Çevre tahribi yok sera gazı salınımı yok.
Hava kirliliği yapmaz.
Hayvan dostu.

Proje hakkında **olumsuz** bulduğunuz hususlar nelerdir?

Olumsuz bir özelliği yoktur.

İmza

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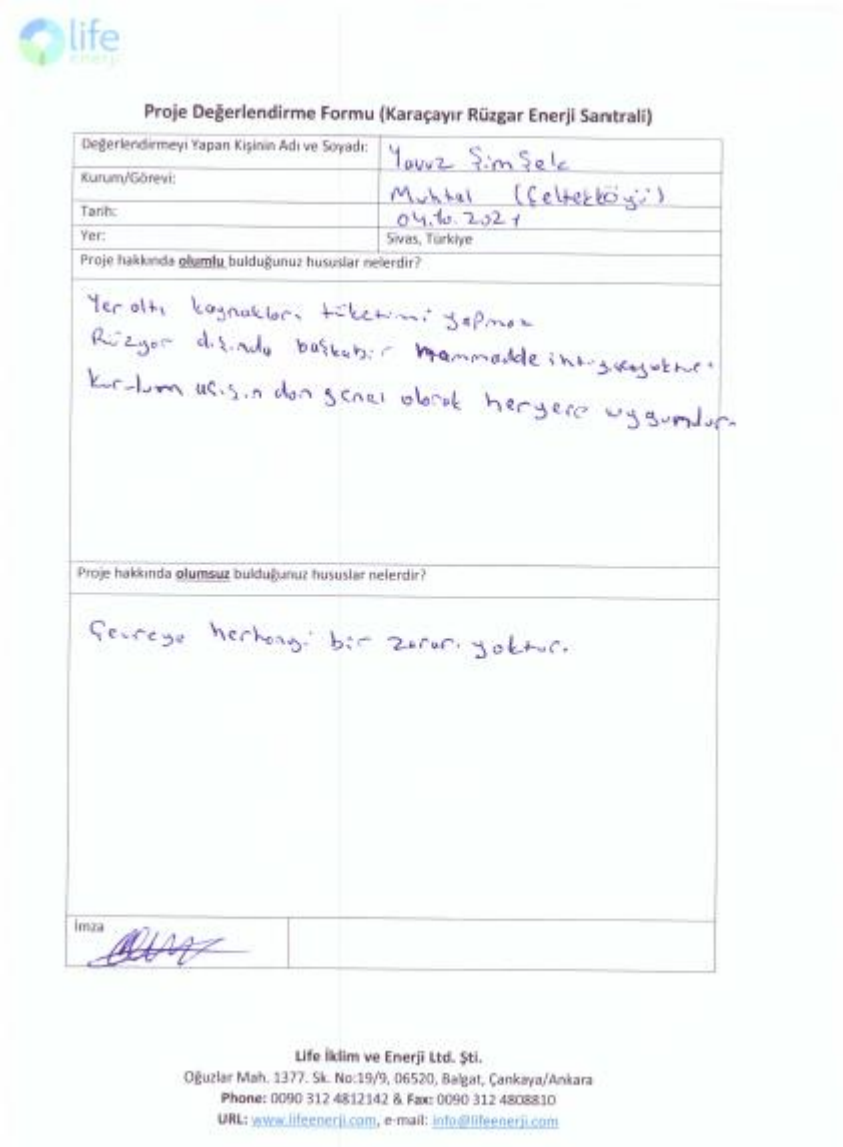
Phone: 0090 312 4812142 & **Fax:** 0090 312 4808810
URL: www.lifeenerji.com, e-mail: info@lifeenerji.com



Proje Değerlendirme Formu (Karaçayır Rüzgar Enerji Santrali)

Değerlendirmeyi Yapan Kişinin Adı ve Soyadı:	Yavuz Şimşek
Kurum/Görevi:	Muhtar (Çeltekköyü)
Tarih:	04.10.2021
Yer:	Sivas, Türkiye

Proje hakkında **olumlu** bulduğunuz hususlar nelerdir?

Yer altı kaynakları tüketimi yapmaz
Rüzgar dışında başka bir hammadde ihtiyacı yoktur.
Kurulum ve işletim dönemi olarak herşeye uygundur.

Proje hakkında **olumsuz** bulduğunuz hususlar nelerdir?

Çevreye herhangi bir zarar yoktur.

İmza

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Phone: 0090 312 4812142 & **Fax:** 0090 312 4808810
URL: www.lifeenerji.com, e-mail: info@lifeenerji.com

Translated Versions to English:

Project Evaluation Form (Karacayir Wind Power Plant)

Name and Surname of the Evaluator	Hamdullah Ozel
Establishment/Position:	Retired Sergeant
Date:	04.10.2021
Location:	Sivas, TURKEY
What do you think are the positive aspects of the project?	
- Contributes to the national economy - Enviromentally friendly - Creates employment opportunities	
What do you think are the negative aspects of the project?	
- There is no negative aspects to the power plant located in our region.	
Signature	

Life İklim ve Enerji Ltd. Şti.
Oğuzlar Mah. 1377. Sk. No:19/9, 06520, Balgat, Çankaya/Ankara
Phone: 0090 312 4812142 & **Fax:** 0090 312 4808810
URL: www.lifeenerji.com, e-mail: info@lifeenerji.com

Project Evaluation Form (Karacayir Wind Power Plant)

Name and Surname of the Evaluator	Belgin Ozel
Establishment/Position:	Housewife
Date:	04.10.2021
Location:	Sivas, TURKEY
What do you think are the positive aspects of the project?	
- It generates energy without harming nature	
What do you think are the negative aspects of the project?	
-	
Signature	

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Phone: 0090 312 4812142 & **Fax:** 0090 312 4808810
URL: www.lifeenerji.com, e-mail: info@lifeenerji.com

Project Evaluation Form (Karacayir Wind Power Plant)

Name and Surname of the Evaluator	Songul Karakaya
Establishment/Position:	Farmer
Date:	04.10.2021
Location:	Sivas, TURKEY
What do you think are the **positive** aspects of the project?	
- No negative aspects. On the contrary, it has a lot of benefits. It contributes to the national economy. It was constructed without cutting any trees.	
What do you think are the **negative** aspects of the project?	
- It does not have any negative aspects.	
Signature	

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Phone: 0090 312 4812142 & **Fax:** 0090 312 4808810
URL: www.lifeenerji.com, **e-mail:** info@lifeenerji.com

Project Evaluation Form (Karacayir Wind Power Plant)

Name and Surname of the Evaluator	Ahmet Turan Imece
Establishment/Position:	Associate
Date:	04.10.2021
Location:	Sivas, TURKEY
What do you think are the positive aspects of the project?	
- Clean energy - Cheap energy - Animal and human friendly	
What do you think are the negative aspects of the project?	
- It does not have any negative aspects.	
Signature	

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Phone: 0090 312 4812142 & **Fax:** 0090 312 4808810
URL: www.lifeenerji.com, e-mail: info@lifeenerji.com

Project Evaluation Form (Karacayir Wind Power Plant)

Name and Surname of the Evaluator	Serife Imece
Establishment/Position:	Farmer
Date:	04.10.2021
Location:	Sivas, TURKEY
What do you think are the positive aspects of the project?	
- Clean energy - It does not occupy a large area	
What do you think are the negative aspects of the project?	
- It does not have any negative aspects.	
Signature	

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Phone: 0090 312 4812142 & **Fax:** 0090 312 4808810
URL: www.lifeenerji.com, **e-mail:** info@lifeenerji.com

Project Evaluation Form (Karacayir Wind Power Plant)

Name and Surname of the Evaluator	Zeynep Erturk
Establishment/Position:	Headmaster of Gumusdere Elementary & Middle Schools
Date:	04.10.2021
Location:	Sivas, TURKEY
What do you think are the positive aspects of the project?	
- Clean energy - Cheap energy - It does not damage the enviroment, no greenhouse emission - It does not pollute air - Animal friendly	
What do you think are the negative aspects of the project?	
- It does not have any negative aspects.	
Signature	

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Phone: 0090 312 4812142 & **Fax:** 0090 312 4808810
URL: www.lifeenerji.com, **e-mail:** info@lifeenerji.com

Project Evaluation Form (Karacayir Wind Power Plant)

Name and Surname of the Evaluator	Yavuz Simsek
Establishment/Position:	Local Authority (Celtek Village)
Date:	04.10.2021
Location:	Sivas, TURKEY
What do you think are the positive aspects of the project?	
- It does not consume underground resources. - It does not require any raw material other than wind. - It is generally fit to get installed anywhere.	
What do you think are the negative aspects of the project?	
- It does not cause any damage to enviroment.	
Signature	

Life İklim ve Enerji Ltd. Şti.
Oğuzlar Mah. 1377. Sk. No:19/9, 06520, Balgat, Çankaya/Ankara
Phone: 0090 312 4812142 & **Fax:** 0090 312 4808810
URL: www.lifeenerji.com, e-mail: info@lifeenerji.com

Appendix 7. Summary of de-registered CDM project (Type B)

N/A

DOCUMENT HISTORY

Version	Date	Comment
V 3.2	31/12/2020	▪ The name of GCC Program's emission units has been changed from "Approved Carbon Reductions" or ACRs to "Approved Carbon Credits" or ACCs.
V 3.1	17/08/2020	▪ Editorial revisions made ○ Revised Table in section B.7.2 on Monitoring-program of risk management actions ○ Revised Table in section E.1 on Environmental Safeguards ○ Revised Table in section E.1 on Social Safeguards ○ Revised Table in section F on United Nations Sustainable Development Goals (SDG)
V 3.0	05/07/2020	▪ Revised version released on approval by Steering Committee as per GCC Program Process; ▪ Revised version contains following changes: ○ Change of name from Global Carbon Trust (GCT) to Global Carbon Council (GCC); ○ Considered and addressed comments raised by Steering Committee: ➢ during physical meeting (SCM 01, dated 29 Oct 2019, Doha Qatar); and ➢ electronic consultations EC01-Round 01 (15.09.2019 – 25.09.2019), EC01-Round 02 (27.03.2020 – 27.06.2020). ○ Feedback from Technical Advisory Board (TAB) of ICAO on GCC submission for approval under CORSIA[44];
V 2.0	25/06/2019	▪ Revised version released for approval by the GCC Steering Committee. ▪ Revised version includes additional details and instructions on the information to be provided, consequent to the latest developments world-wide (e.g., CORSIA EUC).
V 1.0	01/11/2016	Initial version released under the GCC Program Version 1

[44]See ICAO recommendation for conditional approval of GCC at https://www.icao.int/environmental-protection/CORSIA/Documents/TAB/Excerpt_TAB_Report_Jan_2020_final.pdf

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