المجلس العالمي للبصمة الكربونية
GLOBAL CARBON COUNCIL

Project Submission Form

V3.2 - 2020

Contents

COVER PAGE- Project Submission Form (PSF)	
BASIC INFORMATION	
Title of the Project Activity	**Aliağa WPP Capacity Addition Project**
PSF version number	02
Date of completion of this form	06/04/2022
Project Owner(s) (Shall be consistent with De-registered CDM Type B Projects)	BERGAMA RES ENERJİ ÜRETİM A.Ş.
Country where the Project Activity is located	Turkey

GPS coordinates of the project site(s)

Turbine	Latitude	Longitude
T37	DMS: 38°54'58.1"N	DMS: 27°10'09.6"E
	DD: 38.9161	DD: 27.1693
T38	DMS: 38°54'53.2"N	DMS: 27°10'20.4"E
	DD: 38.9147	DD: 27.1723
T39	DMS: 38°54'50.4"N	DMS: 27°10'33.7"E
	DD: 38.9139	DD: 27.1760
T40	DMS: 38°54'58.7"N	DMS: 27°12'38.2"E
	DD: 38.9163	DD: 27.2106
T41	DMS: 38°55'24.4"N	DMS: 27°11'07.7"E
	DD: 38.9234	DD: 27.1854
T42	DMS: 38°55'10.3"N	DMS: 27°11'21.5"E
	DD: 38.9195	DD: 27.1892
T43	DMS: 38°55'54.7"N	DMS: 27°11'32.5"E
	DD: 38.9318	DD: 27.1923

	T44	DMS: 38°55'22.5"N	DMS: 27°12'35.9"E
		DD: 38.9229	DD: 27.2099
	T45	DMS: 38°55'12.4"N	DMS: 27°12'36.7"E
		DD: 38.9201	DD: 27.2101
	T46	DMS: 38°54'42.6"N	DMS: 27°12'49.6"E
		DD: 38.9118	DD: 27.2137
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		
Minimum compliance requirements	☒ 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)		
Choose optional and additional requirements (Tick applicable label categories)	☒ 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)		
Applied methodologies (Shall be approved by the GCC or the CDM)	The proper methodology for the proposed project is “ACM0002: Grid-connected electricity generation from renewable sources – Version 20.”		
GHG Sectoral scope(s) linked to	The proposed project is classified under the GHG-SS #1 – Energy (renewable/non-renewable sources) category of the GCC Scope of GHG Emission Reductions.		

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

the applied methodology(ies)	
Applicable Rules and Requirements for Project Owners (Tick applicable Rules and Requirements)	

Rules and Requirements		Reference	Version
☒ ISO 14064-2			
☒ Applicable host country legal requirements /rules			
☒ GCC Rules and Requirements[2]	☒ Project Standard		3.1
	☐ Approved GCC Methodology (XXXXX)		
	☒ Program Definitions		3.1
	☒ Environment and Social Safeguards Standard		
	☒ Project Sustainability Standard		2.0
	☒ Instructions in Project Submission Form (PSF)-template		3.2
	☐ Add rows if required		
☒ CDM Rules[3]	☒ Approved CDM Methodology (XXXXX)	ACM0002	20
	☒ Tool for the demonstration and assessment of additionality	TOOL 01	07
	☐ Combined tool to identify the baseline scenario and demonstrate additionality	TOOL 02	
	☒ Tool to calculate the emission factor for an electricity system	TOOL 07	07
	☐ Demonstration of additionality of microscale project activities	TOOL 19	

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

		☐ Demonstration of additionality of small-scale project activities	TOOL 21	
		☐ Additionality of first-of-its-kind project activities	TOOL 23	
		☒ Common practice	TOOL 24	3.1
		☒ Investment analysis	TOOL 27	11
		☐ Positive lists of technologies	TOOL 32	
		☐ Guidelines for objective demonstration 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. Provide details below for the boxes ticked above

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

	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 Bergama RES Enerji Üretim A.Ş.** Altuğ Bülgın Member of Board **06/04/2022** BERGAMA RES ENERJİ ÜRETİM ANONİM ŞİRKETİ Kuleli Caddesi No:7/8 06700 G.O.P. / ANKARA Tel: 0312 446 [illegible]23 (Pbx) Fax: 0312 437 43 99 Ankara Kurumlar V.D. 165 027 1671 Mersis No: 0165027167100017

1. PROJECT SUBMISSION FORM

Section A. Description of the Project Activity

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

The Aliağa WPP Capacity Addition Project (referred to as the **proposed project** from here on) was built and developed by Bergama RES Enerji Üretim A.Ş. (referred to as the **project owner** from here on). The project activity is in the Bergama and Aliağa districts of Turkey's western İzmir province. The project activity involves the installation of 10 wind turbines, each with a capacity of 3,000 kW, making the total installed capacity addition to 30 MW. The project owner built 10 more turbines in 2016 and increased the 90 MW capacity of the existing Aliağa WPP to 120 MW with the 30 MW

capacity of the proposed project. The proposed project activity consists of only the capacity addition to the existing Aliağa WPP. The generation license of the existing plant has been revised and increased to 120 MW from 90 MW on 01/04/2015.[6] As per the license issued by the EMRA, all legal rights of the project are granted to Bergama RES Enerji Üretim A.Ş. for 49 years, including pre-construction and construction periods.

Aliağa WPP's preliminary scope was validated and verified under the Gold Standard (GS) with ID 735, and its first commissioning date was in 2010. However, the capacity addition's investment decision date is in the second half of 2015, and it started providing electricity to the national grid in 2016. As per rules set forth by the GS, validation, and verification for this capacity addition was not possible at that time since the project owner missed the deadline to submit it. Thus, it is crucial for this capacity addition to be verified under the GCC Standard as it was neither economically attractive nor feasible but was still undertaken for the sake of investment in clean energy. The project owner installed state-of-art wind turbines to achieve the most optimal power output for the energy demand and emission reductions associated with it.

The proposed project activity consists of 10 Nordex Delta N117/3000 kWh wind turbines, each 3 MW of installed power. The turbines provide electricity to the national grid via a 17-kilometer-long transmission line connected to the 154 kV Viking TM. It exports the generated electricity to the Turkish national grid with generation from wind power, thereby contributing to the Host Country's electricity demand, energy diversification, and renewable energy development. As Turkey is a developing country with a rapidly increasing population and has a fossil-fuel-based energy industry, its electricity demand rises subsequently. Thus, if the project owner did not actualize the proposed project activity, the energy generated from 30 MW of wind power would have otherwise been provided from an additional plant – which is assumed to be fossil-fuel sourced per official projections. [7] In this sense, by investing in the project, the owner aims to reduce the country's dependency on fossil fuels, decreasing environmental pollution and GHG emissions.

According to the proposed project's energy yield assessment report, the average energy generation per year is estimated to be 110,354 MWh. Consequently, the annual emission reductions are estimated to be 71,531 t CO_2e per the applied methodology.

The main goals of the project activity include:

- utilizing Turkey's wind potential to meet increasing electricity demand and maintain energy security,
- reducing GHG emission through the increasing share of renewable sources,
- contributing to economic development by creating direct and indirect employment opportunities during the construction and operation phases,
- decreasing import dependency on fossil-fuel weighed electricity sector and diversifying the generation mix through the use of local resources and,
- promoting sustainable development through supporting the local community and local economy.

[6] Generation License, page 6.

[7] Please refer to the *Section B.4 Baseline Scenario* for details.

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

Contribution to Sustainable Development

Renewable energy is crucial for implementing Sustainable Development Goals (SDGs). It is especially core to implementing two SDGs, Goal 7 Affordable and Clean Energy and Goal 13 Climate Action. While SDG 7 focuses on access to affordable, reliable, sustainable, and modern energy for all, SDG 13 centers on urgent action to combat climate change. In this sense, the proposed project contributes to SDG 7 by increasing the share of renewables in the total installed power capacity connected to the power grid and SDG 13 by providing clean energy to the grid, avoiding 71,531 t CO_2e of GHG emissions annually.

The project activity also contributes to Goal 8 Decent Work and Economic Growth, by creating direct and indirect employment opportunities for the locals during the construction and operation phases of the capacity addition. As a renewable energy investment, the proposed project activity contributes to SDG 8 through its core business practices, including driving economic growth through electrification, local procurement, and other indirect economic activity. Besides, the proposed project activity increases the share of renewables in Turkey's electricity mix, thus lowering dependency on fossil-fuel sources and fossil-fuel employment. Therefore, it can be concluded that the proposed project activity is also promoting the achievement of SDG 8 by supporting a just transition to a low-carbon economy. Furthermore, the project owner also provides scholarships to students, also supporting SDG Goal 4 Quality Education.

By lowering dependency on fossil-fuel energy, the project activity also promotes transition to a sustainable future by preventing air pollution, contributing to Goal 11 Sustainable Cities and Communities. The proposed project activity decreases the amount of $PM_{2.5}$ (particulate matter 2.5 micrometers or less in diameter) and PM_{10} (particulate matter having a diameter of fewer than 10 micrometers) emissions – which fossil-fuel emissions cause as secondary sources. Since the project activity reduces the use of fossil fuels, $PM_{2.5}$ and PM_{10} formation will be reduced accordingly.[8] Thus, the project activity helps to improve air quality in cities. Since the project activity consists of energy generation from renewable sources, it also contributes to Goal 6 Ensure availability and sustainable management of water and sanitation for all. Electricity generation from wind does not use water in appreciable amounts and does not pose a direct systematic impact on water quality. This stands in contrast to thermal power plants, which require water for cooling. Therefore, this project significantly avoids water use and thus protects the environment.

The final SDG that the project activity promotes is Goal 9 Industry, Innovation, and Infrastructure. The project contributes to SDG 9 by providing clean and renewable energy by adopting environmentally sound wind power generation technology. This green energy provided from wind power promotes clean growth opportunities and helps ensure a just and sustainable transition for communities. Thus, the proposed project activity helps adopt clean energy technologies by building 10 new wind turbines and promoting innovation in the industry by increasing investment in renewable energy.

[8] European Environment Agency, Impacts of renewable energy on air pollutant emissions, Section 3.1.2 https://www.eionet.europa.eu/etcs/etc-cme/products/etc-cme-reports/impacts-of-renewable-energy-on-air-pollutant-emissions

A.2. Location of the Project Activity

The proposed project is located in Turkey's Aegean province of İzmir's Bergama district. The closest settlements to the project site are İsmailli, Atçılar, and Seklik Villages.

Figure 1. İzmir province in Turkey

Figure 2. Bergama district in İzmir province

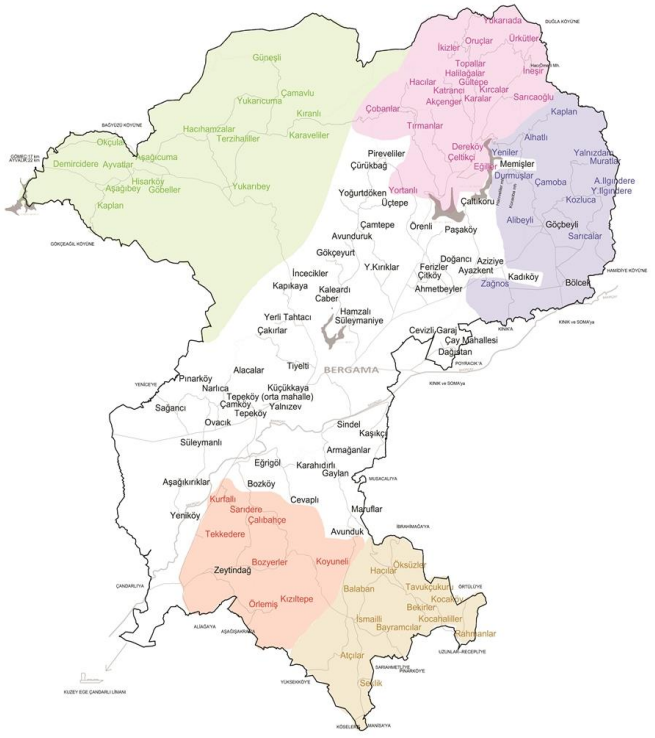
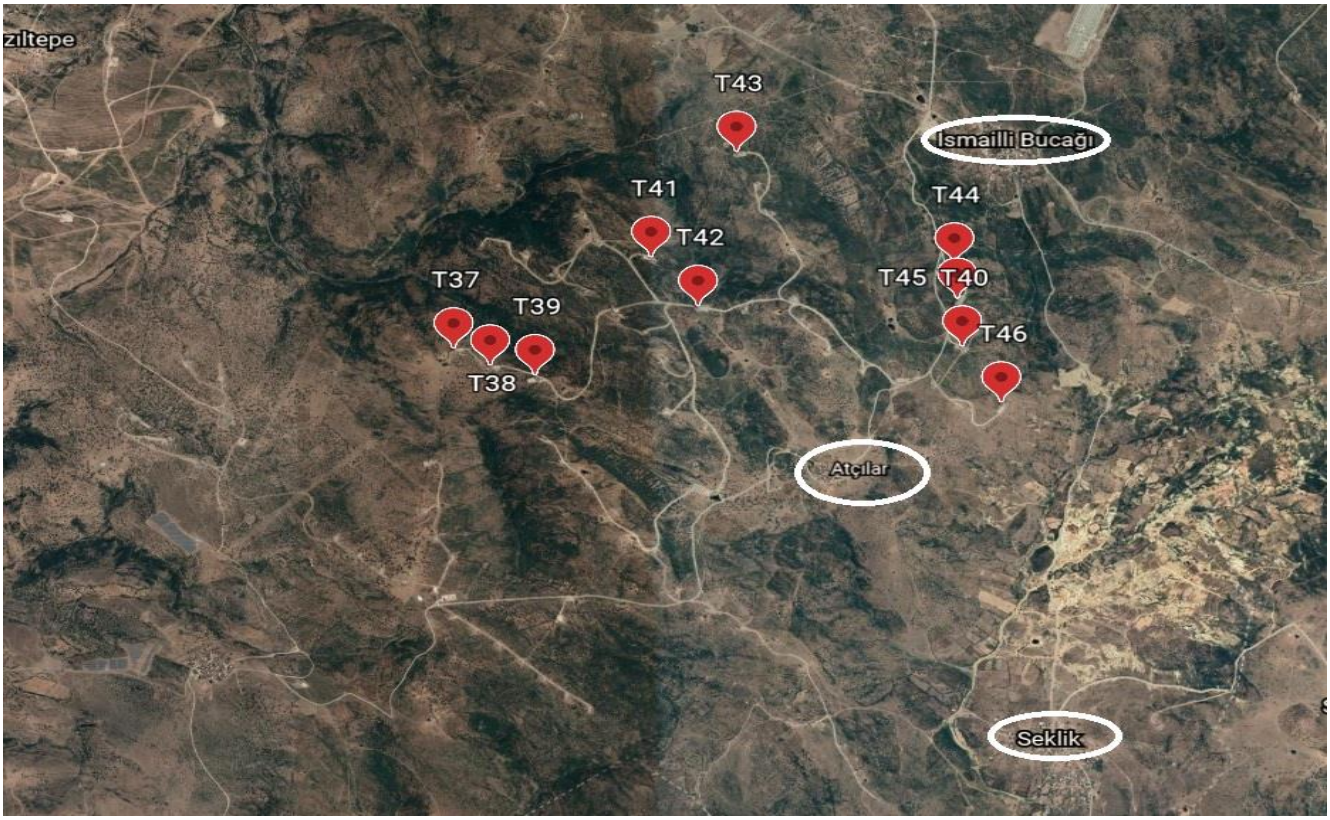


Figure 3. Map of villages near the turbines



Address and geodetic coordinates of the physical site of the Project Activity			
Physical address	**Turbine**	**Latitude**	**Longitude**
İzmir province – Aliağa, Bergama districts TURKEY	**T37**	DMS: 38°54'58.1"N	DMS: 27°10'09.6"E
		DD: 38.9161	DD: 27.1693
	T38	DMS: 38°54'53.2"N	DMS: 27°10'20.4"E
		DD: 38.9147	DD: 27.1723
	T39	DMS: 38°54'50.4"N	DMS: 27°10'33.7"E
		DD: 38.9139	DD: 27.1760
	T40	DMS: 38°54'58.7"N	DMS: 27°12'38.2"E
		DD: 38.9163	DD: 27.2106
	T41	DMS: 38°55'24.4"N	DMS: 27°11'07.7"E
		DD: 38.9234	DD: 27.1854
		DMS: 38°55'10.3"N	DMS: 27°11'21.5"E

	T42	DD: 38.9195	DD: 27.1892
	T43	DMS: 38°55'54.7"N	DMS: 27°11'32.5"E
		DD: 38.9318	DD: 27.1923
	T44	DMS: 38°55'22.5"N	DMS: 27°12'35.9"E
		DD: 38.9229	DD: 27.2099
	T45	DMS: 38°55'12.4"N	DMS: 27°12'36.7"E
		DD: 38.9201	DD: 27.2101
	T46	DMS: 38°54'42.6"N	DMS: 27°12'49.6"E
		DD: 38.9118	DD: 27.2137

A.3. Technologies/measures

The proposed project activity uses wind turbines to capture the wind's energy and turn it into power by converting kinetic energy from the wind into electricity. It involves the installation of 10 units of additional wind turbines, with a total installed capacity of 30 MW. The power generated by the project activity feeds into the 154 kV Viking TM interconnected system via the 17-kilometer-long transmission line. The turbines are placed upwind with rotors positioned in front of the units. The wind turbines are Nordex Delta N117/3000 turbines, and technical details are provided below:

Operating data

Rated power	3 MW
Cut-in wind speed	3 m/s
Cut-out wind speed	25 m/s

Rotor

Diameter	116.8 m
Swept area	10,715 m^2
Operating range rotational speed	7,9 – 14,1 rpm
Rated rotational speed	12.6 rpm
Tip speed	77 m/s
Speed control	Variable via microprocessor
Overspeed control	Pitch angle

Gearbox

Type	Combined spur/ planetary gear

Generator

Construction	Double-fed asynchronous generator
Cooling system	Liquid/air cooling
Voltage	660 V
Grid frequency	50/60 Hz

Brake system

Main brake	Pitch angle
Holding brake	Disk brake

Hub height

Hub height	120 m

According to ACM0002's "Tool to determine the lifetime of equipment," the average technical lifespan of onshore wind turbines is 25 years.[9] The manufacturer's standards state that the calculated service life of a Delta N117 turbine is 20 years; nevertheless, this can be extended with proper maintenance and upgrades.[10]

A.4. Project Owner(s)

Location/ Country	Project Owner(s)	Where applicable[11], indicate if the host country has provided approval (Yes/No)
Turkey	Bergama RES Enerji Üretim A.Ş.	Not Applicable

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		
2016	2026	CORSIA	715,310 t CO_2 to be used for CORSIA

As a large-scale wind power plant project, the proposed project serves as a perfect project to demonstrate the long-term potential of wind energy to efficiently reduce GHG emissions and diversify and increase the security of the local energy supply and contribute to sustainable development. Wind-driven turbines rotate in generators, and the electricity generated here is transferred to the grid for consumers without any greenhouse gas emissions. ACCs from the project activity shall help realize this technology by providing adequate compensation for the lacking financial incentives in the Turkish renewable energy market.

[9] See Tool 10 v.01, p. 4.

[10] Nordex N117/3000 turbines
https://www.commissiemer.nl/projectdocumenten/00001748.pdf

[11] 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).

On the other hand, the project owner confirms that the project activity's carbon credits (ACCs) shall not be double-counted. The project activity is registered only with GCC and no other carbon standard or Renewable Energy Certification Program.

A.6. Additional requirements for CORSIA

Please refer to *Section E* and *Section F*.

Section B. Application of selected methodology(ies)

B.1. Reference to methodology(ies)

The United Nations approved consolidated baseline and monitoring methodology applicable to this project is "Consolidated Methodology for Grid-connected electricity generation from renewable sources," Version 20, valid as of 28/11/2019 (referred to as ACM0002 from here on).[12]

ACM0002 refers to the following tools:

- "Tool for the demonstration and assessment of additionality," Version 07 (referred to as "Tool 01" from here on),[13]
- "Tool to calculate the emission factor for an electricity system," Version 07 (referred to as "Tool 07" from here on),[14]
- "Tool to determine the remaining lifetime of equipment," Version 01 (referred to as "Tool 10" from here on),[15]
- "Common practice," Version 03.1 (referred to as the "Tool 24" from here on)[16], and
- "Investment analysis," Version 11 (referred to as the "Tool 27" from here on)[17].

B.2. Applicability of methodology(ies)

As the project's installed capacity is over 15MW, it is considered a large-scale project per CDM rules, justifying the decision to use the large-scale ACM0002 methodology.

[12] See CDM ACM0002 Version 20, https://cdm.unfccc.int/filestorage/A/G/0/AG07ZJQ3EXD42LT5YV9HR16M8KINPO/EB105_repan03_ACM0002.pdf?t=Nmh8cjVqbHlrfDAaK-eFGETfNi0Bg4_abnZM [ACM0002 v.20]
[13] See ACM0002 Tool 01 Version 7, https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf [Tool01 v.07]
[14] See ACM0002 Tool 07 Version 7, https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf [Tool 07 v.07]
[15] See ACM0002 Tool 10 Version 01, https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-10-v1.pdf [Tool 10 v.01]
[16] See ACM0002 Tool 24 Version 03.1, https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-24-v1.pdf [Tool 24 v.03.1]
[17] See ACM0002 Tool 27 Version 11, https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-27-v11.0.pdf [Tool 27 v.11]

The “Applicability” Section in ACM0002 states:

“This methodology is applicable to grid-connected renewable energy power generation project activities that include […] capacity addition of an existing power plant […].” [18]

The applicability criteria and conditions are discussed in more detail as follows:

Ref.	Applicability Criteria	Justification
1	This methodology is applicable to grid-connected renewable energy power generation project activities that: (a) Install a Greenfield power plant (b) Involve a capacity addition to (an) existing plant(s); (c) Involve a retrofit of (an) existing plant(s)/unit(s); (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) Involve a replacement of (an) existing plant(s)/unit(s).	Applicable. The project activity involves capacity addition to an existing wind power plant by installing new wind power units.
2	The project activity may include renewable energy power plant/unit of one of the following types: hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit.	Applicable. The project activity involves a grid-connected wind power plant.
3	In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects) the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.	Not applicable. Since the proposed project activity is the capacity addition to a wind power plant, this criterion is not applicable.
	In case of hydro power plants, one of the following conditions shall apply:	

[18] ACMOOO2 v.20, Section 2.1.

	(a) The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or (b) The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density, calculated using equation (3), is greater than 4 W/m2; or (c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (3), is greater than 4 W/m2; or (d) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (3), is lower than or equal to 4 W/m2, all of the following conditions shall apply. i. The power density calculated using the total installed capacity of the integrated project, as per equation (4), is greater than 4 W/m2 ii. Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity iii. Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m2 shall be: • Lower than or equal to 15 MW, and • Less than 10 per cent of the total installed capacity of integrated hydropower project.	Not applicable. This criterion does not apply to the proposed project activity since it is not a hydropower project.
4	In the case of integrated hydro power projects, project proponent shall: (a) Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or (b) Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore, this water balance will take into account seasonal flows from river, tributaries (if any), and	Not applicable. The proposed project activity is not a hydropower plant.

	rainfall for minimum of five years prior to the implementation of the CDM project activity.	
5	The methodology is not applicable to: (a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site; (b) Biomass fired power plants/units.	Not applicable. The proposed project activity is the capacity addition to a wind power plant. It neither involves switching from fossil fuels to renewable energy sources nor is a biomass-fired power plant.
6	In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance."	The baseline scenario is the continuation of the current situation. This is considered as most plausible one, since it represents the only reasonable option for the energy situation in Turkey.
7	In addition, the applicability conditions included in the tools referred to above apply.	Applicability conditions of the applied tool are justified.

Moreover, ACM0002 explicitly requires applying the applicability conditions of Tools 01 and 07. The Section "Scope, applicability and entry into force" in Tool 07 states: "[…] This tool may be applied […] when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid […]."[19] This is the case for the proposed project activity.

In Tool 01, the Section "Scope, applicability and entry into force" states: "[…] The document provides a general framework for demonstrating and assessing additionality and is applicable to a wide range of project types. […]"[20]

As the project type is per ACM0002, and at the same time ACM0002 refers to Tool 01, the latter can be considered applicable. Tool 01 also elaborates on the steps that need to be demonstrated to show additionality, which includes investment and common practice analyses.[21]

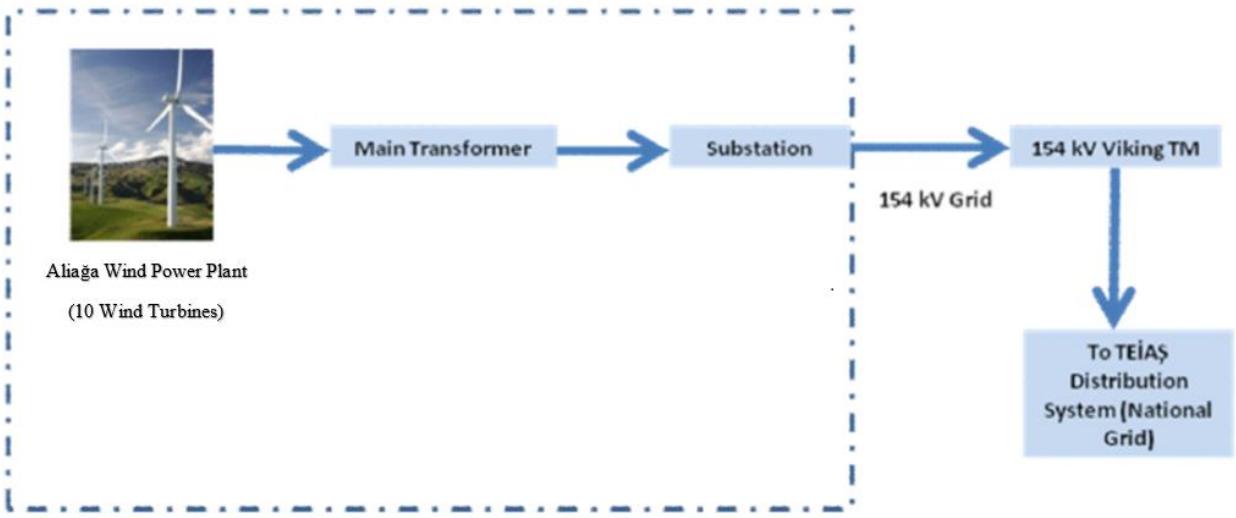
[19] Tool 07 v.07, Section 2.2.
[20] Tool 01 v.07, Section 2.1.
[21] Tool 01 v.07, Section 1

Tool 27's applicability section explicitly states that the tool is applicable for project activities that apply Tool 27.[22] Tool 24's section on applicability also points to the same matter.[23] Thus, the proposed project's use of the Tools 27 and 24 is justified.

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

According to the applied methodology, ACM0002, the project boundary's spatial extent contains the project power plant and all power plants physically connected to the electricity system[24], as defined in Tool 07.[25] In the case of the proposed project, the electricity generated at the plant is connected to Turkey's national electricity grid. Hence, the project boundary is considered the Host Country's national electricity grid.

Figure 4. Operation diagram of the project



	Source	GHG	Included?	Justification/Explanation
Baseline	CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity.	CO_2	Yes	Main emission source
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source
Pr	For wind power plants, emissions	CO_2	No	No Emission Source

[22] Tool 27 v.11, Section 2.1.
[23] Tool 24 v.03.1, Section 2.2
[24] ACM0002 v.20, Section 5.1.
[25] Tool 07 v.07, Section 4.

	of CO_2 from the project activity	CH_4	No	No Emission Source
		N_2O	No	No Emission Source

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

B.4. Establishment and description of the baseline scenario

According to ACM0002 prescribes the baseline scenario for the capacity addition to an existing renewable energy power plant as:

"[…] the existing facility that would continue to supply electricity to the grid at historical levels, until the time at which the generation facility would likely to be replaced or retrofitted ($DATE_{BaselineRetrofit}$), and electricity delivered to the grid by the added capacity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in 'TOOL07: Tool to calculate the emission factor for an electricity system'."[26]

Nevertheless, the project activity involves capacity addition to an existing wind power plant, and the formula $EG_{PJ,y} = EG_{PJ\_ADD,y}$ will be used for the calculation of electricity generated. Thus, the baseline scenario for the proposed project activity is not defined above but rather constitutes the electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources.

In the absence of the proposed project activity, the existing facility will continue to supply electricity to the grid at historical levels. Since the project activity is based on wind energy and the capacity addition's generation is equal to $EG_{PJ,y,}$ the baseline scenario for the proposed project is electricity delivered to the grid by the project activity that the operation of grid-connected power plant would have otherwise generated. Therefore, the baseline emissions correspond to emissions from electricity generation in thermal power plants displaced due to the project activity.

Turkey's Energy and Natural Resources Ministry publishes factsheets that include the corresponding year's emission factor values. Thus, the ministry's calculations will be utilized for the CM factor for this PSF.[27]

Turkey's long-term electricity demand and supply projections are assessed to describe the baseline and its development for the project activity.

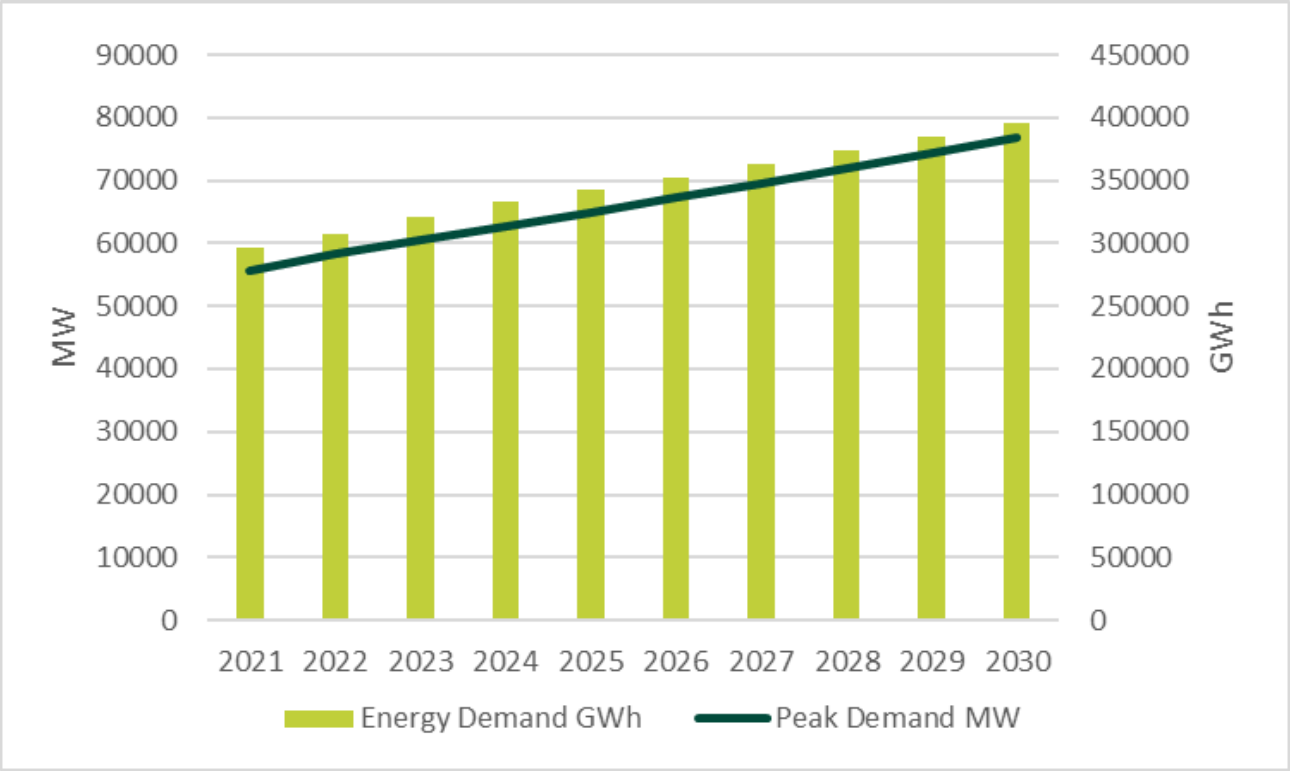
Turkey is an energy importing country, and the electricity is mostly generated by fossil fuels, which also has the largest share in energy expenses. As a developing country with a fast-growing population, Turkey attaches great importance to its energy diversification and security to reduce energy dependence on fossil sources.

[26] ACM0002 v.20, Section 5.2.2.

[27] See Energy and Natural Resources Ministry, Turkish National Electricity Grid Emission Factor Factsheet. https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%B0klim/%C4%B0klimDe%C4%9Fi%C5%9Fikli%C4%9Fi/T%C3%BCrkiyeUlusalElektrik%C5%9EebekesiEmisyonFakt%C3%B6r%C3%BC/Belgeler/EK-2.pdf

According to Turkish Electricity Transmission Corporation (TEİAŞ) projections, the country's energy demand will reach 395.9 GWh by 2030.[28] In 2011, the total electricity consumption was at 230.3 GWh, whereas in 2020, this figure reached 306.1 GWh, indicating a 32 percent hike in a decade.[29] The figure below demonstrates the demand projections, with a realistic average of 3.3 percent increase per year.

Figure 5. Energy demand projection, Turkey 2021-2030



As seen in the figure below, coal and natural gas have been and will continue to be dominant in Turkey's energy supply mix. In 2020, Turkey supplied 106.2 GWh of electricity from coal, 69.3 GWh from natural gas, 78.1 GWh from hydro, 24.7 GWh from wind, 11.2 GWh from solar PV, and 9.9 GWh from geothermal sources.[30]

The increasing energy demand and expenditures pushed Turkey to follow policies to reduce its energy dependency by promoting renewable energy sources. For instance, 49.7% of the power plants put into use in 2017 were wind and solar power plants, while this percentage increased to

[28] TEİAŞ Generation Capacity Projection for 2021-2025, Section 2.4
[TEİAŞ GCP]
[29] TEİAŞ GCP, Section 2.3
[30] International Energy Agency, Turkey Data browser, Electric generation by source 1990-2020
https://www.iea.org/countries/turkey

62.7% in 2018.[31] In 2020, the total installed capacity rose by 4,624 MW, and at the same period, 1,913 MW of wind and solar power plants started operations.[32]

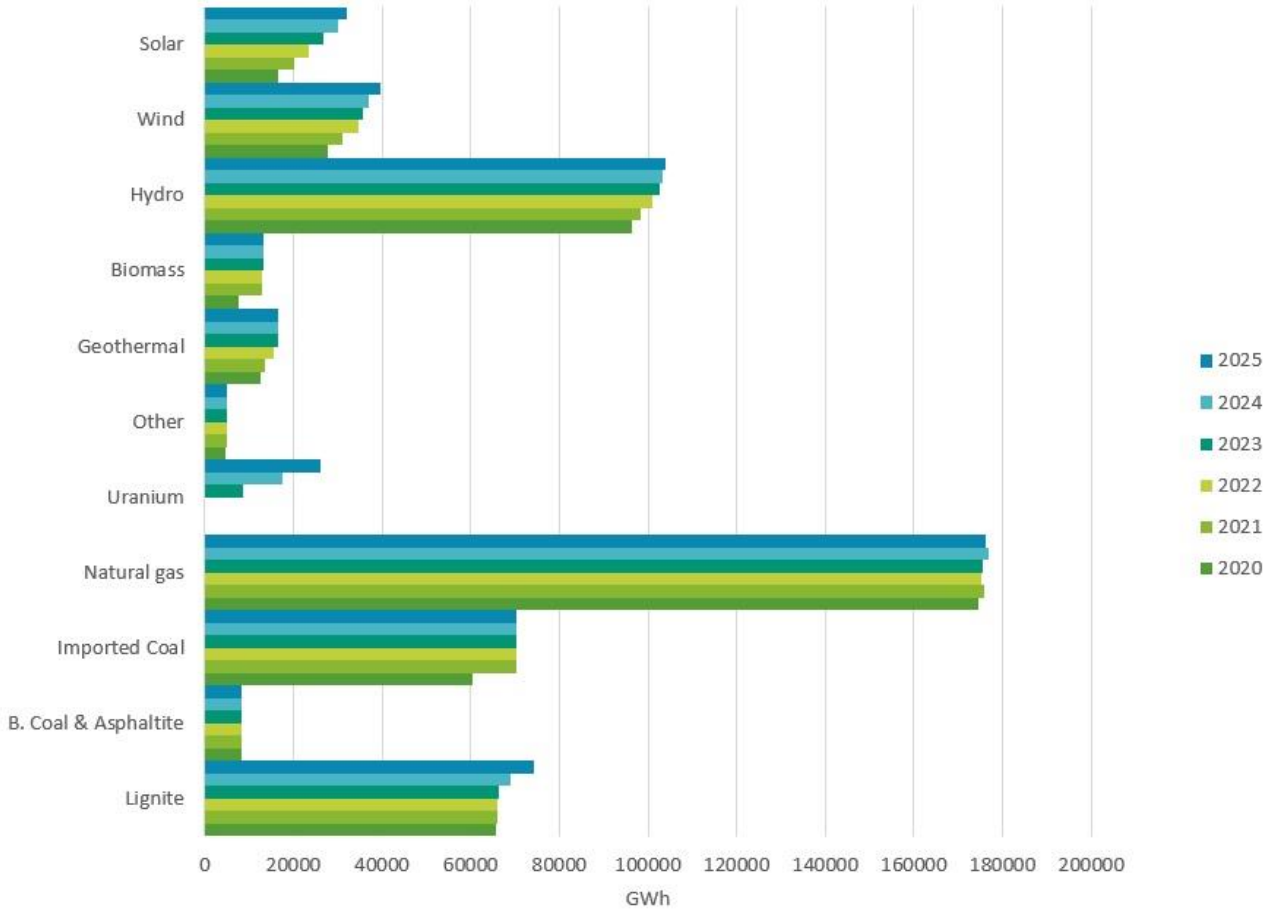


Figure 6. Electricity supply projection by source, Turkey 2020-2025

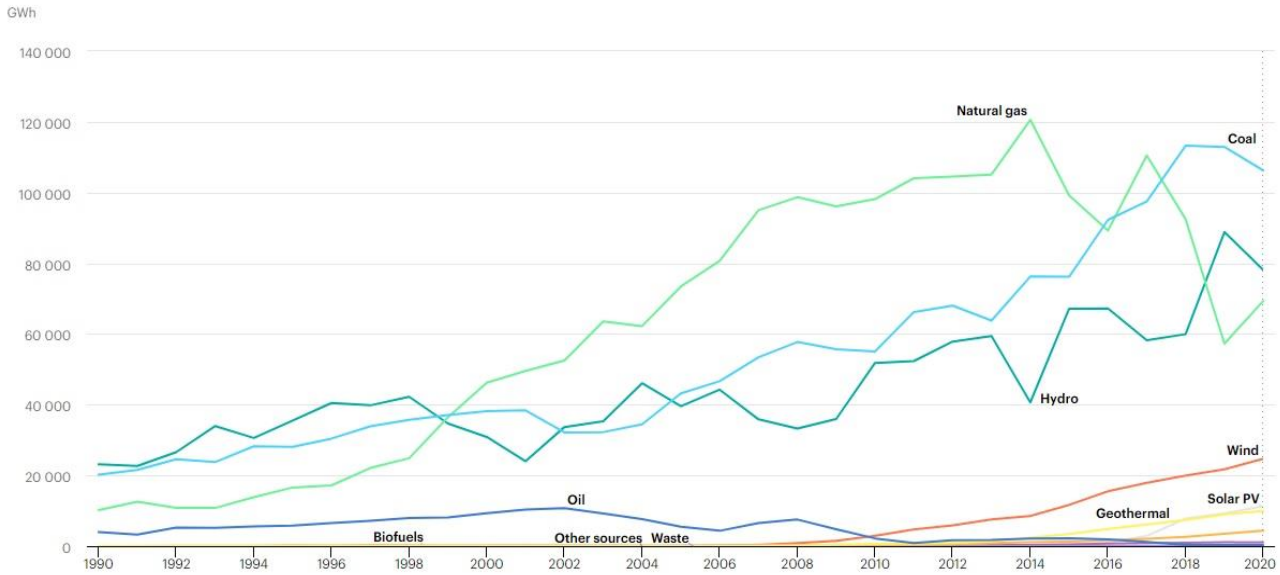
In this regard, the energy obtained by wind power ranks first in the non-hydro renewable investments due to the country's high wind potential. For this, Turkey set energy targets by 2023, including 20 GW of installed wind capacity. Yet despite good efforts, the current wind installed capacity is 10 GW, most of them being onshore plants.[33]

Turkey's large territory and excellent wind speeds offer the most optimal conditions for wind energy production. But investment in wind turbines is much lower when compared to investments for the

[31] TSKB, Energy Outlook 2021, Section 1.1.3.
https://www.tskb.com.tr/i/assets/document/pdf/energy_outlook_2021.pdf
[32] Ibid
[33] https://windeurope.org/newsroom/news/turkey-reaches-10-gw-wind-energy-milestone/#:~:text=Over%20the%20past%20decade%20the,over%20the%20last%2010%20years.

installation of other types of renewable energy plants. Turkey's western regions have the highest potential with a wind speed of 7 – 8.5 m/s on the coasts and 6.5 – 7 m/s in the internal territories between the western and northeastern parts.

Figure 7. Electricity generation by source, Turkey 1990-2020[34]



Even though the initial investment cost is high and capacity factors are low, installing wind power plants becomes more common in Turkey as the energy generated cleaner and emission-free. Thus, for the analysis of the baseline scenario, it can be concluded that:

- Energy demand in Turkey has been increasing and will continue to do so for the foreseeable future.
- There is a crucial need for electricity generation investments to satisfy the demand, indicating that other power plants would otherwise generate the proposed project's energy generation.
- Fossil fuels will continue to dominate the generation mix, hydro-included renewable sources will remain low, and non-hydro energy contribution will be negligible. This also demonstrates that most new capacity additions will consist of fossil-fuel-fired power plants.

All of the factors mentioned above indicate that without the absence of the proposed project activity, power generation from a new grid-connected thermal plant would be the most likely scenario, increasing the amount of GHGs released to the atmosphere.

B.5. Demonstration of additionality

[34] IEA, Turkey Data browser, Electricity generation by source, 1998-2020

According to the GCC Project Standard Version 3.1, demonstration of additionality "consists of two components;

(a) A Legal Requirement Test; and
(b) An Additionality Test either based on a Positive List test or a projects-specific additionality test."[35]

The GCC Standard explicitly states that passing the legal requirement test "ensures that eligible projects […] would not have occurred […] to comply with federal, state or local regulations or other legally-binding mandates."[36]

The proposed project was not constructed via enforced laws, statutes, regulations, court orders, environmental-mitigation agreements, permitting conditions, or other legally binding mandates requiring its implementation. Furthermore, as per para. 46 of Project Standard, voluntary commitments/agreements within a sector or entity do not constitute the legal requirement.

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).	The United Nations approved consolidated baseline, and monitoring methodology applicable to this project is "Consolidated Methodology for Grid-connected electricity generation from renewable sources," Version 20, valid as of 28/11/2019 (referred to as ACM0002 from here on). ACM0002 refers to the following tools: • "Tool for the demonstration and assessment of additionality," Version 07, • "Tool to calculate the emission factor for an electricity system," Version 07, • "Common practice," Version 03.1, • "Investment analysis," Version 11. The listed methodology and its additionality and emission calculation tools are the latest versions set by the CDM.
Describe how the proposed project meets the criteria for deemed additionality.	1. As discussed in the investment analysis section below, the proposed project without carbon revenue is not financially attractive. (Benchmark and Sensitivity Analysis) 2. Continuation of the current situation (the supply of the equal amount of electricity is

[35] GCC Project Standard Version 3.1, Section 6.4.8 [GCC PS v.3.1]
[36] Ibid

	provided by a newly built grid-connected power plant) This is not considered a realistic alternative due to the increasing electricity demand; new power plants should be built, mainly including thermal ones. Thus, the implementation of the proposed project is additional to the baseline scenario. 3. The following applicable mandatory laws and regulations have been identified: 4. Electricity Market Law 5. Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electricity Energy 6. Energy Efficiency Law 7. Forest Law 8. Environment Law 9. In accordance with the common practice analysis, there are no plants similar to the proposed project and built without the carbon revenue. Thus, the proposed project's type should not be considered as a common practice in Turkey. Hence, the project is additional.

An Additionality Test is further applied as follows. The project's additionality is demonstrated by using the approved ACM0002 methodology's Tool 01.

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

Realistic and credible alternatives to the project activity are defined through the following Sub-steps:

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

The proposed project activity aims to generate electrical power using wind energy and feed the electricity generated to the grid. Hence, the following alternatives are considered:

Alternative 1: The proposed project is not undertaken as an ACC project activity.

The implementation of the project without carbon revenue is not financially attractive. This is discussed in detail in Step 2 of this section.

Alternative 2: Continuation of the current situation and supply of the equal amount of electricity by new plants connected to the grid.

The second alternative is the baseline scenario, and implementation of the proposed project as an ACC activity would be additional to this scenario.

Outcome of Step 1a

The possible alternatives of this project scenario are defined above. In the absence of the proposed project activity, the most likely scenario will be the electricity supply to the grid with the installation of new power plants to meet the Host Country's increasing demand. The implementation of the project is additional to the baseline scenario, which is prescribed in Alternative 2 above; and, therefore, reduces emissions.

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

- Electricity Market Law (Law Number: 6446, ratified 14/03/2013, enacted 30/03/2013)[37]
- Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electricity Energy (Law Number: 5346, ratified 10/05/2005, enacted 11/08/1983)[38]
- Energy Efficiency Law (Law Number: 5627, ratified 18/04/2007, enacted 02/05/2007)[39]
- Forest Law (Law Number: 6831, ratified 31/08/1956, enacted 08/09/1956)[40]
- Environment Law (Law Number: 2872, ratified 09/08/1983, enacted 11/08/1983)[41]
- Environmental Impact Assessment Regulation[42] (enacted 25/11/2014 with Official Gazette Issue: 29186)

The alternative scenario in *Step 1a* is realistic and credible to the project and is consistent with mandatory laws and regulations. The proposed project activity conforms to all applicable laws and regulations in Turkey. According to the Electricity Market Law, all renewable power plants (with an installed capacity larger than 5 MW) need a license from the Energy Market Regulation Authority (EMRA) to generate, transmit and trade electricity. This license has been issued in line with the Electricity Market Law and Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electricity Energy – which refers to the EMRA for license processes. The project activity received this license to start its operations. The plant also received an official document stating its relief from the duty to perform EIA, per the EIA Regulation – which was prepared based on Article 10 of Environment Law. Forest Law has also been satisfied before the construction process and during the operation phase.

Outcome of Step 1b

Based on the analysis of the scenarios above, the proposed project activity is the only alternative and complies with mandatory laws and regulations. Therefore, the proposed ACC project activity is considered as additional.

Step 2 - Investment analysis

[37] https://www.mevzuat.gov.tr/MevzuatMetin/1.5.6446.pdf
[38] https://www.mevzuat.gov.tr/MevzuatMetin/1.5.5346.pdf
[39] https://www.mevzuat.gov.tr/MevzuatMetin/1.5.5627.pdf
[40] https://www.mevzuat.gov.tr/MevzuatMetin/1.3.6831.pdf
[41] https://www.mevzuat.gov.tr/MevzuatMetin/1.5.2872.pdf
[42] https://www.mevzuat.gov.tr/File/GeneratePdf?mevzuatNo=20235&mevzuatTur=KurumVeKurulusYonetmeligi&mevzuatTertip=5

This step aims to demonstrate that the proposed project activity is neither economically nor financially feasible without the revenue from the sale of ACCs. There is no available public funding or official development assistance for financing such projects in Turkey. The project has been financed through the owner company's resources. The expected average electricity generation has been taken as 110,354 MWh during this investment analysis.

Sub-step 2a - Determine appropriate analysis method

Tool 01 provides for three options regarding investment analysis, i.e.

I. simple cost analysis,
II. investment comparison analysis, and
III. benchmark analysis.

Simple cost analysis (Option I) is considered appropriate only if the project activity and the resultant alternatives generate no financial or economic benefits other than the income from the carbon trade. The proposed project activity and all alternatives generate income from electricity sales. Therefore, Option I is not applicable for the investment analysis.

Option II is also not applicable because no alternative investment is considered at issue.

Option III, i.e., benchmark analysis, is chosen for the proposed project's investment analysis.

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

First, an appropriate financial indicator must be determined to measure the economic attractiveness or feasibility of the proposed project activity. For the investment decision context of the project activity, the appropriate indicator is considered to be project Internal Rate of Return (IRR).

The investment decision for the capacity increase was made on 20/08/2015 when the contract with the turbine manufacturer was signed. A full overview of the most relevant project development milestones is provided in the table below.

Table 1. Milestones of the Project

Project Development Step	Date
Revision of grid connection	27/10/2008
EIA relief certificate	26/08/2013
Energy Yield Assessment	26/06/2014
Revision of generation license	01/04/2015
Investment decision: Turbine agreement	20/08/2015
Construction contract	12/01/2016
Provisional Acceptance & Commissioning	01/07/2016
Start of first crediting period	01/07/2016
End of first crediting period	30/06/2026

Tool 01 states that benchmarks can be derived from "[…] government bond rates, increased by a suitable risk premium to reflect the private investment and/or the project type, as substantiated by an independent (financial) expert or documented by official publicly available financial data […]".[43] The said values are used to determine the benchmark since there is no pre-determined IRR or any other financial indicator for the feasibility of wind power projects in Turkey at the project's investment decision date.

Thus, as a common means to evaluate the attractiveness of investment projects and compare them with possible alternatives, project IRR will be used for the proposed project activity.

An average project IRR value defined by the European Bank of Reconstruction and Development (EBRD) has been used for the benchmark analysis. EBRD is one of the most respected international financial institutions providing loans to Turkish renewable energy projects. The EBRD published its evaluation report for similar types of projects in Turkey in 2015.[44] According to the report, the average before-tax IRR of 27 projects in Turkey, that the EBRD finances, is 15%. Therefore, benchmark IRR has been taken as 15% in this project's investment analysis.

The applied benchmark was taken from EBRD Loan and provided to the Turkish Clean Energy sector, within the scope of the 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.

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

Table 2. Financial Indicators

[43] Tool 01 v.07, Section 4.3.4

[44] EBRD Operation Evaluation, Mid-Size Sustainable Energy Financing Facility, page 27, Table 6. https://www.ebrd.com/documents/evaluation/operation-evaluation-mid-size-sustainable-energy-financing-facility-midseff.pdf

Parameters	Value	Units	Source
Installed Capacity	30 MW	MW	Generation License
Operational lifetime	25	years	Tool 10
Net generation to be sold	107,779	MWh/yr	Energy Yield Assessment
Investment cost and O&M costs	Confidential	-	Items related to cost information will be submitted to the GCC verifier
Feed-in tariff & Market price estimation after 10 years	Until 2026 65.46 After 2026 41.70	EUR/MWh	https://www.epdk.gov.tr/Detay/DownloadDocument?id=JO0aAUcBJRM= and https://rapor.EPİAŞ.com.tr/rapor/xhtml/ptfSmfListeleme.xhtml

The technical and operational lifetime of the proposed project activity has been determined by utilizing Tool 10, which states that the default lifetime for onshore wind turbines is 25 years.

The project IRR (before tax) for the proposed project is calculated on the basis of expected cash flows – such as investment and operating costs and revenues from the sale of electricity. The parameters and values used for the IRR calculation are provided to the GCC Verifier during verification. The resulting IRR for the project is 8.60%.

The benchmark determined by the EBRD for similar projects is 15%. The selected benchmark exceeds the proposed project's IRR for design capacities; thus, rendering the project activity economically unattractive.

Sub-step 2d - Sensitivity analysis

A sensitivity analysis has been conducted to demonstrate that the preliminary conclusion deduced above is robust to reasonable variations in the critical assumptions. While the main parameter determining the revenue generated by the project activity includes revenue from electricity sales, the most dominant items of expenditure include investment and operating costs. Thus, a variation of the selected parameters should demonstrate the reliability of the IRR calculation. The sensitivity analysis is conducted with ±10% variations of the parameters mentioned above. The table below includes the possible scenarios for each parameter.

Table 3. Sensitivity Analysis

	Variance		
Parameters	**-10%**	**0%**	**10%**
Power Price	5.98%	8.60%	10.96%
Investment Cost	10.29%	8.60%	7.19%
Energy Yield	5.98%	8.60%	10.96%
Operating Cost	9.50%	8.60%	7.63%

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 is 10.96%, which is still much lower than the benchmark IRR.

Power Price

To reach the 15% project IRR benchmark, electricity prices should increase more than 10% from the assumed price. The feed-in-tariff price is already very high compared to the general market price and is not likely to increase. Thus, the 10% increase in feed-in-tariff is not expected to occur. Even if the power price increase by 10%, the project IRR reaches 10.96% and still cannot reach the benchmark of 15%.

Investment Cost

The project activity includes completed agreements for the investment, and costs have been realized in the financial analysis, which means that the equipment cost – which has the highest share in investment costs – is fixed. Thus, a decrease in these costs is highly unlikely to happen. Nevertheless, even if this were not the case, investment costs would need to decrease more than 10% for the project IRR to approach the benchmark slightly.

Energy Yield

To reach the benchmark IRR, the annual energy yield needs to increase more than 10 percent than the base electricity generation used in the financial model. The probability of this occurrence is very low. It is not likely for the project activity to generate 10% more energy to reach benchmark IRR. But even if the energy yield increase by 10%, the project IRR is still lower than the benchmark.

Operating Cost

Operating costs impact the project IRR but do not major changes. The variation percentage applied in the sensitivity analysis is also quite wide and extremely unlikely. For the project IRR to approach benchmark IRR, the annual cost of operating the project activity should decrease by more than 10%. Even if the operating costs decrease by 10%, the project IRR reaches 9.50%, which is still lower than the benchmark.

Step 3 - Barrier analysis

The investment analysis of *Step 2* completely demonstrates and explains the additionality of the proposed project activity. Hence, *Step 3* will be skipped per the applied methodology.

Step 4 - Common practice analysis

Tool 01 requires further demonstration of additionality by providing an "analysis to which extent similar activities to the proposed project activity have been implemented or are currently underway."[45] The tool also refers to Tool 24 for the application. The stepwise guidance of Tool 24 is elaborated below.

1) ***Calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed project activity.***

   The total capacity of the proposed project activity is 30 MW. Thus, any project that increased its capacity without the range of 15 MW to 50 MW is ruled out.

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

   i. *The projects are located in the applicable geographical area;* **– Turkey**
   ii. *The projects apply the same measure as the proposed project activity;* **– Renewable energy projects**
   iii. *The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity;* **– Wind power plants**
   iv. *The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas as the proposed project plant;* **– Electricity generation**
   v. *The capacity of output of projects is within the applicable capacity or output range calculated in Step 1;* **– Capacity addition between 15 MW and 45 MW**
   vi. *The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity.* **– Investment decision date (20/08/2015)**

The applicable geographical area has been described as "the entire host country" in Tool 24, making Turkey the relevant area for the proposed project activity. Based on the descriptions provided in the applied tool, the measure of the project activity has been narrowed down to "renewable energy projects" which use the same energy source (wind power) as the proposed project activity. The applicable output range was determined from official energy investment records of the Directorate General of Energy Affairs (of the Energy and Natural Resources Ministry)[46]. Since the proposed project activity's investment decision date was August 2015, the relevant timespan is 2015. For

[45] Tool 01 v.07, Section 4.5.2.

[46] https://enerji.gov.tr/eigm-raporlari
2013 - https://enerji.gov.tr//Media/Dizin/EIGM/tr/Raporlar/EY/2013.xls
2014 - https://enerji.gov.tr//Media/Dizin/EIGM/tr/Raporlar/EY/2014.xlsx
2015 - https://enerji.gov.tr//Media/Dizin/EIGM/tr/Raporlar/EY/2015.xlsx

conservativeness, the years 2013, 2014, and 2015 have been considered for this common practice analysis.

3) Within projects identified in Step 2, identify those that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Note their number N_{all}.

All projects complying with the conditions prescribed above are listed in the relevant excel document provided to the GCC Verifier. In this context, a total of 3 projects, which are not CDM or voluntary carbon projects, have been identified as N_{all}. The details are provided in the next step.

4) Within similar projects identified in Step 3, identify those that apply technologies that are different to the technology applied in the proposed project activity. Note their number N_{diff}.

The projects identified in Step 3 do not include projects with a different scale or technology than the proposed project activity. Therefore, $N_{diff} = 0$. The table below contains details of the N_{all} projects identified in the previous step.

Table 4. List of N_{all} Projects

Name of the Plant	Capacity in MW	Fuel Type	GS/VCS/GCC
Gökres 2 RES	35	Wind	-
Kıyıköy RES	27	Wind	-
Salman RES	20	Wind	-

The table demonstrates that the number of projects that have made capacity increases between 15 MW and 45 MW in 2013, 2014, and 2015, and that are not affiliated with any voluntary carbon program, and produces electricity from wind energy is 3. Thus, it can be concluded that $N_{all} = 3$.

5) *Calculate factor $F = 1 - N_{diff}/N_{all}$ representing the share of similar projects (penetration rate of the measure/technology) using a measure/technology similar to the measure/technology used in the proposed project activity that deliver the same output or capacity as the proposed project activity.*

$$F = 1 - N_{diff}/N_{all}$$
$$= 1 - 0/3$$
$$= 1$$

Outcome of Step 4

According to the applied tool, the project activity is considered common practice if the F factor is greater than 0.2 and the difference between N_{all} and N_{diff} is greater than 3.

For the proposed project, F=1 and N_{all}-N_{diff}=3. Thus, it can be concluded that the project is not a common practice within the applicable geographical area; therefore, it is additional.

B.6. Estimation of emission reductions

B.6.1. Explanation of methodological choices

The proposed project uses Turkey's Energy and Natural Resources Ministry's factsheet for the emission factors to measure estimated emission reductions. The publication demonstrates "Turkey's National Electricity Grid Emission Factor" for 2019 and includes Operating Margin (OM), Build Margin (BM), and Combined Margin (CM) emission factor values. To calculate these figures, the ministry bases the factsheet off of Clean Development Mechanism "Tool to calculate the emission factor for an electricity system" Version 07.

The data set used for the calculation of emission factors are as follows:

- Turkey's electricity generation, consumption, and loss statistics from TEİAŞ,
- Common Reporting Format (CRF) prepared in the scope of Turkey's National GHG Inventory Report and emission values for electricity generation (1.A1.a.i) from CRF tables,
- Chronological order of electricity generation plants' commissioning dates, their names, fuel types, installed power values, and electricity generation for the calculated year from TEİAŞ's Load Dispatch Department,
- Current status for carbon credit ownership from voluntary GHG standards,
- Efficiency figures for power plants are used from CDM's "TOOL9: Determining the baseline efficiency of thermal or electric energy generation systems."

The factsheet, which includes the calculated emission factors mentioned below, is the most recent one that the relevant highest authority in Turkey has determined and published at the closest date this PSF was prepared.

$OM = 0{,}7258$
$BM = 0{,}4153$
$CM = 0{,}6482$

Project emissions

The proposed project activity involves the generation of electricity by using wind power. Electricity generated via wind turbines does not result in GHG emissions. Thus, according to the applied methodology:

$$PE_y = 0$$

Leakage

ACM0002 describes this section as "[…] emissions potentially arising due to activities such as power

plant construction and upstream emissions from fossil fuel use […] are neglected."[47]

Therefore, the leakage emissions are quantified as "0."

Baseline emissions

Baseline emissions include only CO_2 emissions from electricity generation in fossil fuel-fired power plants displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:

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

where

BE_y = Baseline emissions in year y (tCO_2/yr)
$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)
$EF_{grid,CM,y}$ = Combined margin CO_2 emission factor for grid-connected power generation in year y calculated using the latest version of "TOOL07: Tool to calculate the emission factor for an electricity system" (tCO_2/MWh)

ACM0002 states that in the case of wind plants, it is assumed that the capacity addition does not significantly affect the electricity generated by existing plants and "electricity fed into the grid by the added power plants/units shall be directly metered and used to determine $EG_{PJ,y}$."[48]

Thus,

$$EG_{PJ,y} = EG_{PJ\_Add,y}$$

where

$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)
$EG_{PJ\_Add,y}$ = Quantity of net electricity generation supplied to the grid in year *y* by the project plant/unit that has been added under the project activity (MWh/yr)

B.6.2. Data and parameters fixed ex ante

Data / Parameter Table 1.

Data / Parameter:	$EF_{grid,CM,y}$
Methodology reference	Tool 07

[47] ACMOOO2 v.20, Section 5.6.
[48] ACM0002 v.20, Section 5.5.1.2.

Data unit	t CO_2/MWh
Description	Turkey's Energy and Natural Sources Ministry's factsheet, including the most recent emission factor values calculations, has been used for the proposed project activity's CM factor.
Measured/calculated /default	Calculated
Data source	Turkey's National Electric Grid Emission Factor https://bit.ly/3HDhL1j
Value(s) of monitored parameter	0,6482 tCO_2/MWh
Measurement/ Monitoring equipment (if applicable)	N/A
Measuring/reading/ recording frequency (if applicable)	Once in the crediting period
Calculation method (if applicable)	N/A
QA/QC procedures	Official data
Purpose of data	The data is utilized to calculate baseline emissions, which demonstrates the proposed project activity's contribution to SDG Target 13.3. The target is described as *"Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning."*[49]
Additional comments	N/A

B.6.3. Ex-ante calculation of emission reductions

Calculation of Operating Margin Emission Factor

For OM factor calculation, the chronological order of power generation plants from TEİAŞ Load Dispatch Department with fuel types and electricity generation for the calculated year were used as input data. By using all of the data which were mentioned above, the Turkish Energy and Natural Resources Ministry calculated $EF_{grid,OMsimple,y}$ as:

$$EF_{grid,OMsimple,y} = 0.7258\ t\ CO_2/MWh$$

Calculation of Build Margin Emission Factor

The ministry used input data concerning the chronological order of electricity generation plants' commissioning dates, their names, fuel types, installed power values, and electricity generation for

[49] https://unstats.un.org/sdgs/metadata/?Text=&Goal=13&Target=13.3

the calculated year to measure the BM emission factor. The following is the result:

$$EF_{grid,BM,y} = 0.4153\ t\ CO_2\ /MWh$$

Calculation of Combined Margin Emission Factor

Tool 07 "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." For wind and solar projects, the CM value is calculated by the ministry as follows:

$$EF_{grid,CM,y} = 0.6482\ t\ CO_2\ /MWh$$

The ministry's CM calculation is also in line with Tool 07, which formulates the calculation as:

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times\ w_{OM} + EF_{grid,BM,y} \times\ w_{BM}$$

where

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

According to the tool, for wind power generation activities, $w_{OM} = 0.75$ and $w_{BM} = 0.25$.[50]

$$EF_{grid,CM,y} = 0.7258 \times\ 0.75\ + 0.4153\ \times 0.25 = \mathbf{0.6482\ t\ CO_2\ /MWh}$$

Project emissions

The proposed project activity involves the generation of electricity by using wind power. Electricity generated via wind turbines does not result in GHG emissions. Thus, according to the applied methodology:

$$PE_y = 0$$

Leakage

ACM0002 describes this section as "[…] emissions potentially arising due to activities such as power plant construction and upstream emissions from fossil fuel use […] are neglected."[51]

Therefore, the leakage emissions are quantified as "0."

Baseline emissions

Baseline emissions include only CO_2 emissions from electricity generation in fossil fuel-fired power plants displaced due to the project activity. The methodology assumes that all project electricity

[50] Tool 07 v.07, Section 6.6.1.
[51] ACMOOO2 v.20, Section 5.6.

generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:

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

where

BE_y = Baseline emissions in year y (tCO_2/yr)
$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)
$EF_{grid,CM,y}$ = Combined margin CO_2 emission factor for grid-connected power generation in year y calculated using the latest version of "TOOL07: Tool to calculate the emission factor for an electricity system" (tCO_2/MWh)

ACM0002 states that in the case of wind plants, it is assumed that the capacity addition does not significantly affect the electricity generated by existing plants and "electricity fed into the grid by the added power plants/units shall be directly metered and used to determine $EG_{PJ,y}$."[52]

Thus,

$$EG_{PJ,y} = EG_{PJ\_Add,y}$$

where

$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)
$EG_{PJ\_Add,y}$ = Quantity of net electricity generation supplied to the grid in year *y* by the project plant/unit that has been added under the project activity (MWh/yr)

$$ER_y = BE_y = EG_{PJ,y} \times EF_{grid,CM,y} = 110{,}354\ MWh/yr \times 0.6482\ t\ CO_2/MWh$$

$$\boldsymbol{ER_y = 71{,}531\ t\ CO_2\ /\ yr}$$

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)
01/07/2016-31/12/2016	0	36,059	0	36,059
2017	0	71,531	0	71,531
2018	0	71,531	0	71,531
2019	0	71,531	0	71,531

[52] ACM0002 v.20, Section 5.5.1.2.

2020	0	71,531	0	71,531
2021	0	71,531	0	71,531
2022	0	71,531	0	71,531
2023	0	71,531	0	71,531
2024	0	71,531	0	71,531
2025	0	71,531	0	71,531
01/01/2026-30/06/2026	0	35,472	0	35,472
Total	**0**	**715,310**	**0**	**715,310**
Total number of crediting years	**10**			
Annual average over the crediting period	**0**	**71,531**	**0**	**71,531**

B.7. Monitoring plan

B.7.1. Data and parameters to be monitored

Data / Parameter Table 1.

Data / Parameter:	**$EG_{PJ\_Add,y}$**
Methodology reference	ACM0002 Version 20
Data unit	MWh/yr
Description	Quantity of net electricity generation supplied to the grid in year y by the project plant/unit that has been added under the project activity
Measured/calculated /default	Measured
Data source	Electricity meter readings on-site
Value(s) of monitored parameter	As indicated in the energy yield assessment report, the estimated annual generation forming the basis for the emission reduction calculation is 110,354 MWh.

<table>
<tr><td>Measurement/ Monitoring equipment</td><td>
<table>
<tr><td colspan="2"></td></tr>
<tr><td>Type of meter</td><td>EMH – LZQJ-XC (Two main meters)
EMH – LZQJ-XC (Two back-up meters)</td></tr>
<tr><td>Location of meter</td><td>On-site</td></tr>
<tr><td>Accuracy of meter</td><td>0.2S</td></tr>
<tr><td>Serial number of meter</td><td>Main meters:
#1: 8923715
#2: 8923685
Back-up meters:
#1: 8923684
#2: 8923686</td></tr>
<tr><td>Calibration frequency</td><td>Every 10 years</td></tr>
<tr><td>Date of Calibration/ validity</td><td>Main meters:
#1: 22/10/2019
#2: 11/10/2019
Backup meters:
#1: 11/10/2019
#2: 11/10/2019</td></tr>
<tr><td>Reference No. of Calibration Certificate</td><td>First Index Protocol (main meters)
First Index Protocol (back-up meters)</td></tr>
<tr><td>Calibration Status</td><td>Calibrated (main meters)
Calibrated (back-up meters)</td></tr>
</table>
</td></tr>
<tr><td>Measuring/reading/ recording frequency</td><td>Continuous measurement and monthly recording</td></tr>
<tr><td>Calculation method (if applicable)</td><td>Two main and two back-up meters on-site continuously measure the net electricity generation, which is recorded monthly. These meters measure the electricity transferred to the TEİAŞ substation. TEİAŞ seals these meters and intervention by the project owner is not possible. The fact that four meters are installed in a redundant manner keeps the uncertainty level of the only parameter for baseline calculation low. This parameter’s high data quality is not only in the interest of emission reduction monitoring but paramount for the business relationship between the plant operator and electricity buyers.

Monthly settlement notifications of EPİAŞ consist hourly electricity production and withdrawn from the grid. EPİAŞ reading will be used as a base datum on the other hand; electricity meter reading will be used to crosscheck the accuracy of the data. Authenticity will be increased by the aid of data crosschecks between EPİAŞ datum and electricity meter readings. This means that the main source is the EPİAŞ data. TEİAŞ notices are used to cross-check the EPİAŞ records. TEİAŞ sends an</td></tr>
</table>

	electronic spreadsheet that includes daily and monthly electricity generation and withdrawn amounts for each power plant. Thus, cross-check source is the TEİAŞ meter readings. Since the meters are reading electricity supplied to the system and withdrawn from the system separately, the net electricity amount provided to the grid is calculated by electricity supplied minus electricity withdrawn, which is taken from monthly settlement notifications. The above-described measurement method follows Article 81 of the official regulation "Electricity Market Balancing And Settlement Regulation. As mentioned, the data acquisition and procedures are in place. Furthermore, for the project activity, the current and voltage values and the electricity generated by each wind turbine are directly measured within site. The monitoring of electricity for the 10 wind turbines consists of four stages. The current transformers (4000/1 A) and voltage cables (660 V) - directly connected to the respective WTG – transmit the data to the calibrated MFR 500 multifunction relay. The generation data of each WTG is stored in each turbine's LPC (IPC) and is controlled by the NFC, which is the main controller. The data obtained from each turbine will be utilized to measure the ratio of the capacity addition to the whole plant's total capacity and to calculate the invoice-based generation of 30 MW by also taking transmission loss into account. According to calculations and cross-checking works carried out from the first commissioning of the project to present, there is a 2 to 3 percent difference between the sum of directly metered data of all turbines compared with the generation data recorded by TEİAŞ at the high voltage substation (which is on an invoice basis) due to the transmission and transformer losses. The net electricity generation of the 30 MW capacity addition – taking the transmission loss into account – will be calculated via the following calculation: $$\boldsymbol{X} = \frac{Monthly\ generation\ of\ 30\ MW\ without\ loss\ (directly\ metered\ by\ turbines)}{Monthly\ generation\ of\ 120\ MW\ without\ loss\ (directly\ metered\ by\ turbines)}$$ $$\boldsymbol{Monthly\ net\ generation\ of\ 30\ MW\ with\ loss} = \boldsymbol{X} * (120\ MW\ net\ generation\ metered\ by\ TEİAŞ\ (invoice\ basis\ data))$$
QA/QC procedures	According to the Article 2 of the Communiqué of Meters in Electricity Sector: "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, Trade Ministry is responsible from control and calibration of the meters.

	Clause (b) of Article 9 of the "Regulation of Metering and Testing of Metering Systems" of Ministry states that "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. Furthermore, according to Article 67 of this regulation, the calibration shall be done in calibration stations which have been tested and approved by Trade Ministry. Article 10 Clause (d) 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.
Purpose of data	Calculation of baseline emissions and emission reductions
Additional comments	N/A

Data / Parameter Table 2.

Data / Parameter:	**CO_2 Emissions**
Methodology reference	GCC Environment and Social Safeguards Standard Version 2
Data unit	t CO_2e/y
Description	Reduction of CO_2 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 the proposed project activity and the emission factor for the grid, 0.6482 t CO_2/MWh, provided by Energy and Natural Resources Ministry
Value(s) of monitored parameter	71,531 t CO_2e annually
Measurement/ Monitoring equipment	Calculated
Measuring/reading/ recording frequency	Continuous measurement and at least monthly recording
Calculation method (if applicable)	The net electricity supplied by the project activity will be continuously measured and recorded.
QA/QC procedures	N/A
Purpose of data	To assess the project activity's contribution SDG 13 Climate Change, which is accomplished by the production of clean renewable energy that result in the diminishing of CO_2 emissions. Therefore, the project activity 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	N/A

Data / Parameter Table 3.

Data / Parameter:	**$PM_{2.5}$ and PM_{10}**
Methodology reference	ACM0002 Version 20
Data unit	$\mu g/m^3$
Description	The project activity eliminates the increase of $PM_{2.5}$ and PM_{10} emissions which would have been released to the atmosphere by fossil fuel consumption, in the absence of the proposed project.
Measured/calculated /default	Calculated
Data source	-Air Pollution Report, 2020 Chamber of Environmental Engineers, Turkey https://www.cmo.org.tr/resimler/ekler/a9992ac36b8068a_ek.pdf -Annual development of Turkey's electricity generation by primary energy resources TEİAŞ https://webapi.TEİAŞ.gov.tr/file/f0803b71-8425-4b3b-9f60-0329d940d259?download
Value(s) of monitored parameter	$PM_{2.5}$ and PM_{10} emissions arise from thermal electricity generation. The proposed project activity, as a renewable energy power plant and one of the sources for cleaned energy, uses wind power to produce electricity without any emissions. Thus, the project activity will contribute to the reductions of both $PM_{2.5}$ and PM_{10} by replacing fossil fuel sourced plants.
Measurement/ Monitoring equipment	Calculated
Measuring/reading/ recording frequency	Once in each monitoring period
Calculation method (if applicable)	To calculate the PM emission reduction contribution of the project activity 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 Periodical Reports of Chamber of Environmental Engineers of Turkey and TEİAŞ. Those are the most up-to-date documents that recent data can be obtained. Detailed calculations can be found in the "PM" sheet of the ER Calculation spreadsheet.
QA/QC procedures	N/A
Purpose of data	
Additional comments	N/A

Data / Parameter Table 4.

Data / Parameter:	**Water Quality and Quantity**
Methodology reference	ACM0002 Version 20
Data unit	m^3
Description	Discharge of cooling water has been prevented. The project activity replaces plants providing electricity to the grid via fossil-fuel based generation, which cause GHG emissions. The proposed project contributes to the conservation of water by replacing the consumption of the fossil-fuel sourced energy, decreasing the amount of wastewater to be discharged to the environment.
Measured/calculated /default	Calculated
Data source	Monthly meter readings, data from TEİAŞ
Value(s) of monitored parameter	For baseline, avoidance of cooling wastewater has been calculated as 3,408.7 (x1000 m3/year)
Measurement/ Monitoring equipment	Calculated
Measuring/reading/ recording frequency	Once in each monitoring period
Calculation method (if applicable)	The project activity's net electricity generation will be multiplied with the discharge intensity of cooling water.
QA/QC procedures	N/A
Purpose of data	To assess the project activity's contribution to SDG Target 6.4. *"By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity."*
Additional comments	N/A

Data / Parameter Table 5.

Data / Parameter:	**Quantitative Employment**
Methodology reference	GCC Environment and Social Safeguards Standard, Version 2
Data unit	Number of employees hired during the project activity's operation
Description	Creation of new employment opportunities
Measured/calculated /default	Calculated
Data source	Official employment records from the state
Value(s) of monitored parameter	Employment of 22 people

Measurement/ Monitoring equipment	N/A
Measuring/reading/ recording frequency	Per annum
Calculation method (if applicable)	Official employment records will be monitored to confirm the number of employees.
QA/QC procedures	N/A
Purpose of data	To assess the contribution to SDG 8 Economic Growth Target 8.5 “By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities and equal pay for work of equal value”.
Additional comments	-

Data / Parameter Table 6.

Data / Parameter:	**Employee trainings**
Methodology reference	GCC Environment and Social Safeguards Standard, Version 2
Data unit	N/A
Description	Trainings given to employees regarding health, safety and job-related areas
Measured/calculated /default	N/A
Data source	Training records
Value(s) of monitored parameter	All employees have gone through the necessary trainings required by their jobs
Measurement/ Monitoring equipment	Training records
Measuring/reading/ recording frequency	Per Annum
Calculation method (if applicable)	N/A
QA/QC procedures	N/A
Purpose of data	Compliance with GCC Standard’s Environment and Social Safeguards Guide
Additional comments	-

Data / Parameter Table 7.

Data / Parameter:	**Noise Pollution**
Methodology reference	GCC Environment and Social Safeguards Standard, Version 2
Data unit	Decibels (dBA)
Description	Prevention and control of environmental noise pollution
Measured/calculated /default	N/A
Data source	Interview with locals from nearby villages and site personnel
Value(s) of monitored parameter	No noise pollution is created during the operation phase of the project activity
Measurement/ Monitoring equipment	Interview with locals from nearby villages and site personnel
Measuring/reading/ recording frequency	At each monitoring period
Calculation method (if applicable)	Surveying
QA/QC procedures	N/A
Purpose of data	Compliance with GCC Standard's Environment and Social Safeguards Guide
Additional comments	-

Data / Parameter Table 8.

Data / Parameter:	**Protecting/enhancing species diversity**
Methodology reference	GCC Environment and Social Safeguards Standard, Version 2
Data unit	N/A
Description	Protection and improvement of species diversity
Measured/calculated /default	N/A
Data source	Ornithology reports and interviews with plant employees and locals during site visits
Value(s) of monitored parameter	No disturbance to the regional habitat is described in the baseline scenario
Measurement/ Monitoring equipment	Ornithology reports and interviews with plant employees and locals during site visits
Measuring/reading/ recording frequency	Per Annum

Calculation method (if applicable)	Surveying
QA/QC procedures	N/A
Purpose of data	Compliance with GCC Standard's Environment and Social Safeguards Guide
Additional comments	-

Data / Parameter Table 9.

Data / Parameter:	**Solid waste Pollution from plastic**
Methodology reference	GCC Environment and Social Safeguards Standard, Version 2
Data unit	N/A
Description	Solid waste Pollution from Plastics
Measured/calculated /default	N/A
Data source	Photos of garbage bins
Value(s) of monitored parameter	Proper disposal of solid waste
Measurement/ Monitoring equipment	Solid waste generated via domestic use and the machinery is collected in separate closed-lid bins and then collected by the Municipality.
Measuring/reading/ recording frequency	Per monitoring period
Calculation method (if applicable)	Photos of garbage bins
QA/QC procedures	N/A
Purpose of data	Compliance with GCC Standard's Environment and Social Safeguards Guide
Additional comments	-

Data / Parameter Table 10.

Data / Parameter:	**Solid waste Pollution from Hazardous wastes**
Methodology reference	GCC Environment and Social Safeguards Standard, Version 2
Data unit	N/A
Description	Solid waste Pollution from Hazardous wastes
Measured/calculated /default	N/A
Data source	Photos of garbage bins

Value(s) of monitored parameter	Proper disposal of hazardous wastes
Measurement/ Monitoring equipment	Hazardous wastes will be transported to the processing and disposal facilities by licensed transporters.
Measuring/reading/ recording frequency	Per monitoring period
Calculation method (if applicable)	Records for the transfer of the waste will be evidence of the disposal method.
QA/QC procedures	N/A
Purpose of data	Compliance with GCC Standard's Environment and Social Safeguards Guide
Additional comments	-

Data / Parameter Table 11.

Data / Parameter:	**Educational Services**
Methodology reference	GCC Environment and Social Safeguards Standard, Version 2
Data unit	N/A
Description	Educational services improved or not
Measured/calculated /default	N/A
Data source	Bank receipts of scholarships provided to students
Value(s) of monitored parameter	Using the income from the project for the benefit of university students with insufficient financial situation and increasing participation rate of adults in education
Measurement/ Monitoring equipment	Contributing to university education and bringing them into society by providing scholarship students whose financial situation is not sufficient
Measuring/reading/ recording frequency	Per monitoring period
Calculation method (if applicable)	Bank receipts of scholarships provided to students
QA/QC procedures	N/A
Purpose of data	Compliance with GCC Standard's Environment and Social Safeguards Guide
Additional comments	-

Data / Parameter Table 12.

Data / Parameter:	Shadow Flicker
Methodology reference	GCC Environment and Social Safeguards Standard, Version 2
Data unit	N/A
Description	Shadow flicker occurs when the sun passes behind the wind turbine and casts a shadow.
Measured/calculated /default	N/A
Data source	Local people in the nearest village
Value(s) of monitored parameter	The local people will be interviewed and asked whether they are experiencing any shadow flickering effects.
Measurement/ Monitoring equipment	Interview with the locals via the village's head
Measuring/reading/ recording frequency	Per monitoring period
Calculation method (if applicable)	Surveying
QA/QC procedures	N/A
Purpose of data	Compliance with GCC Standard's Environment and Social Safeguards Guide
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, 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 İklim ve Enerji Ltd. Şti. as the **Bergama RES Enerji Üretim A.Ş.'s** carbon consultant. In other words, the project owner has formulated a Monitoring Team to ensure proper and continuous

monitoring of the emission reductions and the performance of turbines and generation of power.

To ensure trouble-free operation of all the wind turbines, **Bergama RES Enerji Üretim A.Ş.** has signed a comprehensive Operation and Maintenance agreement with the turbines' manufacturer, Nordex. Per this agreement, Nordex would be responsible for the operation and maintenance of the wind turbines. The maintenance and service personnel are qualified and are trained by Nordex.

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

Measurement Arrangements and Procedures

The proposed project activity encompasses a capacity addition to an existing power plant. The existing power plant's 36 turbines and the capacity increase's 10 turbines share a common infrastructure. This infrastructure includes medium voltage transmission lines and a high voltage substation. The use of the same infrastructure complies with the relevant laws and regulations in Turkey and is also part of conditions to increase capacity.

The metering system of TEİAŞ is located at the high voltage substation and measures the total electricity generation of all the 46 turbines, as a single point of measurement – which is part of the project owner's interconnection agreement with the utility. The generation measured with this system also includes medium and high voltage transformers and cable losses on site and fed into the grid. The data from the metering system is measured by TEİAŞ and used at EPİAŞ (or "EXIST" in English - Energy Exchange Istanbul).

Two main and two back-up meters on-site continuously measure the net electricity generation, which is recorded monthly. These meters measure the electricity transferred to the TEİAŞ substation. TEİAŞ seals these meters and intervention by the project owner is not possible. The fact that four meters are installed in a redundant manner keeps the uncertainty level of the only parameter for baseline calculation low. This parameter's high data quality is not only in the interest of emission reduction monitoring but paramount for the business relationship between the plant operator and electricity buyers.

Monthly settlement notifications of EPİAŞ consist hourly electricity production and withdrawn from the grid. EPİAŞ reading will be used as a base datum on the other hand; electricity meter reading will be used to crosscheck the accuracy of the data. Authenticity will be increased by the aid of data crosschecks between EPİAŞ datum and electricity meter readings. This means that the main source is the EPİAŞ data. TEİAŞ notices are used to cross-check the EPİAŞ records. TEİAŞ sends an electronic spreadsheet that includes daily and monthly electricity generation and withdrawn amounts for each power plant. Thus, cross-check source is the TEİAŞ meter readings.

Since the meters are reading electricity supplied to the system and withdrawn from the system separately, the net electricity amount provided to the grid is calculated by electricity supplied minus electricity withdrawn, which is taken from monthly settlement notifications. The above-described measurement method follows Article 81 of the official regulation "Electricity Market Balancing And Settlement Regulation.

Table 5. Details of meters on project site

Brand	Meter	Type	Serial Number
EMH	Main 1	LZQJ-XC	8923715
EMH	Main 2	LZQJ-XC	8923685
EMH	Back-up 1	LZQJ-XC	8923684
EMH	Back-up 2	LZQJ-XC	8923685

As mentioned, the data acquisition and procedures are in place. Furthermore, for the project activity, the current and voltage values and the electricity generated by each wind turbine are directly measured within site. The monitoring of electricity for the 10 wind turbines consists of four stages. The current transformers (4000/1 A) and voltage cables (660 V) - directly connected to the respective WTG – transmit the data to the calibrated MFR 500 multifunctional relay. The generation data of each WTG is stored in each turbine's LPC (IPC) and is controlled by the NFC, which is the main controller. The data obtained from each turbine will be utilized to measure the ratio of the capacity addition to the whole plant's total capacity and to calculate the invoice-based net generation of 30 MW by also taking transmission loss into account.

According to calculations and cross-checking works carried out from the first commissioning of the project to present, there is a 2 to 3 percent difference between the sum of directly metered data of all turbines compared with the generation data recorded by TEİAŞ at the high voltage substation (which is on an invoice basis) due to the transmission and transformer losses.

The net electricity generation of the 30 MW capacity addition – taking the transmission loss into account – will be calculated via the following calculation:

$$\boldsymbol{X} = \frac{Monthly\ generation\ of\ 30\ MW\ without\ loss\ (directly\ metered\ by\ turbines)}{Monthly\ generation\ of\ 120\ MW\ without\ loss\ (directly\ metered\ by\ turbines)}$$

$$\boldsymbol{Monthly\ net\ generation\ of\ 30\ MW\ with\ loss} = \boldsymbol{X} * (120\ MW\ net\ generation\ metered\ by\ TE\dot{I}A\Ş\ (invoice\ basis\ data))$$

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 Aliağa 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. This data is also used for the calculation of electricity supplied and consumed by WTGs.

The net electricity generation by the WTGs of the project activity shall be calculated by:

$$\textbf{Net electricity generation amounts by project activity} = \text{Total electricity generated by project activity} - \text{Total electricity consumed by project activity}$$

Quality Control and Quality Assurance Procedures

Calibration Procedures

Per the relevant regulation, the meters shall be calibrated in every 10 years. The current and voltage transformers, on the other hand, have a long life cycle and only need calibration once in every 25 years.

Data collection and archiving

The daily data on electricity generation from WTGs at the site is collected in electronic form. Monthly Aliağa WPP statements are collected and maintained in hard copy, and archived electronically. The project owner 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

The project activity's start date is 01/07/2016, when it first started generating electricity and supplying it to the national grid.[53]

C.2. Expected operational lifetime of the Project Activity

The operational lifetime of the project is 25 years as per Tool 10.[54]

C.3. Crediting period of the Project Activity

C.3.1. Fixed crediting period

The crediting period is fixed with 10 years in line with current GCC regulations.

C.3.2. Start date of the crediting period

The start date of the crediting period is 01/07/2016, after the project activity started generating electricity and supplying to the national grid.

[53] Per provisional acceptance document
[54] Tool 10 v.01, page 4.

C.3.3. Duration of the crediting period

The first crediting period is between 01/07/2016 and 30/06/2026.

Section D. Environmental impacts

D.1. Analysis of environmental impacts

Please refer to *Section E.*

D.2. Environmental impact assessment

The project activity complies with all relevant laws and regulations in Turkey. In line with these regulations, the proposed project activity was granted with an EIA relief by the Environment and Urbanization Ministry on 26/08/2013.

Figure 8. Relief from EIA duty

T.C.
İZMİR VALİLİĞİ
ÇEVRE VE ŞEHİRCİLİK İL MÜDÜRLÜĞÜ

T.C. ÇEVRE VE ŞEHİRCİLİK BAKANLIĞI

Karar Tarihi : 26/08/2013
Karar No : 1389

ÇEVRESEL ETKİ DEĞERLENDİRME BELGESİ

17 Temmuz 2008 tarih ve 26939 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren Çevresel Etki Değerlendirmesi Yönetmeliği'nin Ek-II Listesinde yer alan **"Aliağa Rüzgar Enerji Santrali Kapasite Artışı (12*2,5MW=30MW kapasite artışı, toplam 120MW kurulu gücünde)"** ile ilgili olarak inceleme değerlendirme yapılmış ve Proje Tanıtım Dosyasında çevresel etkilere karşı alınması öngörülen önlemler yeterli görülmüştür. Ayrıca ÇED Raporu hazırlanmasına gerek bulunmadığı tespit edilmiş olup, söz konusu projeye ÇED Yönetmeliğinin 17.maddesi gereğince Valiliğimizce "**Çevresel Etki Değerlendirmesi Gerekli Değildir Kararı**" verilmiştir.

Fatih Ahmet KURT
Vali a.
Vali Yardımcısı

Proje Sahibi : Bergama RES Enerji Üretim A.Ş.
Projenin Yeri : Bergama İlçesi, İsmailli, Atçılar ve Seklik Köyü yakınları

Section E. Environmental and social safeguards

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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[55] 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												

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

Environment *- Air*	*SO_x emissions*	N/A	20 µg/m^3 per annum [56]	N/A	-	-	N/A	N/A	N/A	N/A	N/A	N/A
	NO_x emissions	N/A	40 µg/m^3 per annum	N/A	-	-	N/A	N/A	N/A	N/A	N/A	N/A
	CO_2 emissions	The project reduces CO_2 emissions since it reduces the amount of fossil fuels used. In the absence of the project activity, the same amount of electricity would be generated from fossil fuels and cause air pollution.	N/A	N/A	-	-	N/A	N/A	N/A	The electricity generated by the project activity will be continuously measured and the relevant CO_2 emission reductions will be calculated according to the applied methodology.	The electricity generation will be monitored.	+1
	CO emissions	N/A	10 µg/m^3 per annum	N/A	-	-	N/A	N/A	N/A	N/A	N/A	N/A
	Suspended particulate matter (SPM) emissions	With the implementation of the project activity, the annual mean levels of PM 2.5 and PM 20 emissions	For PM10 40 µg/m3. There are no currently set limits for PM2.5.[57]	N/A	-	-	N/A	N/A	N/A	The amount of PM2.5 and PM10 emissions decreased will be monitored.	As known, fossil fuel emissions are secondary sources of PM2.5 and PM10 in the cities. Since the project	+1

[57] Regulation for the Assessment and Management of Air Quality
https://www.mevzuat.gov.tr/File/GeneratePdf?mevzuatNo=12188&mevzuatTur=KurumVeKurulusYonetmeligi&mevzuatTertip=5

		are reduced.									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. Corresponding PM2.5 reduction for the project activity was calculated as 0.02 µg/m3 while the corresponding PM10 reduction was found as 0.03 µg/m3 for baseline, annually.	
	Fly ash emissions	N/A	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	N/A

	Odor emissions	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	N/A
	Noise Pollution	The wind turbines may cause noise pollution during operation. However, the sound levels of the wind turbines are lower than the limit determined in the relevant regulation. The nearest settlement is in the İsmailli Village located some 910 meters from T40 turbine. The sound level that will take place at a near 1-kilometer distance is 35,16 Db(A).[58]	The noise limits for: daytime= 70 dB(A) Evening= 65 dB(A) Night= 60 dB(A).[59]	-	Harmless	-	N/A	N/A	N/A	Interviews with locals will be conducted and used as a method for monitoring.	Because the distance between the nearest settlement and turbine is 900 meters, the transmitted noise is much below the regulated limit. It is expected that the environmental noise caused by the proposed project activity will be significantly low.	+1
	Shadow Flicker	Shadow flicker occurs when the sun passes	No legislation in Turkey regulates or	N/A	-	-	N/A	N/A	N/A	Interviews with locals will be conducted and used	Since the nearest settlement to the project site	+1

[58] Project Introduction Document, page 70, Table 43.

[59] Regulation on Assessment and Management of Environmental Noise, Annex VII, Table 4. https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=14012&MevzuatTur=7&MevzuatTertip=5

		behind the wind turbine and casts a shadow. As the rotor blades rotate, shadows pass over the same point causing an effect coined as "shadow flicker." It may become a problem when potentially sensitive receptors are located nearby or have a specific orientation to the wind energy facility.	provides a guidance regarding the shadow flicker effect wind turbines.							as a method for monitoring .	is more than 500 meters away, the problem is not expected to take place during the plant's operation. But interviews will be conducted with the locals to see if they are experiencing any shadow flickering effects.	
Environment - *Land*	*Solid waste Pollution from Plastics*	Over 20 people are working at the project site, which leads to the generation of solid wastes due to domestic use. These wastes are properly stored and disposed.	According to the Regulation for Waste Management, domestic solid wastes must be collected in closed-lid bins and then get disposed by the	N/A	-	-	N/A	N/A	N/A	Photos of garbage bins' will be provided.	Solid waste generated via domestic use and the machinery is collected in separate closed-lid bins and then collected by the Municipality.	+1

			municipality.[60]									
	Solid waste Pollution from Hazardous wastes	Oil waste may be generated at the project site. Waste oil is disposed via cooperation with licensed recycling firms.	According to the Regulation for Waste Oil Management, these wasted must be collected by licensed recycling firms.[61]	-	Harmless	-	N/A	N/A	N/A	Records for the transfer of the waste will be evidence of the disposal method.	Hazardous wastes will be transported to the processing and disposal facilities by licensed transporters. Records of the transfer will prove the disposal of the wastes.	+1
	Solid waste Pollution from Bio-medical wastes	No medical waste is generated at the project site.	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	N/A
	Solid waste Pollution from E-wastes	No e-waste is generated at the project site.	N/A	-	-	-	N/A	N/A	N/A	N/A	N/A	N/A
	Solid waste Pollution from Batteries	No battery waste is generated at the project site.	N/A	-	-	-	N/A	N/A	N/A	N/A	N/A	N/A
	Solid waste Pollution from end of life	N/A	N/A	-	-	-	N/A	N/A	N/A	N/A	N/A	N/A

[60] Regulation for Waste Management, https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=20644&MevzuatTur=7&MevzuatTertip=5

[61] Regulation for Waste Oil Management, https://www.mevzuat.gov.tr/File/GeneratePdf?mevzuatNo=34051&mevzuatTur=KurumVeKurulusYonetmeligi&mevzuatTertip=5

	products/ equipment											
	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	N/A
	Soil erosion	N/A	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	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	N/A
	Water Consumption from ground and other sources	No ground water is consumed for the project activity.	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	N/A
	Generation of wastewater	The project activity generates wastewater due to domestic use but is properly disposed.	According to the Regulation on Water Pollution Management[62], wastewater produced by employee during the plant's operation	N/A	Harmless	-	N/A	N/A	N/A	Wastewater transfer records will prove the disposal of wastewater.	The generation of the wastewater due to domestic use within the plant is deemed as harmless; as the project owner disposes	+1

[62] Regulation on Water Pollution Management
https://www.mevzuat.gov.tr/File/GeneratePdf?mevzuatNo=7221&mevzuatTur=KurumVeKurulusYonetmeligi&mevzuatTertip=5

			shall be collected in an impermeable septic tank. Later, the wastewater shall be periodically transferred to relevant treatment facilities.								of the wastewater with proper methods that are in line with the current laws and regulation in the Host Country.	
	Wastewater discharge without/with insufficient treatment	The project does not cause any wastewater discharge without treatment.	N/A	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 activity includes electricity generation from wind power and thus do not lead to water pollution of surface and groundwater and other water bodies.	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	N/A
Environment – *Natural Resources*	*Conserving mineral resources*	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	N/A
	Protecting/ enhancing plant life	No plant species listed in the	Bern Conventio	N/A	-	-	N/A	N/A	N/A	N/A	N/A	N/A

		Bern Convention's Annex I that need to be put under protection exist at the project site.	n, IUCN criteria									
	Protecting/ enhancing species diversity	There may be harmful effects for birds and bats due to turbine operation.	IUCN criteria	-	Harmless	-	N/A	N/A	N/A	The site personnel will patrol and see if there are any bird and bat carcasses or any negative impact of the turbines on the said species.	According to two ornithology reports, one prepared after the investment decision date[63] and the other prepared after the construction of the turbines[64], the capacity addition do not pose a threat to the bats and birds and is not expected to do any harm to them.	+1
	Protecting/ enhancing forests	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	N/A
	Protecting/ enhancing other depletable	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	N/A

[63] Ornithology Report, Autumn 2015, page 121-123.
[64] Ornithology Report, Spring 2016, page 137- 138.

	natural resources											
	Conserving energy	N/A	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 clean wind energy as stated in the baseline scenario.	No legal limit exists.	N/A	-	-	N/A	N/A	N/A	The electricity generated from wind power will be monitored throughout the crediting period.	The electricity generated by the project activity will be continuously measured and the related CO_2 emission reductions will be calculated in accordance with 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	N/A
	Others	N/A	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: +9	
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[65] 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 employment opportunities during the	All workers have been employed in line with the Labor Law.[66]	N/A	-	-	N/A	N/A	N/A	Official employment records of the workers will be	As one of the benefits of the proposed project,	+1

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

[66] Labor Law
https://www.mevzuat.gov.tr/MevzuatMetin/1.5.4857.pdf

		operation period. The project currently provides long-term employment to 22 people.								monitored from the Social Security Institution (SGK) throughout the crediting period.	the income levels of local people have increased. Per the Law on Social Security and Public Health Insurace, it is illegal to employ workers without social security.[67] Thus, the social security records prove the employment opportunities created by the project owner.	
	New short-term jobs (< 1 year) created/ lost	The project activity provided short-term employment opportunities during the construction phase.	All workers were employed in line with the Labor Law.	N/A	-	-	N/A	N/A	N/A	The project's construction was implemented by a qualified construction firm, which was contracted by the project owner. The project	N/A	N/A

[67] Law on Social Security and Public Health Insurance
https://www.mevzuat.gov.tr/mevzuatmetin/1.5.5510.pdf

										owner does not have access to the records of short-term employment. Thus, this parameter will not be scored.		
	Sources of income generation increased / reduced	The project activity has provided income generation.	All workers were employed in line with the Labor Law and Law on Social Security and Public Health Insurace.	N/A	-	-	N/A	N/A	N/A	The project activity has benefitted the income generation of the locals. Per the Law on Social Security and Public Health Insurace, it is illegal to employ workers without social security.	According to Labor Law and Social Security Law, employers are obliged to insure their employees for the duration of their employment. The insurance records are evidence that the employer contribute to the income generation in scope of the project activity.	+1
Social - *Health & Safety*	*Disease prevention*	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	N/A
	Reducing / increasing accidents	Occupational accidents can happen	Employees have received		Harmless	-	N/A	N/A	N/A	Records of employees'	According to the HSE Law, the	+1

		within the scope of the project. However, necessary health and safety trainings have been provided to the employees, to minimize the risk of accidents.	the necessary safety trainings in line with the Law on Occupational Health and Safety.[68]							participations to the HSE trainings will be submitted for proof of attendance.	employer is obliged to provide the health and safety training to their employees. Further proof is provided with the documented emergency drill protocol.	
	Reducing / increasing crime	N/A	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	N/A
	Reducing / increasing indoor air pollution	N/A	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	N/A
	Sanitation and waste management	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	N/A
	Other health and safety issues	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	N/A

[68] Law on Occupational Health and Safety
https://www.mevzuat.gov.tr/MevzuatMetin/1.5.6331.pdf

Social - *Education*	*Job related training imparted or not*	The project owner provides job-related trainings for special positions.	-	N/A	-	-	If need be, the employee may provide the employer with job-related training to increase their skills and capabilities.	N/A	N/A	According to Principles and Regulations for Occupational Health and Safety Training of Employees, all employees working in Turkey must be given mandatory health and safety trainings by their employers.[69] The employers are obliged to provide the trainings.	According to the HSE Law, the employer is obliged to provide trainings to its employees. In this sense, trainings records can be considered as proof.	+1
	Educational services improved or not	The project owner provides scholarships to students.	-	N/A	-	-	Contributing to university education and bringing them into society by providing scholarship students whose financial situation is not sufficient	N/A	N/A	Bank receipts of scholarships granted to students.	Using the income from the project for the benefit of university students with insufficient financial situation and increasing participation rate of	+1

[69] Principles and Regulations for Occupational Health and Safety Training of Employees
https://www.mevzuat.gov.tr/File/GeneratePdf?mevzuatNo=18371&mevzuatTur=KurumVeKurulusYonetmeligi&mevzuatTertip=5

											adults in education	
	Project-related knowledge disseminati on effective or not	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	N/A
	Other educational issues	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	N/A
Social - *Welfare*	*Improving/ deterioratin g working conditions*	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	N/A
	Community and rural welfare	Local people have benefitted from the employment opportunitie s and the correspondi ng income generation as a positive impact of the project activity.	Labor Law	N/A	-	-	N/A	N/A	N/A	Personnel working at the site will be interviewe d regarding the job opportuniti es.	The fact that employees working at the site are mostly local people is an indicator of this parameter. Their employme nt records may be seen as proof of this assessme nt.	+1
	Poverty alleviation (more people above poverty level)	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	N/A
	Improving / deterioratin	Employment opportunitie	Labor Law	N/A	-	-	N/A	N/A	N/A	Site personnel	The fact that the	+1

	g wealth distribution/ generation of income and assets	s provided to locals resulted in a higher income generation.								will be interviewed on job opportunities.	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.	
	Increased or / deteriorating municipal revenues	N/A	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	N/A
	Reduced / increased traffic congestion	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	N/A N/A
	Other social welfare issues	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:	**+7**
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 corresponding 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	SDG Target 4.3. "By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university." Related Indicator: 4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex	Yes	Contributing to university education and bringing them into society by providing scholarship students whose financial situation is not sufficient.	Giving scholarship to 68 students to provide them education	Increasing the number of university students	Using the income from the project for the benefit of university students with insufficient financial situation and increasing participation rate of adults in education	Bank receipt of students getting scholarship	Giving scholarship to university students are made regularly.	Yes
Goal 5. Achieve gender equality and	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

empower all women and girls									
Goal 6. Ensure availability and sustainable management of water and sanitation for all	*6.4.* By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity *6.4.1.* Change in water use efficiency over time	Yes	Electricity generation from wind does not use water in appreciable amounts and does not pose a direct systematic impact on water quality. This stands in contrast to thermal power plants, which require water for cooling. Therefore, this project provides a significant avoidance of water use and thus protects the environment.	The project activity avoids 3,408.7 (x1000 m^3/year) of wastewater discharge annually.	*6.4.1* Change in water use efficiency over time	Improved access to clean water and to lower water scarcity will be achieved as wind-based renewable energy systems need less water than thermal power plants and the extraction and transport of fossil fuels often leads to spills and leaks contaminating water resources. Hence, the resulting decline in the use of fossil fuels for energy generation has a positive impact on water availability.	Monitor the amount of wastewater discharge avoidance as a result of the project activity per annum.	The project activity has been supplying clean renewable energy to the grid since 2016. The project owner has been complying with the targeted SDGs and the project's implementation is going on without any issues. .	Yes
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	*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. *7.2.1* Renewable energy share in the total	Yes	The project activity provides 30 MW installed capacity of renewable energy and will deliver up to 110,354 MWh zero-emission electricity to the national grid per annum.	To provide 110,354 MWh clean energy annually.	*7.2.1* Renewable energy share in the total final energy consumption.	The project increases the renewable energy share in Turkey's energy production mix. It provides 110.3 GWh annual clean energy to the grid. The wind power plant directly contributes to the SDG target, because the project activity delivers renewable energy which would otherwise be provided by fossil-fuel	Calculate the share of installed capacity from renewable energy. The net electricity supplied to the grid is monitored through the meters at the project site. The meters are under supervision of the relevant state body and cannot be	The project activity has been supplying clean renewable energy to the grid since 2016. The project owner has been complying with the targeted SDGs and the project's implementation is going on without any issues.	Yes

	final energy consumption.					dominated grid-connected power plants.	interfered with by the project owner.		
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	*8.5.* By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value *8.5.1* Average hourly earnings of employees by sex, age, occupation and persons with disabilities	Yes	In general, renewables create more jobs and decent and safer jobs than fossil fuel technologies. The project activity created short-term job opportunities and continues to provide long-term employment to over 20 people, while protecting labour rights and promoting a safe and secure working environment. The project activity also supports a transition to a low-carbon society while boosting economic productivity through its technology.	The project activity has created at least 22 permanent jobs in the renewable energy sector with contribution to the local economy as many employees are from the local community. During the construction phase, the project activity provided short-term employment to 61 people.	*8.5.1* Average hourly earnings of employees by sex, age, occupation, and persons with disabilities	The project activity directly contributes to the achievement of the SDG target because it promotes the increase of employment opportunities for the local community and crease short and long-term employment to dozens of workers, while providing a safe working environment.	Monitor the official employment records.	The project owner has been operating the plant since 2016 and complies with the SDG targets so far. The project owner also complied with the SDG targets during the construction phase.	Yes
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	*9.4* By 2030, upgrade infrastructure and retrofit industries to make them sustainable with increased resource-use efficiency and greater adoption of clean and environment ally sound technologies and industrial	Yes	As a renewable energy power generation facility, the project activity supports advanced industrialization by providing zero GHG and non-polluting clean electricity. It also contributes to the acceleration of renewable energy technologies' deployment by supporting technology improvement and also integrating	The project activity supplies an annual electricity generation of 110,354 MWh to the national grid by avoiding 71,531 t CO_2 annually. This green energy provided from wind power promotes clean growth opportunities and helps ensure a just and sustainable transition for communities. The project activity also	*9.4.1* CO_2 emission per unit of value added	By generating 110,354 MWh of clean electricity per year and consequently avoiding 71,531 t CO_2, the project activity directly contributes to the targeted SDGs as it successfully deploys renewable energy technologies which promote innovations for all parts of the value chain. The project	The net electricity supplied to the grid is monitored through the meters at the project site. The meters are under supervision of the relevant state body and cannot be interfered with by the project owner.	The project activity has been supplying clean renewable energy to the grid since 2016. The project owner has been complying with the targeted SDGs and the project's implementation is going on without any issues. .	Yes

	processes, with all countries taking action in accordance with their respective capabilities *9.4.1* CO_2 emission per unit of value added		those innovations into the energy system, which essentially enhances innovation and sustainability of the energy industry.	enables the development of innovative and sustainable energy infrastructure by the deployment of renewable energy technologies.		also stimulates resilient and sustainable infrastructure development, fosters innovation, and promotes resilient industry growth.			
Goal 10. Reduce inequality within and among countries									
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable	*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. *11.6.2* Annual mean levels of fine particulate e matter (e.g. $PM_{2.5}$ and PM_{10}) in cities (population weighted)	Yes	The project activity decreases the amount of $PM_{2.5}$ and PM_{10} emissions in the cities as it replaces thermal plants and clear synergies with reducing air pollution.	Corresponding $PM_{2.5}$ reduction for the project activity was calculated as 0.02 µg/m3 while the corresponding PM_{10} reduction was found as 0.03 µg/m^3 for baseline, annually.	*11.6.2* Annual mean levels of fine particular matter (e.g. $PM_{2.5}$ and PM_{10}) in cities (population weighted)	The project activity increases air quality by reducing $PM_{2.5}$ and PM_{10} emissions by 0.02 µg/m^3 and 0.03 µg/m^3, respectively. Replacing fossil-based energy sources with wind leads to improved human health by improving air quality. As known, fossil fuel emissions are secondary sources of $PM_{2.5}$ and PM_{10} in the cities. Since the project reduces the use of fossil fuels, $PM_{2.5}$ and PM_{10} formation will be reduced accordingly.	Monitor annually avoided $PM_{2.5}$ and PM_{10} emissions.	The project owner operates the plant since 2016 and complies with targeted SDGs so far.	Yes
Goal 12. Ensure sustainable	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

consumption and production patterns									
Goal 13. Take urgent action to combat climate change and its impacts	*13.2* Integrate climate change measures into national policies, strategies, and planning *13.2.2* Total greenhouse gas emissions per year	Yes	The project activity directly contributes to the targeted SDG by achieving annually 71,531 tCO_2 of emissions through clean energy generation and displacing emission-intensive energy in the national grid.	The project activity involves a 30 MW of capacity addition to the existing Aliağa WPP. With the installed capacity of 30 MW, the project activity reduces 71,531 tCO_2 per year and 715,310 tCO_2 during the crediting period.	*13.2.2* Total greenhouse gas emissions per year	The project activity contributes to SDG 13 by reducing 71,531 tCO_2 emissions per annum via generating green energy from wind power – which is the cleanest source of energy. The project contributes to climate change mitigation by displacing fossil fuels while meeting the host country's growing energy demand.	Calculate avoided GHG emissions per year.	The project owner operates the plant since 2016 and has been reducing emissions without any issue.	Yes
Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

SUMMARY	**Targeted**	**Likely to be Achieved**
Total Number of SDGs	**7**	**7**
Certification label (Bronze, Silver, Gold, Platinum, or Diamond) for the ACCs as defined in the PSF	**Diamond**	**Diamond**

Section G. Local stakeholder consultation

G.1. Modalities for local stakeholder consultation

In Turkey, projects which are intended to be actualized go through a process of evaluation as stipulated in the Regulation for Environmental Impact Assessment (EIA). The proposed project activity was granted a release from duty to perform a full EIA by the Environment Ministry. 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.

However, for the project's submission to the GCC a local stakeholder process is necessary per the standard's rules and requirements. In this regard, a meeting was conducted with local stakeholders on 01/03/2022. Village heads of the three nearby villages (Atçılar, Seklik and İsmailli) were notified regarding the date and time of the meeting so that they could inform the locals. Especially women's participation to the consultation meeting was encouraged. During the meeting, officials from the project owner company informed the stakeholders regarding the activities the proposed project is undertaking and its plans on registration to the GCC program. Furthermore, e-mails were sent to other local stakeholders, such as relevant regional institutions and government bodies and they were invited to provide feedback and voice their opinions regarding the project activity. The institutions listed below were also invited to provide feedback on 22/02/2022. The proof regarding the invitations sent to stakeholders and the received feedback (from only one institution) has been listed in Appendix 6.

- İzmir Provincial Directorate for Environment and Urbanization
- İzmir Provincial Directorate for Agriculture and Forestry
- İzmir Provincial Directorate for Culture and Tourism
- İzmir Provincial Directorate for Education
- Women Entrepreneurs Association of Turkey
- Association of Women Entrepreneurs
- Disaster and Emergency Management Authority
- Bergama District Governor's Office
- Bergama District Directorate of Health
- Zeytindağ Gendarmerie Station Command
- Turkish Electricity Transmission Corporation's (TEİAŞ) 3rd Region Directorate
- TEİAŞ Western Anatolia Load Dispatch Operation Center Directorate

G.2. Summary of comments received

Nine local people have participated in the meeting and provided feedback. Four of them were women and the remaining five were men. The list containing the details of the participants – including name, surname, gender and contact details – will be provided to the GCC Verifier.

The overall approach to the project activity was positive and affirmative. No negative comments were received from any of the relevant stakeholders or the locals in nearby villages. The locals mostly voiced contentedness regarding the employment opportunities created with the implementation of the project activity and the clean energy it provides. Details of the responses and their translation to English are provided in Appendix 6. The dates of the evaluation are available in the forms completed by local stakeholders.

It was also observed that the residents already have general information on the project before the meeting. The participants seemed satisfied with the meeting however leaflets and posters should be posted in order to provide project related information to the people who did not participate in the meetings.

G.3. Consideration of comments received

The comments received have been evaluated by the project owner and the consultant. It is observed that there is no negative feedback from the local stakeholders regarding the project activity's implementation.

Section H. Approval and authorization

As per the guidelines 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	Bergama RES Enerji Üretim A.Ş.
Country	Turkey
Address	Kuleli Sokak No: 87/6 06700 GOP/Çankaya/ANKARA
Telephone	+90 312 446 30 23
Fax	+90 312 437 43 99
E-mail	altug@bilgin.com.tr
Website	https://bilgin.com.tr/
Contact person	Altuğ Bilgin

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

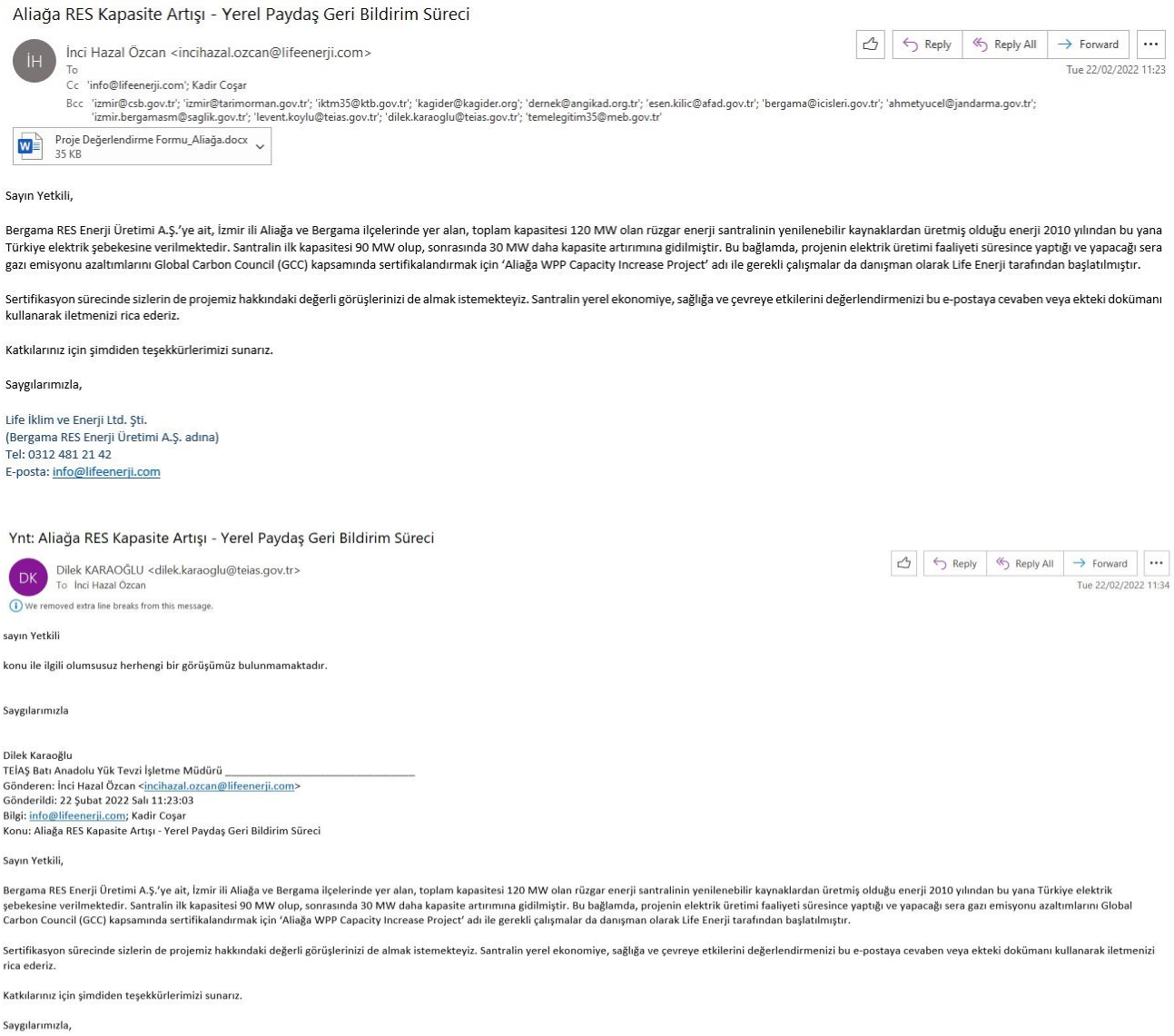
N/A

Appendix 5. Further background information on monitoring plan

N/A

Appendix 6. Summary report of comments received from local stakeholders

Proof of e-mails sent for invitation



Aliağa RES Kapasite Artışı - Yerel Paydaş Geri Bildirim Süreci

İH İnci Hazal Özcan <incihazal.ozcan@lifeenerji.com>
To
Cc 'info@lifeenerji.com'; Kadir Coşar
Bcc 'izmir@csb.gov.tr'; 'izmir@tarimorman.gov.tr'; 'iktm35@ktb.gov.tr'; 'kagider@kagider.org'; 'dernek@angikad.org.tr'; 'esen.kilic@afad.gov.tr'; 'bergama@icisleri.gov.tr'; 'ahmetyucel@jandarma.gov.tr'; 'izmir.bergamasm@saglik.gov.tr'; 'levent.koylu@teias.gov.tr'; 'dilek.karaoglu@teias.gov.tr'; 'temelegitim35@meb.gov.tr'

Reply | Reply All | Forward | ...
Tue 22/02/2022 11:23

Proje Değerlendirme Formu_Aliağa.docx
35 KB

Sayın Yetkili,

Bergama RES Enerji Üretimi A.Ş.'ye ait, İzmir ili Aliağa ve Bergama ilçelerinde yer alan, toplam kapasitesi 120 MW olan rüzgar enerji santralinin yenilenebilir kaynaklardan üretmiş olduğu enerji 2010 yılından bu yana Türkiye elektrik şebekesine verilmektedir. Santralin ilk kapasitesi 90 MW olup, sonrasında 30 MW daha kapasite artırımına gidilmiştir. Bu bağlamda, projenin elektrik üretimi faaliyeti süresince yaptığı ve yapacağı sera gazı emisyonu azaltımlarını Global Carbon Council (GCC) kapsamında sertifikalandırmak için 'Aliağa WPP Capacity Increase Project' adı ile gerekli çalışmalar da danışman olarak Life Enerji tarafından başlatılmıştır.

Sertifikasyon sürecinde sizlerin de projemiz hakkındaki değerli görüşlerinizi de almak istemekteyiz. Santralin yerel ekonomiye, sağlığa ve çevreye etkilerini değerlendirmenizi bu e-postaya cevaben veya ekteki dokümanı kullanarak iletmenizi rica ederiz.

Katkılarınız için şimdiden teşekkürlerimizi sunarız.

Saygılarımızla,

Life İklim ve Enerji Ltd. Şti.
(Bergama RES Enerji Üretimi A.Ş. adına)
Tel: 0312 481 21 42
E-posta: info@lifeenerji.com

Ynt: Aliağa RES Kapasite Artışı - Yerel Paydaş Geri Bildirim Süreci

DK Dilek KARAOĞLU <dilek.karaoglu@teias.gov.tr>
To İnci Hazal Özcan

Reply | Reply All | Forward | ...
Tue 22/02/2022 11:34

We removed extra line breaks from this message.

sayın Yetkili

konu ile ilgili olumsuz herhengi bir görüşümüz bulunmamaktadır.

Saygılarımızla

Dilek Karaoğlu
TEİAŞ Batı Anadolu Yük Tevzi İşletme Müdürü
Gönderen: İnci Hazal Özcan <incihazal.ozcan@lifeenerji.com>
Gönderildi: 22 Şubat 2022 Salı 11:23:03
Bilgi: info@lifeenerji.com; Kadir Coşar
Konu: Aliağa RES Kapasite Artışı - Yerel Paydaş Geri Bildirim Süreci

Sayın Yetkili,

Bergama RES Enerji Üretimi A.Ş.'ye ait, İzmir ili Aliağa ve Bergama ilçelerinde yer alan, toplam kapasitesi 120 MW olan rüzgar enerji santralinin yenilenebilir kaynaklardan üretmiş olduğu enerji 2010 yılından bu yana Türkiye elektrik şebekesine verilmektedir. Santralin ilk kapasitesi 90 MW olup, sonrasında 30 MW daha kapasite artırımına gidilmiştir. Bu bağlamda, projenin elektrik üretimi faaliyeti süresince yaptığı ve yapacağı sera gazı emisyonu azaltımlarını Global Carbon Council (GCC) kapsamında sertifikalandırmak için 'Aliağa WPP Capacity Increase Project' adı ile gerekli çalışmalar da danışman olarak Life Enerji tarafından başlatılmıştır.

Sertifikasyon sürecinde sizlerin de projemiz hakkındaki değerli görüşlerinizi de almak istemekteyiz. Santralin yerel ekonomiye, sağlığa ve çevreye etkilerini değerlendirmenizi bu e-postaya cevaben veya ekteki dokümanı kullanarak iletmenizi rica ederiz.

Katkılarınız için şimdiden teşekkürlerimizi sunarız.

Saygılarımızla,

The image above contains a reply to the e-mail sent to local stakeholders. The mail reads: "Dear Authority, we have no negative feedback for the project."

Değerlendirmeyi Yapan Kişinin Adı ve Soyadı:	Şakir naz Özbay
Kurum/Görevi:	Ataçlar köy halkı
Tarih:	01.03.2022
Yer:	İzmir / TÜRKİYE
Proje hakkında **olumlu** bulduğunuz hususlar nelerdir?	
Çevreye zarar vermeyen çevre dostu köy halkına yardımı olan projedir	
Proje hakkında **olumsuz** bulduğunuz hususlar nelerdir?	
İmza	

Proje Değerlendirme Formu (Aliağa RES Kapasite Artışı – 30 MW)

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 enerji

Değerlendirmeyi Yapan Kişinin Adı ve Soyadı:	Hüseyin Değirmenci
Kurum/Görevi:	Seferli köy halkı
Tarih:	01.03.2022
Yer:	İzmir / TÜRKİYE

Proje hakkında **olumlu** bulduğunuz hususlar nelerdir?

Çevreye zarar vermemesi, vatandaşlar iş imkanı sağlaması açısından güzel bir proje

Proje hakkında **olumsuz** bulduğunuz hususlar nelerdir?

İmza

Proje Değerlendirme Formu (Aliağa RES Kapasite Artışı – 30 MW)

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

Değerlendirmeyi Yapan Kişinin Adı ve Soyadı:	Ercan Atıcı
Kurum/Görevi:	Atçılar Köyü Halkı
Tarih:	01.03.2022
Yer:	İzmir / TÜRKİYE

Proje hakkında **olumlu** bulduğunuz hususlar nelerdir?

proje bir çok vatandaşımız iş imkan sağladı

Proje hakkında **olumsuz** bulduğunuz hususlar nelerdir?

İmza

Proje Değerlendirme Formu (Aliağa RES Kapasite Artışı – 30 MW)

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

Değerlendirmeyi Yapan Kişinin Adı ve Soyadı:	Alirıza Yıldın
Kurum/Görevi:	Ağılar köyü köy halkı
Tarih:	01.03.2022
Yer:	İzmir / TÜRKİYE
Proje hakkında **olumlu** bulduğunuz hususlar nelerdir?	
Yenilenebilir enerji kaynaklarından Elektrik üretip çevreye zarar vermeyen doğa dostu bir proje	
Proje hakkında **olumsuz** bulduğunuz hususlar nelerdir?	
İmza	

Proje Değerlendirme Formu (Aliağa RES Kapasite Artışı – 30 MW)

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

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Değerlendirmeyi Yapan Kişinin Adı ve Soyadı:	Mehmet Duyar
Kurum/Görevi:	Atcılar Köy Halkı
Tarih:	01.03.2022
Yer:	İzmir / TÜRKİYE
Proje hakkında **olumlu** bulduğunuz hususlar nelerdir?	
Çevre Dostu Bir Projedir köy halkına da yardımları olmuştur	
Proje hakkında **olumsuz** bulduğunuz hususlar nelerdir?	
İmza	

Proje Değerlendirme Formu (Aliağa RES Kapasite Artışı – 30 MW)

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

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Değerlendirmeyi Yapan Kişinin Adı ve Soyadı:	Arife ÖNDER
Kurum/Görevi:	Seklik köy halkı
Tarih:	01.03.2022
Yer:	İzmir / TÜRKİYE
Proje hakkında **olumlu** bulduğunuz hususlar nelerdir?	
Herhangi bir zararı olmayan köy halkına iş konusunda yardımcı olan bir projedir.	
Proje hakkında **olumsuz** bulduğunuz hususlar nelerdir?	
İmza Arife.	

Proje Değerlendirme Formu (Aliağa RES Kapasite Artışı – 30 MW)

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

Değerlendirmeyi Yapan Kişinin Adı ve Soyadı:	Munise Akdeniz
Kurum/Görevi:	Atçılar köy halkı
Tarih:	01.03.2022
Yer:	İzmir / TÜRKİYE
Proje hakkında **olumlu** bulduğunuz hususlar nelerdir?	
Çevreye zararı olmayan aynı zamanda elektrik üretimine katkı veren bir proje	
Proje hakkında **olumsuz** bulduğunuz hususlar nelerdir?	
İmza	

Proje Değerlendirme Formu (Aliağa RES Kapasite Artışı – 30 MW)

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

Değerlendirmeyi Yapan Kişinin Adı ve Soyadı:	Rasim AKDEMİR
Kurum/Görevi:	Ataclar Mah. Muhtarı
Tarih:	01.03.2022
Yer:	İzmir / TÜRKİYE

Proje hakkında **olumlu** bulduğunuz hususlar nelerdir?

Yenilebilir enerji kaynakları elektrik üretip çevreye zararsız bir projedir.

Proje hakkında **olumsuz** bulduğunuz hususlar nelerdir?

İmza

Proje Değerlendirme Formu (Aliağa RES Kapasite Artışı – 30 MW)

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

Değerlendirmeyi Yapan Kişinin Adı ve Soyadı:	mihriban köklü
Kurum/Görevi:	Atalar köy halkı
Tarih:	01.03.2022
Yer:	İzmir / TÜRKİYE
Proje hakkında **olumlu** bulduğunuz hususlar nelerdir?	
Proje bir çok vatandaşımız için iş kapısı olmaktadır	
Proje hakkında **olumsuz** bulduğunuz hususlar nelerdir?	
İmza	

Proje Değerlendirme Formu (Aliağa RES Kapasite Artışı – 30 MW)

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

Summary report of comments received from local stakeholders, translated into English

Project Evaluation Form (Aliağa WPP Capacity Increase)

Name and Surname of the Evaluator	Şekernaz Özbay
Establishment/Position	Local of Atçılar Village
Date	01.03.2022
Location	İzmir / TURKEY
What do you think are the **positive** aspects of the projects?	
The project does not harm the environment, is climate friendly and helps the local people.	
What do you think are the **negative** aspects of the project?	
-	
Signature	

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Project Evaluation Form (Aliağa WPP Capacity Increase)

Name and Surname of the Evaluator	Hüseyin Değirmenci
Establishment/Position	Local of Seklik Village
Date	01.03.2022
Location	İzmir / TURKEY
What do you think are the **positive** aspects of the projects?	
The project is a good one as it does not harm the environment and provides employment opportunities to the citizens.	
What do you think are the **negative** aspects of the project?	
-	
Signature	

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Project Evaluation Form (Aliağa WPP Capacity Increase)

Name and Surname of the Evaluator	Ercan Atıcı
Establishment/Position	Local of Atçılar Village
Date	01.03.2022
Location	İzmir / TURKEY
What do you think are the **positive** aspects of the projects?	
The project provided employment opportunities to many of our citizens.	
What do you think are the **negative** aspects of the project?	
-	
Signature	

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Project Evaluation Form (Aliağa WPP Capacity Increase)

Name and Surname of the Evaluator	Ali Rıza Yıldız
Establishment/Position	Local of Atçılar Village
Date	01.03.2022
Location	İzmir / TURKEY
What do you think are the **positive** aspects of the projects?	
The project is climate friendly as it produces electricity from renewable energy resources and does not harm the environment.	
What do you think are the **negative** aspects of the project?	
-	
Signature	

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Project Evaluation Form (Aliağa WPP Capacity Increase)

Name and Surname of the Evaluator	Mehmet Duyar
Establishment/Position	Local of Atçılar Village
Date	01.03.2022
Location	İzmir / TURKEY
What do you think are the **positive** aspects of the projects?	
The project is environment friendly. It has been helping the locals of the village.	
What do you think are the **negative** aspects of the project?	
-	
Signature	

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Project Evaluation Form (Aliağa WPP Capacity Increase)

Name and Surname of the Evaluator	Arife Önder
Establishment/Position	Local of Seklik Village
Date	01.03.2022
Location	İzmir / TURKEY
What do you think are the **positive** aspects of the projects?	
The project does not cause any harm and helps the local people with employment opportunities.	
What do you think are the **negative** aspects of the project?	
-	
Signature	

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Project Evaluation Form (Aliağa WPP Capacity Increase)

Name and Surname of the Evaluator	Munise Akdeniz
Establishment/Position	Local of Atçılar Village
Date	01.03.2022
Location	İzmir / TURKEY
What do you think are the **positive** aspects of the projects?	
The project does not harm the environment and contributes to electricity generation at the same time.	
What do you think are the **negative** aspects of the project?	
-	
Signature	

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Project Evaluation Form (Aliağa WPP Capacity Increase)

Name and Surname of the Evaluator	Rasim Akdeniz
Establishment/Position	Village Head of Atçılar Village
Date	01.03.2022
Location	İzmir / TURKEY
What do you think are the **positive** aspects of the projects?	
The project generates electricity from renewable energy resources and causes no harm to the environment.	
What do you think are the **negative** aspects of the project?	
-	
Signature	

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Project Evaluation Form (Aliağa WPP Capacity Increase)

Name and Surname of the Evaluator	Mihriban Köklü
Establishment/Position	Local of Atçılar Village
Date	01.03.2022
Location	İzmir / TURKEY
What do you think are the **positive** aspects of the projects?	
The project has provided employment to many of our citizens.	
What do you think are the **negative** aspects of the project?	
-	
Signature	

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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[70];
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

[70]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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