

KEY PROJECT INFORMATION & PROJECT DESIGN DOCUMENT (PDD)

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VERSION **v. 1.2**

RELATED SUPPORT

– **Key Project Information & Project Design Document v.1.2**

This document contains the following Sections

Key Project Information

Section A – Description of project

Section B – Application of approved Gold Standard Methodology (ies) and/or demonstration of SDG Contributions

Section C – Duration and crediting period

Section D – Summary of Safeguarding Principles and Gender Sensitive Assessment

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KEY PROJECT INFORMATION

GS ID of Project	GS 1237
Title of Project	Sadıllı Wind Farm Project, Turkey
Time of First Submission Date	05/03/2021
Date of Design Certification	11/09/2013
Version number of the PDD	9
Completion date of version	11/05/2022
Project Developer	Çanres Elektrik Üretim A.Ş.
Project Representative	Life İklim ve Enerji Ltd.Şti.
Project Participants and any communities involved	Çanres Elektrik Üretim A.Ş.
Host Country (ies)	Turkey/ Tekirdağ,Şadıllı
Activity Requirements applied	☐ Community Services Activities ☒ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A
Scale of the project activity	☐ Micro scale ☐ Small Scale ☒ Large Scale
Other Requirements applied	
Methodology (ies) applied and version number	01 - ACM0002, v. 20.0.0
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A
Project Cycle:	☒ Regular ☐ Retroactive

Table 1 – Estimated Sustainable Development Contributions

Sustainable Development Goals Targeted	SDG Impact (defined in Hata! Başvuru kaynağı bulunamadı.)	Estimated Annual Average	Units or Products
Climate action	SDG 13	CO ₂ : 72,598 tCO ₂ /year	
Affordable and clean energy	SDG 7	112,000 MWh/annually renewable energy. 5,255,662 EUR natural gas import is to be avoided by generation of project activity.	
Decent work and economic growth	SDG 8	The project provides between 5 and 15 employments. HSE trainings to be held.	
Clean water	SDG 6	Avoidance of 2,765.3 m ³ /year wastewater discharge to the environment.	

SECTION A. DESCRIPTION OF PROJECT

A.1. Purpose and general description of project

Çanres Elektrik Üretim A.Ş. (hereafter referred to as “Çanres Elektrik”), operated 14 units of “ŞADILLI WPP” with total installed capacity of 38.5 MWm/33 MWe. The Project consists of the installation of 14 wind turbines that have an installed capacity of 2.75 MW each; totaling 38.5 MWm. Project located in Çanakkale and Tekirdağ provinces, in Turkey. Energy Market Regulatory Authority (EMRA) issued the license of the project in February 2012 for 33 MWe. Operation start date of the first three turbines was 27/10/2014, and it is considered as the actual start date of the project.

The Project generates 112,000 MWh per year.¹ The electricity produced by project activity resulted in a total emission reduction of 72,598 tCO₂ per year.

The turbines, each equipped with 3 blades, have a hub height of 85 m and a rotor diameter of 100 m. The Project has been connected to the Keşan transformer station via a 154 kV high voltage transmission line.

¹ Garrad Hassan “Assessment of The Energy Production of The Proposed Sadıllı Wind Farm” report.

Table 2: Project Implementation Schedule

Date	Milestone
01/11/2007	EMRA is applied for the license
15/02/2012	License is issued by EMRA Proposals for carbon development are collected (prior consideration)
15/11/2011	Proposals for carbon development are collected (prior consideration)
29/12/2011	Confirmation for going ahead with carbon development services EIA exemption permit acquired.
26/01/2012	EIA exemption permit acquired.
28/02/2012	Equipment order is signed.
06/08/2012	Agreement with the construction company is signed.
03/09/2012	Mobilisation on site is initiated (road construction etc.).
19/12/2012	Loan agreement is signed.
26/12/2012	Final license amendment application is made to EMRA.
12/12/2013	EIA exemption permit is amended according to the turbine coordinate change.
27/10/2014	3 turbines with 8.25 MWe capacity are started to operate (start date of the first monitoring period)
14/11/2014	5 turbines with 13.75 MWe capacity are started to operate.
06/12/2014	6 turbines with 16.5 MWe capacity are started to operate.
31/03/2016	End date of the first monitoring period.
01/04/2016	Starting date of the second monitoring period
27/09/2016	Issuance of VERs for the first monitoring period
30/09/2017	End date of the second monitoring period
01/10/2017	Starting date of the third monitoring period
09/02/2018	Issuance of VERs for the second monitoring period
30/09/2019	End date of the third monitoring period
14/09/2020	Issuance of VERs for the third monitoring period

A.1.1. Eligibility of the project under Gold Standard

The project is eligible in line with Renewable Energy Activity Requirements. Information about eligibility of Şadıllı WPP is given below.

Required points as per design certificate renewal rules are given Section 5.1.47 of the GS4GG Principles & Requirements v1.2. The project activity meets the eligibility criteria as per section 3.1.1 of the GS4GG Principles & Requirements document as described below:

-The Project applies ACM0002: Grid-connected electricity generation from renewable sources --- Version 20.0.

-The project type is power generation using Wind Energy, an eligible project type per 1.1.1 a) and 1.1.1 b) of the Eligible Project Types & Scope under Renewable Energy Activity Requirements.

-The project activity results in the displacement of electricity from thermal power plants while contributing to the sustainable development of Turkey. Hence, the Project contributes to the Gold Standard Vision and Mission.

-Wind power is an approved project type and does not require approval from Gold Standard.

-This project activity is not associated with geo-engineering or energy generated from fossil fuel or nuclear fossil fuel switch, nor does it enhance or prolong such energy generation.

-The Project is not registered with any other schemes.

- -Type of Project: This information has been given in PDD. Şadıllı WPP is a wind power project. So, there was no change regarding type of the project.

-Location: This information has been given in PDD. The host country is Republic of Turkey. Project area is in Marmara region, Tekirdağ province. The project placed in Şadıllı District; Elmalı village. Location of the project is given in PDD. After the renewal of crediting period, there is no change in the location of the Şadıllı WPP.

-Project Area, Project Boundary and Scale: The Project Area, Scale of Project and Project Boundary has been defined in PDD. In second crediting period, there will be no change regarding these parameters of the Şadıllı WPP. Şadıllı WPP is a "large scale" project in second crediting period.

- Host Country Requirements: There are no additional laws that came into force that has an impact on the project activity and the project activity is still in line with the

available law and regulations. So, Şadıllı WPP complies with applicable Turkey's laws and environmental, ecological and social regulations, including the law on investment, the law on environmental protection, the electricity law, the labour code, the land law. Consistency with mandatory laws and regulations is given in section B.5 of the PDD.

- Contact Details: This information has been given in this PDD. There is no change regarding information about contact details of the Şadıllı WPP.

- Legal Ownership: This information has been given in PDD. The Legal Ownership specified in first crediting period which has not changed after the renewal of crediting period. Çanres Elektrik Üretim A.Ş. which is legal developer and owner of the project.

- Other Rights: This information has been given in PDD. The legal rights specified in the first crediting period has not change after the crediting period renewal process. Çanres Elektrik Üretim A.Ş. has the legal rights for the VER credits that will be issued under Gold Standard.

- Official Development Assistance (ODA) Declaration: Project developer has been already submitted Official Development Assistance (ODA) declaration.

- The project helps Turkey to stimulate and commercialise the use of grid connected renewable energy technologies and markets. After renewal of crediting period, the project type has not changed. So, it is still eligible type under Gold Standard for the Global Goals. In addition, Şadıllı WPP demonstrates its contribution to the Sustainable Development Goals, impact on SDG 13, SDG 8, SDG 7 and SDG 6. The project was contributed to mentioned SDGs (SDG 13, SDG 8, SDG 7, SDG 6) before renewal of crediting period. Project also will continue to contribute with many Safeguarding Principles as it did in the first crediting period. There was no update after renewal of crediting period regarding this issue.
- The emissions reduction calculations are based on two main parameters: the energy produced and the grid emission factor. The project baseline is still the "ACM0002 "Grid-connected electricity generation from renewable sources". The project activity is still in line with the first crediting period. There will be no changes to the Eligibility Principles, Criteria and Requirements during the second crediting period.
- After the renewal of crediting period, there were no updates to the Gold Standard activity, product, and methodology specific Requirements. In second crediting

period, the specified product requirements are the same; Product Requirements applied: GHG Emissions Reduction & Sequestration, Units/Products: VERs

Şadıllı WPP is not registered with any other voluntary or compliance schemes and no potential existing for double counting of impacts. No GHG related environmental credits are applied to the Turkish power sector. Moreover, the GS1237 Sadilli Wind Farm Project, Turkey is not included in an ETS or other GHG trading mechanism. Since an ETS is not implemented in Turkey, an emission reduction cap has not been enforced for any sector. As an ETS is not implemented in Turkey, no double-counting risk exists for Turkey and this project.

This information is confirmed in the no-double counting declaration by the Çanres Elektrik Üretim A.Ş². If any such risk of double counting exists in Turkey, the Project Developer (Çanres Elektrik Üretim A.Ş.) shall retire eligible units equal to the quantity of Gold Standard VERs.

² Necessary Commitment Letter has been uploaded to the SC App.

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

Çanres Elektrik Üretim A.Ş. which is the legal developer and owner of the project and has the legal rights for the VER credits that will be issued under Gold Standard.

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

Environmental

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

Economical

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

Social

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

Technological

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

A.2. Location of project

The host country is Republic of Turkey. Project area is in Marmara region, Tekirdağ province. The Project located near Sülaymaniye, Bayramiç, Elmalı villages of Şadıllı district in Tekirdağ, Turkey.

Location of the project is given below in the Figure 1.



Figure 1: Location of Şadıllı WPP

The coordinates of the turbines are given below. Project license is for 14 turbines with the 2.75 MW output.

Table 3: Geographical coordinates of the turbines of Şadıllı WPP³

Wind Turbine No.	Latitude (N)	Longitude (E)
1	26° 53' 13"	40° 45' 04"
2	26° 53' 27"	40° 44' 54"
3	26° 53' 47"	40° 44' 59"
4	26° 53' 56"	40° 45' 5"
5	26° 54' 14"	40° 45' 10"
6	26° 54' 27"	40° 45' 18"
7	26° 54' 38"	40° 45' 11"
8	26° 54' 51"	40° 45' 9"
9	26° 55' 5"	40° 45' 15 "
10	26° 55' 20"	40° 45' 19 "
11	26° 55' 25"	40° 45' 26"
12	26° 55' 26"	40° 45' 13"
13	26° 55' 36"	40° 45' 7"
14	26° 55' 46"	40° 45' 1"

³ See; (Convert UTM to Lat/Lon Coordinates), for unit conservation see;
<http://www.rcn.montana.edu/resources/tools/coordinates.aspx?nav=11&c=UTM&md=83&mdt=NAD83/WGS84&z=35&e=591938&n=4469295&h=N>

A.3. Technologies and/or measures

The Project activity involves the generation of renewable energy from wind, thereby displacing grid electricity that is partly generated from fossil fuel fired power plants. The wind-driven blades are connected to an electricity generator, which produces electrical energy and supplies it to the grid without storage.

GE Energy, a wind turbine manufacturer, has been selected as equipment provider. The Project includes 14 turbines. Şadıllı WPP consists of 14 GE 2.75 – 100 type which has a rotor diameter of 100 m with a generator rated at 2.75 MW. GE 2.75 – 100 turbine is equipped with three blades and the hub with height of 85 m.

Operational life time of the Şadıllı WPP is determined by using the 'Tool to determine the remaining lifetime of equipment' (v.1). In the tool it is stated that; Project participants may use one of the following options to determine the remaining lifetime of the equipment: (a) Use manufacturer's information on the technical lifetime of equipment and compare to the date of first commissioning; (b) Obtain an expert evaluation; (c) Use default values. For the project option (c) is used. So in the tool it is said that default lifetime for the on-shore wind turbines is 25 years.

With figures taken from the Feasibility Report⁴, Plant Load Factor (PLF) is calculated as follows;

$$\text{PLF} = \frac{\text{Annual Gen.}}{\text{Installed Cap.} \times (\text{working hours})} = \frac{112,000 \text{ MWh}}{33 \text{ MWe} \times 8760 \text{ h}}$$

$$= 0.39 \text{ or } 39\%$$

The project activity achieves emission reductions by avoiding CO₂ emissions from the business-as-usual scenario electricity generation produced by mainly fossil fuel-fired power plants within the Turkish national grid (Figure 2) Total emission reduction over the 7 year crediting period is expected to reach **508,385 tCO₂e** with the assumed total net electricity generation of **112,000 GWh/year**.

⁴ Garrad Hassan 'Assessment of The Energy Production of The Proposed Şadıllı Wind Farm' report.

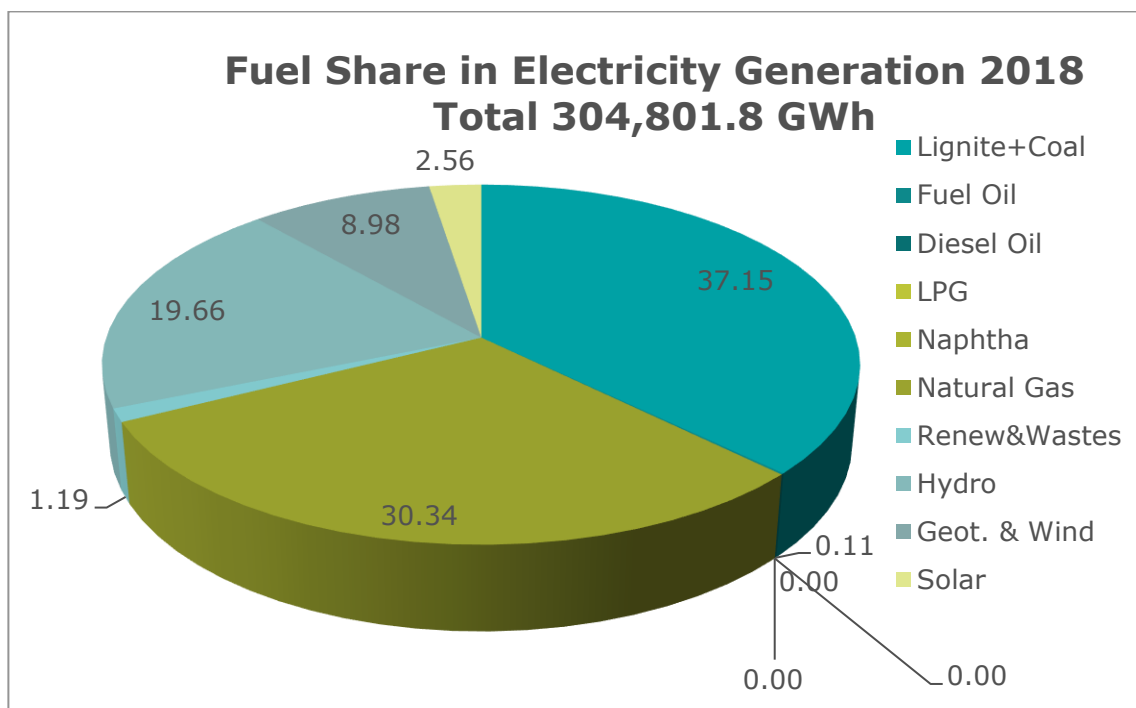


Figure 2: Share of Sources in Electricity Generation 2018⁵

Although Turkey has a very good wind resource, substantial space, a reasonably good electrical infrastructure and an approaching shortage of electricity; it uses negligible capacity (less than 4%) of its onshore potential, which is estimated as 39,791 MW by Renewable Energy General Directorate.⁶ Lack of attractive incentives and tax advantages, limited grid access and restricted turbine supply constitutes the major barriers in front of the wind energy.

Renewable energy law, enacted in 2005, which had amendments in end of 2010 regarding feed-in tariffs, stipulates a purchase obligation by the retail companies for 10 years with a purchase price 7.3 USDc/kWh (~5.5 €/kWh) for the power plants put in

⁵ See, TEİİAŞ, Annual Development of Electricity Generation- Consumption and Losses in Turkey (2018):, <https://www.teias.gov.tr/tr-TR/turkiye-elektrik-uretim-iletim-istatistikleri>

⁶ See, <https://www.mmo.org.tr/sites/default/files/T%C3%BCrkiyeEnerjiG%C3%B6r%C3%BCn%C3%BCm%C3%BC2018Sunumu%2812.04.2018%29.pdf>

operation by end of 2015⁷. This tariff was much below the average remuneration in the leading wind markets and does not constitute a sufficient incentive for investments in little experienced wind energy sector of Turkey. The revenues calculated according to these regulations are considered in the investment planning of the projects and do not lead to returns that let the project be profitable or attractive for capital investors and lenders.

These numbers and figures show the contribution of a wind power project like Şadıllı WPP to the development of environmental friendly electricity generation instead of above described Turkish mix of hydroelectric and fossil fuelled power plants, which are better known and financially more attractive from an investor's point of view. The emission reductions would not occur in the absence of the proposed project activity because of various real and perceived risks that impede the provision of financing.

Şadıllı WPP, as a large wind power plant project, will serve as a perfect project to demonstrate long-term potential of wind energy as a means to efficiently reducing GHG emissions as well as to diversifying and increasing security of the local energy supply and contributing to a sustainable development. Wind driven turbines will rotate in generators and electricity generated here will be transferred to the grid for consumer without any greenhouse gas emissions. The Gold Standard certification shall help to realize this seminal technology by providing an adequate compensation for the lacking financial incentives in the Turkish renewable energy market.

The second 7-year of crediting period is expected to be from 27/10/2021 to 26/10/2028.

⁷ See : http://www.epdk.org.tr/documents/elektrik/mevzuat/kanun/Elk_Kanun_Yek_Kanun.doc
(List I in page 10)

A.4. Scale of the project

Since the installed capacity of the project per license issued by EMRA (Energy market Regulatory Authority) is 33.0 MWe and 38.5 MWm which consist of 14 turbines (14x2,75 MWm), Şadıllı WPP project is a large scale project.

A.5. Funding sources of project

The project activity does not have any public funding or Official Development Assistance (ODA) funding.

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

B.1. Reference of approved methodology (ies)

For the determination of the baseline, the official methodology ACM0002 version 20.0.0, "Grid-connected electricity generation from renewable sources"⁸, is applied, using conservative options and data as presented in the following section. This methodology refers to four Tools, which are:

1. Tool to calculate the emission factor for an electricity system (Version 07.0.0)⁹;
2. Tool for the demonstration and assessment of additionality (Version 07.0.0)¹⁰;
3. Tool to determine the remaining lifetime of equipment (Version 01.0.0)¹¹;
4. Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period (Version 03.0.1)¹²

B.2. Applicability of methodology (ies)

The choice of methodology ACM0002 v20 is justified as the proposed project activity meets its applicability criteria:

- Şadıllı WPP is a grid-connected renewable power generation project activity that install a new wind power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (Greenfield plant);
- The project does not involve switching from fossil fuels to renewable energy at the site of the project activity.

⁸

https://cdm.unfccc.int/filestorage/A/G/0/AG07ZJQ3EXD42LT5YV9HR16M8KINPO/EB105_repan03_ACM0002.pdf?t=TTh8cW5wOGp3fDDxMFR1LiJ01CgZkMkMCI8L

⁹ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

¹⁰ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>

¹¹ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-10-v1.pdf>

¹² <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf>

“Tool to calculate the emission factor for an electricity system” may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid. Once the additionally tool is included in an approved methodology, its application by project participants using this methodology is mandatory.

B.3. Project boundary

As per the Approved Large Scale Consolidated Methodology ACM0002, the project boundary is "The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to." Correspondingly, in this project activity the project boundaries include the project site and all power plants attached to the Turkish National Grid.

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

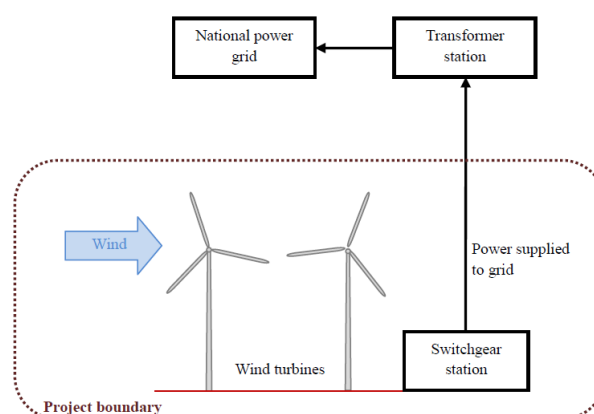


Figure 3: Project Boundary

A general operation diagram of the project is given in

Figure 4.

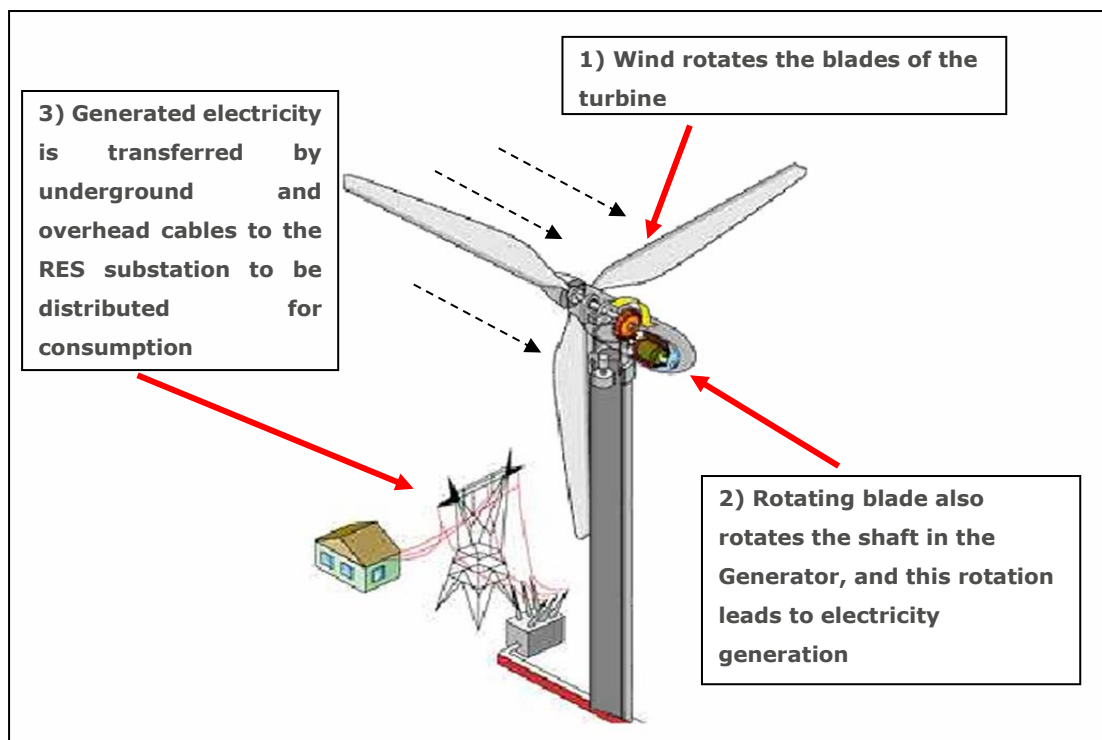


Figure 4: Operation diagram of the project

Based on the above operation diagram, the baseline and project activity related greenhouse gases which are considered in baseline calculation is given below, in Table 4:

Table 4: Emissions sources included in or excluded from the project boundary

Source	GHGs	Included?	Justification/Explanation
Baseline scenario 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: Fossil fuels fired for electricity generation cause CO ₂ emissions. It is included to baseline calculation to find the displaced amount by the project activity.
	CH ₄	No	Minor emission sources: Even though there may be some CH ₄ and N ₂ O emissions during electricity generation, these emissions are negligible and not included in baseline calculation to be conservative and comply with Table-
	N ₂ O	No	

				1 of the methodology (ACM0002 v20) (page 5).
Project	Emissions during construction and operation of the project activity	CO ₂	CO ₂	No
		CH ₄	CH ₄	No
		N ₂ O	N ₂ O	No

B.4. Establishment and description of baseline scenario

The baseline scenario is identified according to the “Baseline Methodology Procedure” of ACM0002 ver.20. The project activity is installation of a new grid-connected wind farm with 25 turbines and is not modification/retrofit of an existing grid-connected power plant. So, first identification of this procedure is selected for proposed project activity, which is described as:

“Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculation of Ministry of Energy and Natural Resources of Turkey ”.

The methodological tool “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period” (version 03.0.1) is adopted to assess the continued validity of the baseline and to update the baseline. This tool provides a stepwise procedure to assess the continued validity of the baseline and to update the baseline at the renewal of a crediting period, as required by paragraph 49 (a) of the modalities and procedures of the clean development mechanism. According to this tool the following steps are applied.

Step 1: Assess the validity of the current baseline for the next crediting period

The validity of the current baseline is assessed using the following Sub-steps:

Step 1.1 Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies.

The project baseline is the “Grid-connected electricity generation from renewable sources”. It is in compliance with the current legal framework. There are no additional laws that came into force that has an impact on the project activity and the project activity is still in line with the available law and regulations.

Step 1.2 Assess the impact of circumstances.

The new national circumstances have an impact on the EF of the grid and thus on the project's current baseline emissions. Accordingly, the EF is updated for the second crediting period in conformity with the latest version of the Tool to calculate the emission factor for an electricity system. There has been no major deviation or change in the market characteristic during the first crediting period.

Step 1.3 Assess whether the continuation of use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested.

The technical lifetime of the project activity (including wind turbines) is defined as 25 years and the equipments lifetime exceeds the crediting period for which renewal is requested. Equipment only requires regular maintenance. The baseline scenario identified at the validation of the project activity was the continuation of grid-connected electricity generation from renewable sources. Under this scenario, no investment from the project's proponent or third party (or parties) has been envisioned later specifically for the project.

Step 1.4 Assessment of validity of the data and parameters.

The emissions reduction calculations are based on two main parameters: the energy produced and the grid emission factor. The latter will be updated as explained in the next paragraph.

As a requirement of the methodology, only the grid emission factor has been updated during the second crediting period renewal.

Step 2: Update the current baseline and the data and parameters

Step 2.1: Update the current baseline

As confirmed in Step 1, under the current context of the sectoral policies and circumstances, the project baseline for the next crediting period is the use of electricity from the national grid. This is conform to the provisions of the latest version of the approved applicable methodology to the project activity namely: *ACM0002 version 20.0, "Grid-connected electricity generation from renewable sources"*.

Step 2.2: Update the data and parameters

The grid emission factor is updated according to the version of the tool: *Tool to calculate the emission factor for an electricity system (Version 07.0)*.

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

Demand for electricity in Turkey is growing rapidly with average 4.2%¹³ for previous ten years. TEİAŞ, who is responsible from the grid reliability has prepared an electricity demand projection for next ten years period (2019-2028) for Turkey and announced on July 2019, given in Table 5 and Figure 5, reflecting the continuation of current demand growth¹⁴.

Table 5: Low and High Demand Projection Scenarios for Ten Years Period (TWh)

Scenarios	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
High Scenario	316,503	332,057	348,662	366,385	385,177	404,287	422,303	440,654	458,917	477,553
Low Scenario	313,832	327,285	340,511	353,200	366,767	380,401	392,610	404,628	416,619	428,791

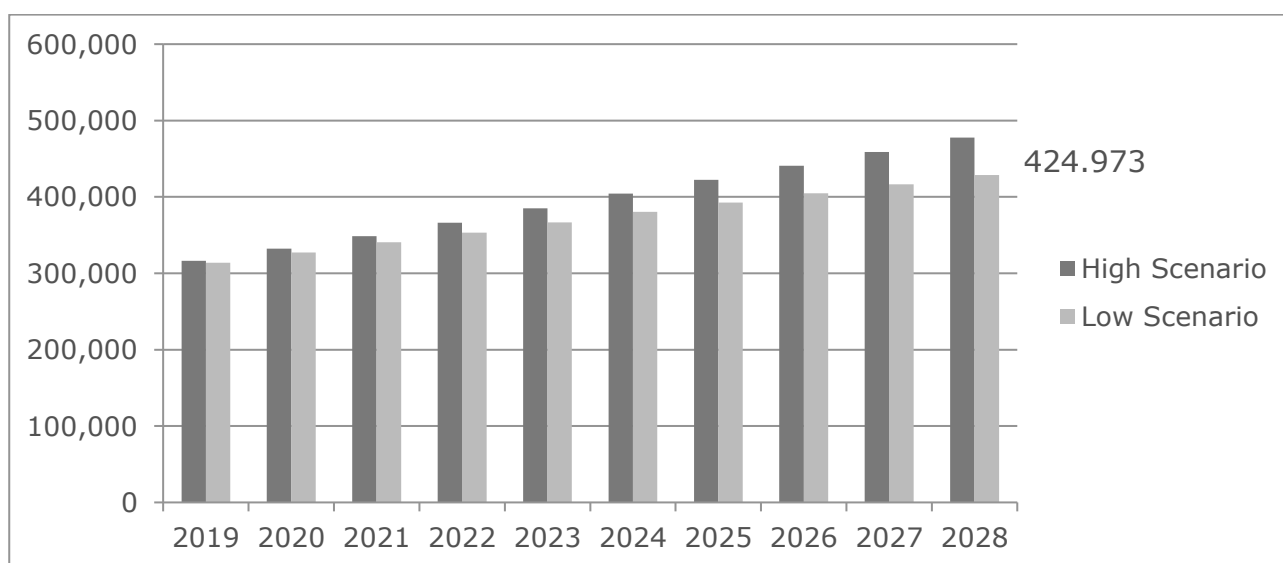


Figure 5: Electricity Demand Projections for Ten Years

¹³ See, <https://www.teias.gov.tr/tr-TR/ilgili-raporlar> 10 Yıllık talep tahminleri raporu

¹⁴ See, <https://www.teias.gov.tr/tr-TR/ilgili-raporlar> 10 Yıllık talep tahminleri raporu

In this projection, electricity supplies are also forecasted taking into account all power plants, which are operational, under construction and newly licensed. Generation projection based on project generation is given in Figure 6.

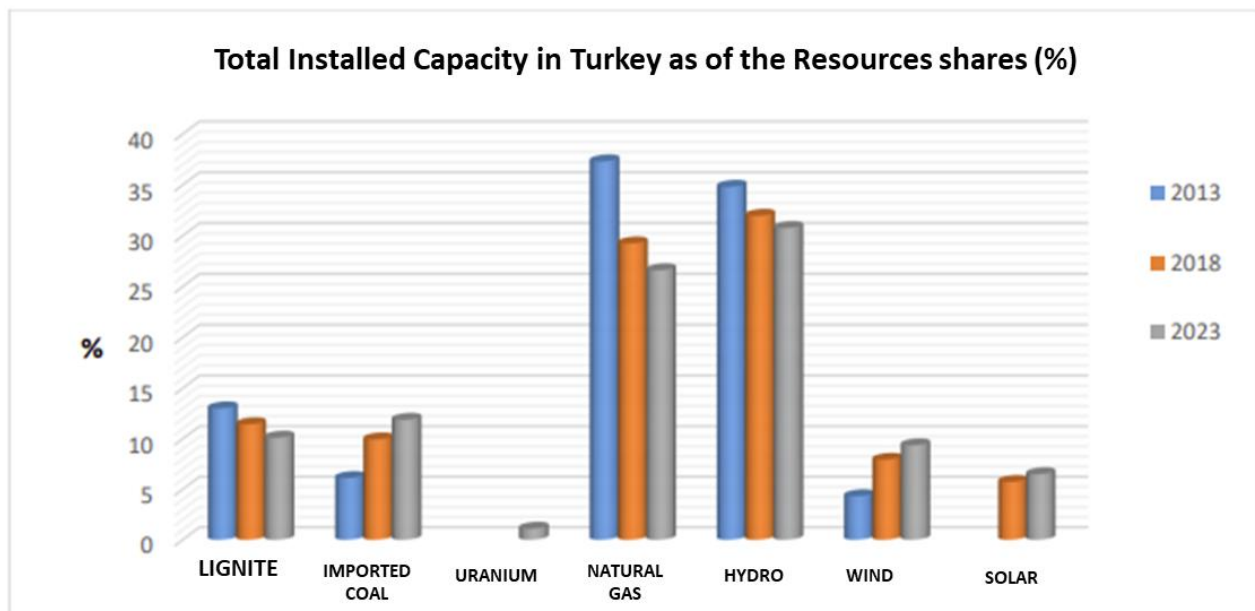


Figure 6: Total Installed Capacity in Turkey as of the Resources shares (%)¹⁵

According to the 5-year projection it is clear that fossil fuels will remain the main sources for electricity generation (46 % in 2023). Natural gas will continue to dominate the market while total imported fuel will still be at 11 %. Hydro will account for 30% of the mix whereas all non-hydro renewable combined (geothermal/biogas/waste/wind) will be account for 15% of all electricity generation. This projection is consistent with continuing fossil fuel dependent characteristics of Turkish electricity sector.

¹⁵ See, <https://www.epdk.gov.tr/Detay/DownloadDocument?id=GTRjtj8aTa8> = (page 103)

Table 6: **By Primary Energy Resources, Installed Capacity of Turkey (2008-2018)**¹⁶

Unit :MW

	Coal	Fuel Oils	Natural Gas	RES+Waste+Waste Heat	Multi Fuel	Hydro	Geothermal	Wind	Solar	TOTAL
2008	10,191	1,818.6	10,656.8	59.7	4,869.0	13,828.7	29.8	363.7	-	41,817.2
%	24.37	4.35	25.48	0.14	11.64	33.07	0.07	0.87	-	100.00
2018	18,997.4	294.0	22,665.9	811.2	4,140.2	28,291.4	1,282.5	7,005.4	5,062.8	88,550.8
%	21.45	0.33	25.60	0.92	4.68	31.95	1.45	7.91	5.72	100.00

In the shed, which is given by Table 6, analysis for the baseline scenario (continuation of current situation) it can be concluded that:

- **Conclusion-1:** Energy demand in Turkey has been increasing with significant rates since ten years, and it is expected to continue at least for next ten years.
- **Conclusion-2:** Even all operational plants, construction phase plants and licensed ones are taken into account lack of supply is projected after the year of 2028. So, there is significant need for electricity generation investments to satisfy demand, which means electricity to be generated by the project activity would otherwise be generated by new power plants to avoid power shortage in coming years.
- **Conclusion-3:** Fossil fuels will hold the dominance in generation mix for at least midterm period (till the end of 2023) with 46% share. Hydro included renewable will remain low with 30% share and non-hydro energy contribution will stay negligible with only 15% of total share by the end of that period. This also shows that most of new capacity additions will be fossil fuel fired power plants.

The combination of aforementioned trends indicates that continuation of energy generation of Şadıllı WPP would decrease the power amount from a new grid-connected thermal plants.

¹⁶ See, <https://www.teias.gov.tr/tr-TR/turkiye-elektrik-uretim-iletim-istatistikleri>

B.5. Demonstration of additionality

For the explanation of how and why the project activity leads to emission reductions that are additional to what would have occurred in the absence of the project activity, the Baseline Methodology refers to the consolidated "Tool for the demonstration and assessment of additionality"¹⁷ version 7.0.0 (Tool), which defines a step-wise approach to be applied to the proposed project.

Additionality has been evaluated in first validation and that the information is repeated in this PDD and no new additionality assessment is done.

¹⁷ Version 7, <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf> (page 4)
(page 4)

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

Sub-step 1a. Define Alternatives to the project activity

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

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

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

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

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

c) Continuation of the current situation, i.e. Şadıllı WPP would not have built

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

According to baseline scenario, which is described in B.4, there is a need for energy investment to satisfy increasing demand and if the Şadıllı WPP would not continue operating, the same amount of energy will be supplied by other private investors to the grid. Forecasts shows that electricity supplied in the absence of Şadıllı WPP will be

mainly based on fossil fuels as the projections for the year of 2023 forecasts 46% share for fossil fuels in the energy mix.

In the absence of the project the power will be produced by new and existing power plants in accordance with the baseline in ACM0002 version 20.

Outcome of Step 1.a: Therefore, two realistic and credible alternative scenarios are identified for the project activity:

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

b) Continuation of the current situation, i.e. Şadıllı WPP would not continue its operation.

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

Both alternatives are (building or not building the project activity) in compliance with the following identified applicable mandatory laws and regulations:

Relevant Laws	Number/ Enactment Date	Aim and Scope
Environmental Law ¹⁸ *Environmental Impact Assessment Regulation	Nr. 2872 / 17/07/2008	The approval is requested for power plants from Ministry of Environment and Forest as Electricity Licence Regulation requests project to be in line with the environmental law.
Electricity Market Law *Electricity Licence Regulation *Electricity Market Balancing and Conciliation Regulation ¹⁹	Nr. 4628 / 03/03/2001	Regulating procedures of electricity generation, transmission, distribution, wholesale, retail for legal entities. Two regulations issued

¹⁸ <http://www.mevzuat.gov.tr/MevzuatMetin/1.5.2872.pdf>

¹⁹ <http://www.stern.nyu.edu/~adamodar/pc/archives/ctryprem08.xls>

		under the law; one for generation licence and the other for market price balancing and conciliation.
Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy ²⁰	Nr. 5346 / 18/05/2005	Aims to extend the utilization of renewable energy for electricity generation and identifies method and principles for power generation from renewable resources in an economical and conservative manner as well as certification of the electricity generated from renewable resources.
Energy Efficiency Law ²¹	Nr. 5627 / 02/05/2007	Identifies method and principles for industry, power plants, residential buildings and transport to imply necessary measures for energy efficiency during electricity generation, transmission, distribution and consumption.

²⁰ <https://www.epdk.org.tr/Detay/DownloadDocument?id=kvZVO0DFQ3E=>

²¹ <https://www.resmigazete.gov.tr/eskiler/2007/05/20070502-2.htm>

According to Turkish regulations, to get necessary permits for further project implementation, license issued by EMRA is required. Hence, issuance of license cannot be considered as 'Project Start Date' but a prerequisite to proceed for further project development activities. The starting date of the Project activity is 28/02/2012. This is the fourth wind farm of the same Project owner, and the first three projects are registered with the Gold Standard. Therefore, the Project owner was well aware of carbon finance before the starting date of the Project activity, demonstrating prior consideration of carbon credits. The bank statement regarding the inclusion of carbon income, which is before the starting date of the Project activity, further demonstrates prior consideration of carbon credits. Moreover, an internal meeting memo dating prior to Project starting date clearly demonstrates that carbon finance has been one of the key drivers in the decision of going forward with the project.

In the following, the investment analysis is applied to clearly demonstrate that the project activity is unlikely to be financially/economically attractive without the revenue from the sale of VERs.

Outcome of Step 1.b: Şadıllı consisted with mandatory laws and regulations. Project implementation schedule shows us that Şadıllı started to consideration of VER from the beginning of the project implementation and VER Revenue has decisive impact on decision of proceeding to the project.

Step 2. Investment analysis

"Guidelines on the assessment of investment analysis²²" version 5 is taken into account when applying this step.

²² http://cdm.unfccc.int/Reference/Guidclarif/reg/reg_guid03.pdf

Sub-step 2a: Determine appropriate analysis method

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

	Investment Analysis Options	Explanation
Option (I)	Simple cost analysis	Not applicable to the project because the project activity generates the revenue from the sales of electricity generation.
Option (II)	Investment comparison analysis	Not applicable because an investment comparison analysis shall be used if the proposed baseline scenario leaves the project participant no other choice than to make an investment to supply the same (or substitute) products or services.
Option (III)	Benchmark analysis	This option (III) is chosen.

To conclude, ACM0002 provides three options for the investment analysis. The benchmark analysis option is selected because more than one alternative is remaining after Step 2.

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

The likelihood of the development of this Project will be determined by analyzing its “Real Project IRR” based on the scenarios with and without the sale of carbon credits. The chosen benchmark for the Project is the (pre-tax) WACC, as the CDM “Guidelines on the Assessment of Investment Analysis” v.5.

Sub-step 2c: Calculation and comparison of the IRR

The following financial figures are used for calculations;

Table 7: Parameters used for benchmark analysis

Parameter	Figure	Source / Justification
Discount rate (WACC)	8.4%	Calculated as WACC
Electricity Price/kWh	5.4 EUR cents/kWh	Guaranteed electricity sales price in Turkey (7.3 USD cents/kWh converted to EUR)
Capital Expenditure	44,413 TEUR	Benchmark with another wind farm of PP
O&M Costs	1,574 TEUR/a	Benchmark with another wind farm of PP
Royalty Payment	1,463 TEUR/a	Contract with TEIAS

Investment horizon	25 years	The Guidelines suggest a minimum of 10 years and a maximum of 20 years. Operational lifetime of the Project is 25 years ⁴ .
Corporate tax (CT) rate	20%	This is the official corporate tax rate in the host country (www.invest.gov.tr)
Equity (E) / Debt (D) ratio	20/80	Min. Equity required by EMRA
Power Generation	112,000 MWh/a	Feasibility Study

The discount rate (WACC) which is selected as the benchmark value is calculated with the following formulas:

$$WACC = (E/(E + D)) * \text{Cost of Equity} + D/(E + D) * \text{Cost of Debt} (1 - CT) \quad [1]$$

$$WACC_{\text{pretax}} = WACC / (1 - CT) \quad [2]$$

Financial expenditures are not considered in the calculations. The Project IRR calculations are carried out for both scenarios with and without considering carbon credits. The calculations conservatively assume that the revenues from electricity sales are obtained without delay, that there are no major unforeseen malfunctions and that wind properties will be as expected. The results are provided below;

Table 6: Comparative table of the financial indicators with and without carbon revenues

Scenario	Real Project IRR
With carbon credits	5.0%
Without carbon credits	4.2%
Benchmark discount rate	8.4%

The Project IRR remains below the benchmark rate, even when the corporate tax rate is taken as 0%. The results indicate that without carbon credits, the financial performance of the Project is not feasible. Under these circumstances, the Project would not be attractive for the investor.

Sub-step 2d: Sensitivity analysis

The purpose of the sensitivity analysis is to examine how the uncertainty of a single variable such as total investment cost and net power output will have an impact on the Project IRR. According to "Guidelines on the Assessment of Investment Analysis", paragraph 20, only variables that constitute more than 20% of either total project costs

or total project revenues should be subjected to sensitivity analysis. Only electricity prices, capital investment and O&M costs are the parameters that influence cash flow by more than 20%. The assumptions set in the analysis process are increasing/decreasing $\pm 15\%$ from the original level of the parameters. The following parameters are identified which would have a significant impact on the financial results;

- a) Electricity prices,
- b) Capital expenditure,
- c) Operation and maintenance costs.

The results are shown in the figure below;

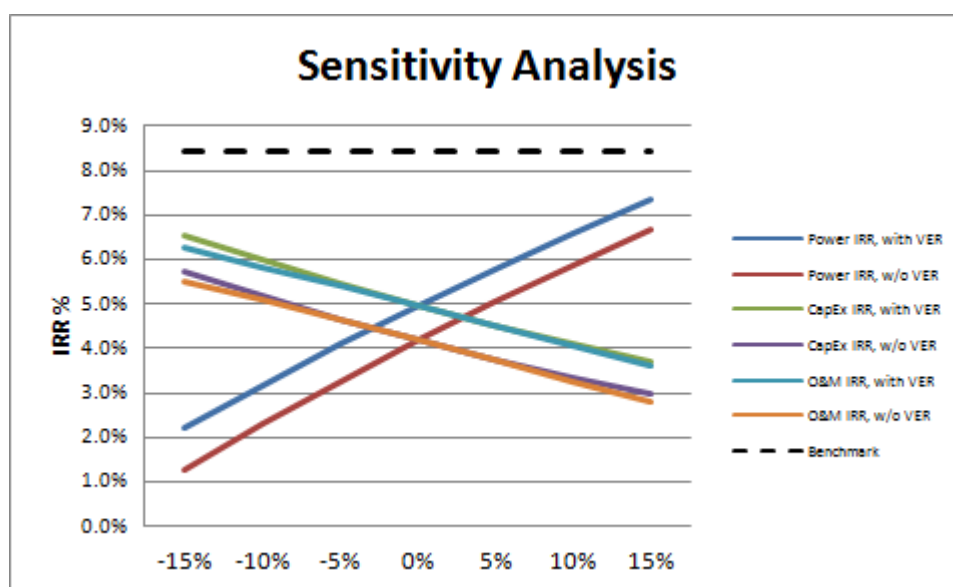


Figure 6: Results of the sensitivity analysis

Here it can be seen that all parameters selected for the sensitivity analysis, i.e. power sales, CapEx and operational expenses have all considerable impact on the Project IRR. The results indicate the following:

- a) Even if the electricity price or power generation would increase by 15%, the Project would stay unfeasible. The electricity price at which the Project IRR is equal to the benchmark is 6.88 EUR cents/kWh, which represents a 26.7% increase relative to the baseline electricity price. This is significantly higher than the market price and the guaranteed tariff for renewable energy in the host country.

- b) Even if the capital expenditures would decrease by 15%, the Project would stay unfeasible. The breakeven point for CapEx is approximately 29,290 TEUR, which represents a 34.1% decrease relative to the baseline CapEx. It is considerably lower than the expected investment cost. Such a change is not realistic.
- c) Even if the operational and maintenance costs, or the annual royalty payments to TEIAS would decrease by 15%, the Project would stay unfeasible. The breakeven point for O&M costs is negative, which is not realistic.

Within the reasonable variation of the CapEx, price of electricity and O&M costs, the calculated IRRs are below the benchmark IRR, thus the Project remains economically unfeasible without carbon revenues. This demonstrates that the proposed Project activity is not the most economically or financially attractive and not financially feasible without the revenue from the sale of carbon credits.

Outcome of Step 2: The proposed Project activity is unlikely to be the most financially/economically attractive.

Step 3. Barrier analysis

The investment analysis has fully demonstrated and explained the additionality of the project, so step 3 is skipped.

Step 4: Common Practice Analysis

The section below provides the analysis as per step 4 of the "*Tool for the demonstration and assessment of additionality*", version 7.0.0 and according to the Guidelines on Common Practice version 02.0

Step 1. Calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed project activity: Only the projects that have a capacity between +/-50% of 33 MWe, i.e. between 16.5 MW and 49.5 MW are considered.

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

In the applicable geographical area, identify all plants that deliver the same output or capacity, within the applicable output range calculated in Step 1, as the proposed project activity and have started commercial operation before the start date of the project. Note their number N_{all} . Registered CDM project activities and projects activities undergoing validation shall not be included in this step;

Public power plants and carbon projects are left out. The number of remaining power plants, N_{all} , is 56.

Step 3: Within plants identified in Step 2, identify those that apply technologies different that the technology applied in the proposed project activity. Note their number N_{diff} ;

Wind power plants are left out. The number of power plants that are not wind farms (N_{diff}) is 56.

Step 4: Calculate factor $F=1-N_{diff}/N_{all}$ representing the share of plants using technology similar to the technology used in the proposed project activity in all plants that deliver the same output or capacity as the proposed project activity.

$$F = 1 - 56/56 = 0$$

$$N_{all}-N_{diff} = 56 - 56 = 0$$

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

$$\begin{aligned} F &= 1 - N_{diff}/N_{all} \\ &= 1 - (56/56) \\ &= 0 \end{aligned}$$

The proposed project activity is a common practice within a sector in the applicable geographical area if both the following conditions are fulfilled:

- a) The factor F is greater than 0.2, and
- b) $N_{all}-N_{diff}$ is greater than 3.

The factor F for the Project activity is not greater than 0.2 and the difference of Nall-Ndiff is not greater than 3, the proposed **is not a common practice** as per the guidelines. The proposed project activity is therefore **additional** under common practice analysis.

B.5.1. Prior Consideration

N/A

B.5.2. Ongoing Financial Need

This alternative is realistic and credible as Şadıllı WPP may undertake project activity if it sees no risk for project and/or if the project turns out to be financially attractive without GS VER credit income. However, investments analyse shows that the project is not economically feasible without GS VER credit income. Moreover, the sensitivity analysis confirms that the proposed project activity is unlikely to be economically attractive without the revenues from VERs as even the maximum IRR result for the best-case scenario 5.0% (with carbon credits) is below the benchmark, which is 8.4%. Consequently, the project activity is additional, it has still ongoing financial need.

In addition, significant amount of bank loan has been received for this project and loan repayment is still ongoing. The income from GS certification is used for loan repayment. Therefore, carbon revenues derived from Gold Standard certification have been playing a very important role in helping PP to loan repayment. Bank receipts (for 2020 years) from the bank as proof of loan payments requested from the project owner have been also provided.²³ It is clearly seen that the loan repayment has been made for the project both in the document included the length of loan and in the document which is included bank statements (bank receipts).

²³ Necessary documents (bank receipts) have been provided to VVB.

In addition to these, there is a signed declaration of the PP confirming the aforementioned issue and the PP's declaration always plays an important role in clarifying a matter.²⁴

Conclusion: The project activity satisfies all the criteria of "Tool for the demonstration and assessment of additionality"²⁵. Therefore, the project is additional, it has still ongoing financial need.

²⁴ Declaration have been provided to VVB.

²⁵ <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>

B.6. Sustainable Development Goals (SDG) outcomes

Sustainable Development Goals Targeted	Most relevant SDG Target	SDG Impact
		Indicator (Proposed or SDG Indicator)
SDG 13: Climate Action (mandatory)	13.3 by emission reduction	13.3.1
SDG 7: Affordable and clean energy	7.2 by using renewable energy systems	7.2.1
SDG 8: Decent work and economic growth	8.8 by employment and decent work	8.8.2
SDG 6: Clean water	6.3 by using renewable energy systems	6.3.1

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

• SDG 7

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

The project is expected to generate 112,000 MWh/annually. The project contributes to the following indicators 7.2.1 "Renewable energy share in the total final energy consumption" and following target: 7.2 "By 2030, increase substantially the share of renewable energy in the global energy mix"

Balance of Payments and Investment:

With 112,000 MWh power generation, the project is expected to avoid around 23,498,657 m³ natural gas import each year by generation of project activity, which is worth about 5,255,662 EUR per year.

Annual avoided natural gas import will be calculated as follows:

$$\text{Annually Avoided Natural Gas Import} = \left(\frac{\text{Amount of Natural Gas Combusted for Electricity Generation}}{\text{Amount of Electricity Generated with Natural Gas}} \right) \times (\text{Share of Import for Natural Gas Consumption in Turkey}) \times (\text{Net Annual Electricity Generation of Project Activity})$$

Value Avoided Imported Natural Gas by Project Activity (TL) will be calculated as follows:²⁶

$$= \text{Value Avoided Imported Natural Gas by Project Activity (TL)}$$

$$= \text{Amount of Avoided Imported Natural Gas by Project Activity (m}^3\text{)} \times \text{Price of Gas (TL/ m}^3\text{) in Turkey}$$

Value Avoided Imported Natural Gas by Project Activity (EUR) will be calculated as follows:²⁷

$$\text{Value Avoided Imported Natural Gas by Project Activity (EUR)} = \frac{\text{Value Avoided Imported Natural Gas by Project Activity (TL)}}{\text{EUR/TL (rate of Exchange for 2018)}}$$

²⁶ Reference of Price of Gas (TL/ m³) in Turkey for related year has been given in ER excel sheet.

²⁷ Reference of Rate of exchange (EUR/TL) for related year has been given in ER excel sheet.

- **SDG 8**

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

The project leads to employment opportunities which would not have been possible in the baseline scenario. The project provides employment to between 5 and 15 peoples during the operation phase. It contributes to the following target 8.8. and following indicator 8.8.2.

Furthermore, number of people (between 5 and 15 employees) are trained on health and safety issues during per each monitoring period. Training records or certificates will be provided during each monitoring period.

- **SDG 6**

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

The project's contribution to SDG is determined via a simple calculation that provides the overall amount of wastewater discharge avoidance with respect to the baseline scenario. With this approach, Average Amount of Wastewater Discharged per each GWh Electricity Generation is calculated prior to reaching value for Amount of Avoided Wastewater Discharge per year by Project Activity. The related calculations are as follow:

$$\text{Average Amount of Wastewater Discharged per each GWh Electricity Generation} = \frac{\text{Total Wastewater Discharged by Thermal Power Plants in 2018}}{\text{Total Electricity Generation in 2018}}$$

According to calculation given above, 24.7 m³ wastewater is discharged the environment due to each GWh electricity produced.

$$\text{Amount of Avoided Cooling Wastewater Discharge by Project Activity per year} = \text{Annual Electricity Generation of Project Activity within in MP} \times \text{Average Amount of Wastewater Discharged per each GWh Electricity Generation}$$

The project is expected to avoid of 2,765.8 m³ cooling wastewater discharge to the environment.

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

$$\begin{array}{ccccc} \text{Amount of Wastewater} & & & \text{Daily} & \\ \text{Discharged by Project Activity} & = & \text{Number of} & \text{water} & \\ \text{per year} & & \text{employees} & \text{usage} & \times 365 \\ & & & \text{per} & \\ & & & \text{worker} & \end{array}$$

Daily wastewater discharge of a person is found to be 0.150 m³ by the TURKSTAT. Assuming the project will employ at least 10 people, the total wastewater discharge of these 10 people in one year will amount to 10 x 0.150 x 365 = 548 m³ which is equal to 0.548 x 1000 m³/yr.

So that,

Net Amount of Avoided Wastewater Discharge by Project Activity = Amount of Avoided Cooling Wastewater Discharge by Project Activity - Amount of Generated Domestic Wastewater Discharge by Project Activity

The project is expected to avoid of 2,765.3 m³ net amount of wastewater discharge to the environment. It contributes to the following target 6.3. and following indicator 6.3.1.

• **SDG 13**

The annual emission reduction estimated by the project is 72,598 tonnes of tCO₂/year, approximately. While this amount of emissions are mitigated, technology transfer is also realized as benefitting from wind energy.

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

This project is expected to remove of CO₂: 72,598 tCO₂/year. It contributes to the following target 13.3 and following indicator 13.3.1.

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

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

According to this publication;

- Operating Margin-OM; **0,7258** tCO₂/MWh
- Build Margin-BM; **0,4153** tCO₂/MWh
- Combined Margin-CM (for solar and wind); **0,6482** tCO₂/MWh²⁸

Project emissions

The proposed project activity involves the generation of electricity by development of a wind farm. The generation of electricity does not result in greenhouse gas emissions and therefore is taken as 0 tCO₂/year.

Leakage

LE_y is 0, as it is not considered according to ACM0002 (page 10) PE_y is 0 because project is a wind power generation activity (Only for geothermal and hydro project activities, it should be considered according to ACM0002 page 7).

Then: $ER_y = BE_y$

Baseline emissions

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

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

Where:

BE_y = Baseline emissions in year y (tCO₂/yr).

EG_y = Electricity supplied by the project activity to the grid (MWh).

²⁸ <https://enerji.gov.tr/evced-cevre-ve-iklim-turkiye-ulusal-elektrik-sebekesi-emisyon-faktoru> or <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>

$EG_{baseline}$ = Baseline electricity supplied to the grid in the case of modified or retrofit facilities (MWh). For new power plants this value is taken as zero.

$EF_{grid,CM,y}$ = Combined margin CO2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system". (tCO₂/MWh) (v.4).

The project activity is the installation of a new grid-connected renewable power plant

so, $EG_{baseline} = 0$

Then:

$$ER_y = BE_y = EG_y * EF_{grid,CM,y} = 112,000 \text{ MWh/year} * 0.6482 \text{ tCO}_2/\text{MWh} = 72,598 \text{ tCO}_2/\text{year}$$

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

A brief explanation of this methodology is given in Tool as (page 4):

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

B.6.2 Data and parameters fixed ex ante

Data/parameter	EF_{grid,CM,y}
Unit	tCO ₂ /MWh
Description	For the combined margin CO ₂ emission factor that were used to calculate estimated emission reductions, publication of Turkish Ministry of Energy and Natural Resources which is indicating Turkey's National Electric Grid Emission Factor for the year of 2019 was used.
Source of data	Please see: https://enerji.gov.tr/evced-cevre-ve-iklim-turkiye-ulusal-elektrik-sebekesi-emisyon-faktoru or https://enerji.gov.tr/Media/Dizin/EVCED/tr/%C3%87evreVe%C4%B0klim/%C4%B0klimDe%C4%9Fi%C5%9Fikli%C4%9Fi/T%C3%BCrkiyeUlusalElektrik%C5%9EebekesiEmisyonFakt%C3%B6r%C3%BC/Belgeler/EK-2.pdf
Value(s) applied	0.6482 tCO ₂ /MWh
Choice of data or Measurement methods and procedures	The baseline emissions are the product of electrical energy baseline expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.
Purpose of data	To show CO ₂ e reduction in order to monitor the SDG 13 Indicator.
Additional comment	

SDG 13

Data / Parameter	EFgrid,BM,y
Unit	tCO ₂ /MWh
Description	For the emission BM factor, that were used to calculate estimated emission reductions, publication of Turkish Ministry of Energy and Natural Resources which is indicating Turkey's National Electric Grid Emission Factor for the year of 2019 was used. Publication includes calculated Emission Factor values that are Operating Margin (OM), Growth Based Margin (Build Margin-BM) and Combined Margin (CM) Emission Factors, for the relevant year with usage of the IPCC's Clean Development Methodology Tool 07-V06.0.
Source of data	Please see: https://enerji.gov.tr/evced-cevre-ve-iklim-turkiye-ulusal-elektrik-sebekesi-emisyon-faktoru or https://enerji.gov.tr/Media/Dizin/EVCED/tr/%C3%87evreVe%C4%B0klim/%C4%B0klimDe%C4%9Fi%C5%9Fikli%C4%9Fi/T%C3%BCrkiyeUlusalElektrik%C5%9EebekesiEmisyonFakt%C3%B6r%C3%BC/Belgeler/EK-2.pdf
Value(s) applied	0,4153 tCO ₂ /MWh
Choice of data or Measurement methods and procedures	Ministry of Energy and Natural Resources makes available the official data in Turkey. The latest data available during PDD preparation was for 2019.
Purpose of data	Used for baseline emissions
Additional comment	

Data / Parameter	EFgrid,OM,y
Unit	tCO2/MWh
Description	For the emission OM factor, that were used to calculate estimated emission reductions, publication of Turkish Ministry of Energy and Natural Resources which is indicating Turkey's National Electric Grid Emission Factor for the year of 2019 was used. Publication includes calculated Emission Factor values that are Operating Margin (OM), Growth Based Margin (Build Margin-BM) and Combined Margin (CM) Emission Factors, for the relevant year with usage of the IPCC's Clean Development Methodology Tool 07-V06.0.
Source of data	Please see: https://enerji.gov.tr/evced-cevre-ve-iklim-turkiye-ulusal-elektrik-sebekesi-emisyon-faktoru or https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%B0klim/%C4%B0klimDe%C4%9Fi%C5%9Fikli%C4%9Fi/T%C3%BCrkiyeUlusalElektrik%C5%9EebekesiEmisyonFakt%C3%B6r%C3%BC/Belgeler/EK-2.pdf
Value(s) applied	0,7258 tCO2/MWh
Choice of data or Measurement methods and procedures	Ministry of Energy and Natural Resources makes available the official data in Turkey. The latest data available during PDD preparation was for 2018.
Purpose of data	Used for baseline emissions
Additional comment	

SDG 7

Data/parameter	Gross electricity generation
Unit	MWh
Description	Gross Electricity supplied to the grid (2019)
Source of data	Turkish Electricity Transmission Company (TEİAŞ), Annual Development of Turkey's Gross Electricity Generation of Primary Energy Resources (2019) TEİAŞ

Value(s) applied	TEİAŞ (2019), please see: https://webapi.teias.gov.tr/file/5b2fb3e8-bf05-48b1-b2f0-20139c0cc7fb?download
Choice of data or Measurement methods and procedures	TEIAS is the national electricity transmission company, which makes available the official data of all power plants in Turkey.
Purpose of data	Used for baseline emissions
Additional comment	

SDG 7

Data / Parameter	Balance of payments and investment
Unit	-
Description	Savings on natural gas imports
Source of data	Monthly meter readings
Value(s) applied	Avoidance of around 23,498,657 m ³ natural gas import each year by generation (112.0 GWh/y) of project activity, which is worth about 5,255,662 EUR per year.
Choice of data or Measurement methods and procedures	According to TEİAŞ; 19,568,140 thousand m³ natural gas is consumed for electricity generation in 2018. In 2018 Electricity generation amount from natural gas is 92,483 GWh. Since Turkey imports 99.16% of consumed natural gas, it is calculated that for 1 GWh electricity generation 209,809.44 m³ natural gas is imported in 2018. Amount of annual net electricity generation, which is calculated by monthly settlement notifications of EPIAŞ based on monthly meter readings, will be used to calculate correspondent amount of currency saved by project activity with help of above calculated factor.
Purpose of data	Ensure access to affordable, reliable, sustainable and modern energy.
Additional comment	

SDG 6

Data / Parameter	Average amount of wastewater discharged
Unit	m³/GWh
Description	Average amount of wastewater discharged per GWh
Source of data	Turkish Electricity Transmission Company (TEİAŞ), Annual Development of Turkey's Gross Electricity Generation of Primary Energy Resources (2018) Turkish Statistical Institute (TURKSTAT), Wastewater Discharged by Thermal Power Plants (2018)
Value(s) applied	24.7 m ³ /GWh (According to official data links given below, 24.7 m ³ wastewater is discharged the environment due to each GWh electricity produced) TEİAŞ (2018) please see ; https://webapi.teias.gov.tr/file/512cbf1d-0ca3-4492-b901-3722c7b682f7?download TURKSTAT (2018) please see; Türkiye İstatistik Kurumu, Sektörel Su ve Atıksu İstatistikleri, 2018 (tuik.gov.tr)
Choice of data or Measurement methods and procedures	Coefficient for wastewater avoidance from potential cooling water operations calculated by taking Total Waste Water Discharged by Thermal Power Plants in the related year (publication of TURKSTAT data for the year of 2018, which is the most recent available data, was used) and Net Electricity Generation in the related year (publication of TEİAŞ data for the year of 2018 was used) TEIAS is the national electricity transmission company, which makes available the official data of all power plants in Turkey. TURKSTAT compile, evaluate, analyses and publish official statistics in the fields of economy, social issues, demography, culture, environment, science and technology, and in the other required areas in Turkey.
Purpose of data	Avoidance wastewater discharge to the environment
Additional comment	-

B.6.3 Ex ante estimation of SDG Impact

Calculation of the Operating Margin Emission Factor

For OM factor calculation, Chronological order of power generation plants from TEİAŞ Load Dispatch Department with, fuel types, electricity generation for the calculated year were used as input data. By using all of the data which were mentioned above, Turkish Ministry of Energy and Natural Resources calculated $EF_{grid,OMsimple,y}^{29}$:



$$EF_{grid,OMsimple,y} = 0.7258 \text{ (ktCO}_2\text{/GWh)}$$

Calculation of the Build Margin Emission Factor

For BM factor calculation, Chronological order of power generation plants from TEİAŞ Load Dispatch Department with commissioning dates, plant names, fuel types, installed power values, electricity generation for the calculated year were used as input data. Consequently, Turkish Ministry of Energy and Natural Resources calculated $EF_{grid,BM,y}^{30}$.



$$EF_{grid,BM,y} = 0.4153 \text{ tCO}_2\text{/MWh}$$

Calculating of the Combined Margin Emission Factor

The combined margin emission factor is calculated by using weighted average CM as per tool formula below:

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

$EF_{grid,BM,y}$ = Build margin CO₂ emission factor in year y (tCO₂/MWh)

$EF_{grid,OM,y}$ = Operating margin CO₂ emission factor in year y (tCO₂/MWh)

w_{OM} = Weighting of operating margin emissions factor (%)

w_{BM} = Weighting of build margin emissions factor (%)

²⁹ <https://enerji.gov.tr/evced-cevre-ve-iklim-turkiye-ulusal-elektrik-sebekesi-emisyon-faktoru> or <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>

³⁰ <https://enerji.gov.tr/evced-cevre-ve-iklim-turkiye-ulusal-elektrik-sebekesi-emisyon-faktoru> or <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 the Tool for wind power generation project activities;

$$w_{OM} = 0.75 \text{ and } w_{BM} = 0.25$$

Then:

$$EF_{grid,CM,y} = 0.7258 \text{ tCO}_2/\text{MWh} * 0.75 + 0.4153 \text{ tCO}_2/\text{MWh} * 0.25 = 0.6482 \text{ tCO}_2/\text{MWh}$$

→

$$EF_{grid,CM,y} = 0.6482 \text{ tCO}_2/\text{MWh}$$

Emission reductions are calculated as follows:

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

Where:

ER_y = Emission reductions in year y (t CO₂/yr).

BE_y = Baseline emissions in year y (t CO₂/yr).

PE_y = Project emissions in year y (t CO₂/yr).

LE_y = Leakage emissions in year y (t CO₂/yr).

Baseline emissions

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

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

Where:

BE_y = Baseline emissions in year y (tCO₂/yr).

EG_y = Electricity supplied by the project activity to the grid (MWh).

$EG_{baseline}$ = Baseline electricity supplied to the grid in the case of modified or retrofit facilities (MWh). For new power plants this value is taken as zero.

$EF_{grid,CM,y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system". (tCO₂/MWh) (v.4).

Leakage

LEy is 0, as it is not considered according to ACM0002 (page 10) PEy is 0 because project is a wind power generation activity (Only for geothermal and hydro project activities, it should be considered according to ACM0002 page 7).

Then: $ER_y = BE_y$

Emission Reduction

The project activity is the installation of a new grid-connected renewable power plant so, $EG_{baseline} = 0$

Then:

$$ER_y = BE_y = EG_y * EF_{grid,CM}, = 112,000 \text{ MWh/year} * 0.6482 \text{ tCO}_2/\text{MWh} = 72,598 \text{ tCO}_2/\text{year}$$

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

SDG 13 Climate Action

Year	Baseline estimate	Project estimate	Net benefit
27.10.2021-31.12.2021	13,127	0	13,127
2022	72,598	0	72,598
2023	72,598	0	72,598
2024	72,598	0	72,598
2025	72,598	0	72,598
2026	72,598	0	72,598
2027	72,598	0	72,598
01.01.2028-26.10.2028	59,670	0	59,670
Total	508,385	0	508,385
Total number of crediting years	7		
Annual average over the crediting period	72,598		72,598

SDG 6 Clean Water and Sanitation:

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

There would be a potential fossil fuel generation activity if this WPP would not come into implementation. In this scenario of electricity generation, there will be a significant wastewater that will be discharged into natural environments. The baseline value for a potential wastewater discharge due to a fossil fuel fired energy generation is calculated as follow³¹:

$$\text{Average Amount of WasteWater Discharged per each GWh Electricity Generation} = \frac{\text{Total WasteWater Discharged by Thermal Power Plants in 2018}}{\text{Total Electricity Generation in 2018}}$$

According to calculation given above, 24.7 m³ wastewater is discharged the environment due to each GWh electricity produced.

$$\text{Amount of Avoided Cooling Wastewater Discharge by Project Activity per year} = \text{Annual Electricity Generation of Project Activity within the MP} \times \text{Average Amount of Wastewater Discharged per each GWh Electricity Generation}$$

The project is expected to avoid of 2,765.8 m³ cooling wastewater discharge to the environment.

³¹ The data or factors used for this calculation are given in detail in the ER excel document with their references.

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

$$\begin{array}{ccccc} \text{Amount of Wastewater} & & & \text{Daily} & \\ \text{Discharged by Project Activity} & = & \text{Number of} & \text{water} & \\ \text{per year} & & \text{employees} & \text{usage} & \times 365 \\ & & & \text{per} & \\ & & & \text{worker} & \end{array}$$

Daily wastewater discharge of a person is found to be 0.150 m³ by the TURKSTAT. Assuming the project will employ at least 10 people, the total wastewater discharge of these 10 people in one year will amount to 10 x 0.150 x 365 =548 m³ which is equal to 0.548 x 1000 m³/yr.

So that,

Net Amount of Avoided Wastewater Discharge by Project Activity = Amount of Avoided Cooling Wastewater Discharge by Project Activity - Amount of Generated Domestic Wastewater Discharge by Project Activity

The project is expected to avoid of 2,765.3 m³ net amount of wastewater discharge to the environment. It contributes to the following target 6.3. and following indicator 6.3.1.

SDG 7 Affordable and Clean Energy

The baseline for the project is no project, thus leading to generation in the relevant grid which is dominated by fossil fuel. The clean energy generated by the project is calculated based on the amount of electricity generated by the project per annum. The project is expected to generate 112,000 MWh of clean energy per annum.

Year	Baseline estimate	Project estimate	Net benefit
27.10.2021-31.12.2021	0	20,252	20,252
2022	0	112,000	112,000
2023	0	112,000	112,000
2024	0	112,000	112,000
2025	0	112,000	112,000
2026	0	112,000	112,000
2027	0	112,000	112,000
01.01.2028-26.10.2028	0	91,748	91,748
Total	0	784,000	784,000
Total number of crediting years	7		
Annual average over the crediting period	0	112,000	112,000

Balance of payments and investment:

The project is expected to avoid of 5,255,662 EUR natural gas import by generation of project activity.

SDG 8 Decent Work and Economic Growth

The project will lead to employment opportunities which would not have been possible in the baseline scenario. The project provides between 5 and 15 employments. Also, project activity improves the quality of employment by giving training to employee. Thus, there will be series of training organized on with different focuces such as health and safety within Şadıllı WPP.

B.7. Monitoring plan

B.7.1 Data and parameters to be monitored

SDG 13 Climate Action

Target: 13.3

Indicator: 13.3.1

Data / Parameter	ERy
Unit	tons of CO2e/year
Description	Baseline emissions correspond to emission reductions and are calculated as the net electricity generated by the project activity, multiplied with combined margin CO2 emission factor for grid connected power generation in year y.
Source of data	Both measured and calculated Emission reductions will be calculated as considering the EPIAS records for the net electricity generated and the emission factor for the grid, 0.6482 tCO2/MWh, which is calculated and published by The Ministry of Energy and Natural Resources of Turkey ³² As per monitoring plan sheet of registered CM Excel. During the verification, the results shall be obtained from the Actual ER excel file.
Value(s) applied	72,598 tCO2/year
Measurement methods and procedures	Amount of annual net electricity generation, which is calculated by monthly settlement notifications of PMUM based on monthly meter readings, will be used to calculate estimated CO2 emission reduction by project activity.
Monitoring frequency	Annually
QA/QC procedures	-
Purpose of data	Calculation of combined margin CO2 emission factor and thus the baseline emissions-to demonstrate contribution to SDG Target 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
Additional comment	-

³² <https://enerji.gov.tr/evced-cevre-ve-iklim-turkiye-ulusal-elektrik-sebekesi-emisyon-faktoru> or <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>

SDG 7 Affordable and Clean Energy**Target: 7.2****Indicator: 7.2.1**

Data / Parameter	EG_{facility,y}
Unit	MWh/yr
Description	Quantity of net electricity generation supplied by the project plant to the grid in year <i>y</i>
Source of data	Electricity meter(s)
Value(s) applied	112,000 MWh/year
Measurement methods and procedures	Regarding the electricity meters: two meters are placed (one main and one reserve) at the Şadıllı WPP which meters the electricity transferred to TEİAŞ substation. These meters are sealed by TEİAŞ and intervention by project proponent is not possible. The fact that two meters are installed in a redundant manner keeps the uncertainty level of the only parameter for baseline calculation low. High data quality of this parameter is not only in the interest of the emission reduction monitoring, but paramount for the business relation between the plant operator and the electricity buyers. Measured hourly and readings monthly. Monthly settlement notifications of PMUM (Piyasa Mali Uzlaştırma Merkezi) consist hourly electricity production and withdrawn from the grid. Since the meters are reading electricity supplied to the system and withdrawn from the system separately, the net electricity amount supplied to the grid is calculated by electricity supplied minus electricity withdrawn which is be taken from monthly settlement notifications. The above described measurement method follows Article 81 of the official regulation "Electricity Market Balancing And Settlement Regulation"³³
Monitoring frequency	Monthly
QA/QC procedures	According to the Article 2 of the Communiqué of Meters in Electricity Sector ³⁴ : 'The meters to be used in the electricity market shall be compliant with the standards of Turkish Standards Institute or IEC and have obtained " Type and System Approval " certificate from the Ministry of Trade and Industry.' Therefore, Ministry of Trade and Industry (Ministry)

³³ See, http://www.epdk.gov.tr/documents/elektrik/mevzuat/yonetmelik/elektrik/dengeleme_uzlastirma/DUYson.doc page 55

³⁴ See, <http://www.epdk.org.tr/documents/10157/81c16fc9-7777-46d6-a1bf-15c5ac8795c7>

is responsible from control and calibration of the meters. Also according to Article 11 of this Communiqué, meters shall be in class of 0.5s, which means error interval for measuring is in $\pm 0.5\%$ range which is well acceptable according to rules.

Paragraph b) of the Article 9 of the 'Regulation of Metering and Testing of Metering Systems'³⁵ (Regulation) of Ministry states that: ' *b) Periodic tests of meters of electricity, water, coal gas, natural gas and current and voltage transformers are done **every 10 years.*** ' Therefore periodic calibration of the meters will be done every 10 years. Also according to Article 67 (page 20) of this regulation, the calibration shall be done in calibration stations which have been tested and approved by Ministry of Trade and Industry. Article 10 d) of Communiqué requires the meters shall be three phase four wire and Article 64 of Regulation clearly states how calibration shall be performed for this kind of meters.

On 03.10.2019, both main and backup meters have been changed as their official seals were expired. After 03.10.2019, following meters are being used³⁶. The specification of current electricity meters are provided below:

Current Main Electricity Meter with accuracy class of 0.5 S.

Manufacturer: EMH

Brand-Model: LZQJ-XC

Serial Number: 8088831

Date of installation 03/10/2019

Date of calibration (First Index Procokol)³⁷ : 03/10/2019

Validity of calibration: 03/10/2029

Year of Manufacture: 2018

Current Back-up Electricity Meter with accuracy class of 0.5 S.

Manufacturer: EMH

Brand-Model: LZQJ-XC

Serial Number: 8088832

Date of installation: 03/10/2019

Validity of calibration: 03/10/2029

³⁵ See, <http://www.mevzuat.adalet.gov.tr/html/21179.html>

³⁶ See, "Sayaç Değişim Protokolü" has been provided to VVB.

³⁷ See, "Sayaç Değişim Protokolü" has been provided to VVB.

	Date of calibration (First Index Protocol)³⁸ : 03/10/2019 Year of Manufacture: 2018 As above mentioned, the data acquisition and management and quality assurance procedures that are anyway in place, no additional procedures have to be established for the monitoring plan.
Purpose of data	To exhibit renewable electricity generation performance the plant
Additional comment	Plant Manager will be responsible for monitoring data.

SDG 7 Affordable and Clean Energy

Target: 7.2

Indicator: 7.2.1

Data / Parameter	Balance of payments and investment
Unit	-
Description	Savings on natural gas imports
Source of data	Monthly meter readings
Value(s) applied	According to TEİAŞ; 19,568,140 thousand m³ natural gas is consumed for electricity generation in 2018. In 2018 Electricity generation amount from natural gas is 92,483 GWh. Since Turkey imports 99.16% of consumed natural gas, it is calculated that for 1 GWh electricity generation 209,809.44 m³ natural gas is imported in 2018. Avoidance of around 23,498,657 m³ natural gas import each year by generation of project activity, which is worth about 5,255,662 EUR per year.
Measurement methods and procedures	TEİAŞ statistics for natural gas share in the electricity mix shall help to demonstrate the high import dependency. Amount of annual net electricity generation, which is calculated by monthly settlement notifications of EPIAŞ based on monthly meter readings, will be used to calculate correspondent amount of currency saved by project activity with help of above calculated factor.
Monitoring frequency	Annually
QA/QC procedures	-
Purpose of data	Ensure access to affordable, reliable, sustainable and modern energy.
Additional comment	-

³⁸ See, "Sayaç Değişim Protokolü" has been provided to VVB

SDG 8 Decent Work and Economic Growth

Target: 8.8

Indicator: 8.8.2

Data / Parameter	Quantitative employment and income generation
Unit	-
Description	Number of employments
Source of data	Social security records
Value(s) applied	The project provides between 5 and 15 employments
Measurement methods and procedures	Social Security System (SGK) records. Project owner will employ workers from the local villages in the Şadıllı WPP.
Monitoring frequency	Each monitoring period.
QA/QC procedures	SGK records of employees are provided during each monitoring period
Purpose of data	Employment and decent work for all
Additional comment	-

Data / Parameter	Quality of employment
Unit	-
Description	Quality of employment
Source of data	Health & Safety trainings
Value(s) applied	All employees will attend trainings on Health and Safety. HSE trainings will be held for employees at the plant.
Measurement methods and procedures	Training attendance list and/or certificates
Monitoring frequency	Annually (Once at the end of the each monitoring period). After first verification period, only new cases will be reported.
QA/QC procedures	Attendance records or training certificates are provided during each monitoring period.
Purpose of data	To exhibit employment performance of the plant
Additional comment	

SDG 6 Clean water and Sanitation

Target: 6.3

Indicator: 6.3.1

Data / Parameter	Water Quality and Quantity
Unit	m ³ /year
Description	Average amount of wastewater discharged per GWh
Source of data	EPİAŞ based on monthly meter readings
Value(s) applied	Avoidance of around 2,765.3 m ³ wastewater discharge to the environment per year.
Measurement methods and procedures	Coefficient for wastewater avoidance from potential cooling water operations calculated by taking Total Wastewater Discharged by Thermal Power Plants in the related year and Net Electricity Generation in the related year.
Monitoring frequency	Annually
QA/QC procedures	
Purpose of data	Avoidance wastewater discharge to the environment
Additional comment	-

Principle 9.4 - Release of pollutants

Data / Parameter	Other pollutants
Unit	N/A
Description	a) Noise level during operation of the project activity. b) Waste oil amount c) Solid household waste
Source of data	a) Interview with the head of village b) Removal receipts c) Garbage bins' photos
Value(s) applied	a) Letter from head of village regarding noise will be provided. b) Removal receipts will be provided. c) Garbage bins' photos will be provided.
Measurement methods and procedures	a)The noise level from turbines will be interviewed to the head of village b)Receipts of transfer of waste oil will be checked c)Garbage bins' photos will be checked
Monitoring frequency	a) At least once for each monitoring period b) At least once for each monitoring period c) At least once for each monitoring period
QA/QC procedures	-
Purpose of data	Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss.
Additional comment	-

Principle 9.10 - High Conservation Value Areas and Critical Habitats

Data / Parameter	Biodiversity
Unit	N/A
Description	Impact on bird migration routes
Source of data	Letter from the personnel or Ornithology report
Value(s) applied	The comments that have been raised by assigned project's employees who actively engage in project site (ie. around turbines etc.) controls is reviewed. PP conducted an assessment for the impact of project on bird life during reproduction period in 2020. After that, Ornithology report shall be repeated every 3 years.
Measurement methods and procedures	No bird mortality. The ornithological study states that the project is not expected to have a negative impact on birds.
Monitoring frequency	Once in a monitoring period
QA/QC procedures	-
Purpose of data	Preventing bird collisions.
Additional comment	-

Principle 4 – Cultural Heritage, Indigenous Peoples, Displacement and Resettlement

Data / Parameter	Livelihood of the Poor
Unit	N/A
Description	Livestock feeding
Source of data	Interview with stakeholders
Value(s) applied	Receiving comments from local people both on the project activity and on the livestock feeding during site visit.
Measurement methods and procedures	No access limitation at the project site for livestock.
Monitoring frequency	Only once during the first verification for second crediting period
QA/QC procedures	-
Purpose of data	Livestock feeding
Additional comment	-

Data / Parameter	Livelihood of the Poor
Unit	N/A
Description	Land acquisition
Source of data	Interview with stakeholders
Value(s) applied	Receiving comments from local people both on the land acquisition during site visit.
Measurement methods and procedures	Interviews to check whether the process is carried out properly according to legal requirements and that land owners are compensated fairly.
Monitoring frequency	Only once during the first verification for second crediting period
QA/QC procedures	-
Purpose of data	Land acquisition
Additional comment	-

Principle 9.1 - Landscape Modification and Soil

Data / Parameter	Other
Unit	N/A
Description	Erosion risk control at new roads
Source of data	Observation
Value(s) applied	Interview with Şadıllı WPP personnel. The erosion at the newly constructed roads will be minimised by limiting the slope and the curvature of the roads and by ensuring high road strength and stability.
Measurement methods and procedures	Visual inspection whether the roads have caused significant erosion.
Monitoring frequency	Only once during the first verification for second crediting period
QA/QC procedures	-
Purpose of data	Soil Condition
Additional comment	-

Principle 9.2 - Vulnerability to Natural Disaster

Data / Parameter	Other
Unit	N/A
Description	Earthquake risk
Source of data	EIA study
Value(s) applied	In the HSE (occupational health and safety) trainings, all employees are informed related to the earthquake.
Measurement methods and procedures	Earthquake insurance is taken out for the project.
Monitoring frequency	Only once during the first verification for second crediting period
QA/QC procedures	-
Purpose of data	Soil Condition
Additional comment	-

B.7.2 Sampling plan

N/A

B.7.3 Other elements of monitoring plan

As the necessary baseline emission factors are all defined ex ante (Operating and Built Margin, see baseline description), the most important information to be monitored is the amount of electricity fed into the grid by Şadıllı WPP. This value will be monitored continuously by redundant metering devices, one of them being the main one in the substation, which provides the data for the monthly invoicing to TEİAŞ. The collected data will be kept by Şadıllı during the crediting period and until two years after the last issuance of VERs for the Şadıllı WPP activity for that crediting period.

Given a data vintage based on ex ante monitoring and selection of a renewable 7 year crediting period, the Combined Margin is recalculated at any renewal of the crediting period using the valid baseline methodology.

In case of a backup power generator would be installed in power plant for emergency cases the emission on the generator will be negligible according to the Methodology ACM0002 version 20.

Potential leakage emissions in the context of power sector projects are emissions arising due to activities such as power plant construction, fuel handling and land inundation. However, according to the methodology, those emission sources do not need to be taken into account.

Operational and Management Structure

Data handling was slightly revised due to innovation in technology that enables TEİAŞ to read meters remotely. Thus, under this process, the meter is read remotely at the end of every month and published through website of TEİAŞ that can be accessed by project owner to check the correctness of the data. Besides, project owner carries monthly protocol to crosscheck the data. By this way a crosscheck is done. Once the meter data is correct then the amount is also published in EPIAŞ website that is also accessible by project owner. When all data is correct, an invoice (receipt of sale) is prepared by Çanres Elektrik and delivered to TEİAŞ. The electricity generation amount, the collected data, are kept in both hardcopy and softcopy in daily and monthly basis indefinitely. Moreover, these data are submitted to several authorized people. Thus, several additional copies of these data are stored at different computers. The collected data during the monitoring period will be kept by the project owner at least two years after the last issuance of VERs

As the necessary baseline emission factors are all defined ex ante, the only information to be monitored is the amount of electricity fed into the grid by Şadıllı WPP. The data that is base for the invoices and published in EPIAŞ website is used as input for emission reduction calculation.

The fact that two reliable best practice meters are installed in a redundant manner keeps the uncertainty level of the only parameter for baseline calculation low.

High data quality of this parameter is not only in the interest of the emission reduction monitoring, but paramount for the business relation between the plant operator and the electricity buyer. Since the meters are reading electricity supplied to the system and withdrawn from the system separately, the net electricity amount supplied to the grid will be calculated by electricity supplied minus electricity withdrawn which will be taken from monthly settlement notifications.

Monthly data from TEIAS are stored electronically on TEIAS website and this data can be accessed by login of Project Developer. Çanres Elektrik also stores a hardcopy of the monthly meter reading protocols for back up of systematic storage of data.

Moreover, there are always internal reviews of the meters data that is checked by different parties. First of all, data of the meters is collected by technicians daily in written forms. The data collected daily is saved in plant manager computer and backed up. Besides the data that can be get from meters, production amount can be checked from SCADA system. SCADA figures differ a bit with meter data due to internal losses.

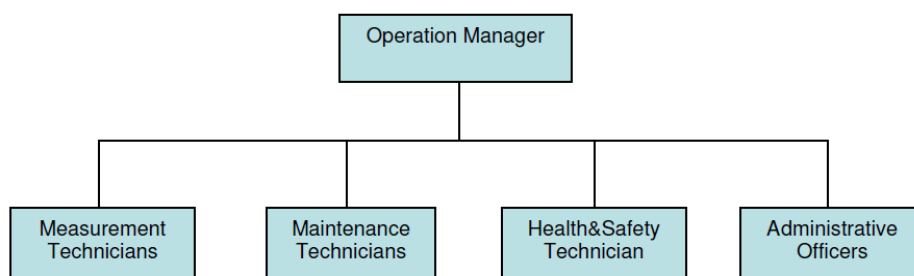


Figure 5: Operation and Management diagram

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

Because of the data acquisition and management and quality assurance procedures that are anyway in place, no additional procedures have to be established for the monitoring plan. Dedicated emergency procedures are not provided, as there is no possibility of overstating emission reductions due to emergency cases.

SECTION C. DURATION AND CREDITING PERIOD

C.1. Duration of project

C.1.1. Start date of project

The project activity begins in 28/02/2012, the date of equipment order signed between Şadıllı and GE Energy.

C.1.2. Expected operational lifetime of project

The expected lifetime of the Şadıllı WPP is 25 years.

C.2. Crediting period of project

C.2.1. Start date of crediting period

Start date of the first crediting period: 27/10/2014

End date of the first crediting period: 26/10/2021 (Crediting period of the project is 7 years which is once renewable)

Start date of the second crediting period: 27/10/2021

End date of the second crediting period: 26/10/2028

C.2.2. Total length of crediting period

7 years, renewed once.

SECTION D. SUMMARY OF SAFEGUARDING PRINCIPLES AND GENDER SENSITIVE ASSESSMENT

D.1. Safeguarding Principles that will be monitored

Principles	Mitigation Measures added to the Monitoring Plan
Principle 9.4 Release of pollutants	Noise level will be interviewed by head of village regularly.
Principle 9.4 Release of pollutants	Waste oil will be vacuumed by vacuum truck regularly. By this way, discharge of plant sourced waste oil will not be allowed. Solid household waste will be monitored with Garbage bins' photos.
Principle 4 – Cultural Heritage, Indigenous Peoples, Displacement and Resettlement	Comments will be received from local people both on the project activity and on the livestock feeding regularly. Local stakeholder comments will be received to monitor the land acquisition.
Principle 9.10 - High Conservation Value Areas and Critical Habitats	Bird strikes or carcass will be interviewed by local people and assigned Şadıllı WPP personnel.
Principle 9.1 - Landscape Modification and Soil	Erosion risk will be interviewed by Şadıllı WPP personnel.
Principle 9.2 - Vulnerability to Natural Disaster	All construction codes are maintained and necessary construction permits are obtained. Earthquake insurance is taken out for the project. In the HSE (occupational health and safety) trainings, all employees are informed related to the earthquake.

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

Question 1 - Explain how the project reflects the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy?	Gold Standard Gender Policy (https://globalgoals.goldstandard.org/101-1-g-gold-standard-gender-policy/), p. 10 "Foundational gender-sensitive requirement - This strengthens Gold Standard's 'do no harm' approach and addresses safeguards to prevent or mitigate adverse impacts on women or men and girls and boys. Such action is mandatory for all projects seeking Gold Standard certification and includes compliance with the gender 'do no harm' safeguards, gender gap analysis and gender sensitive stakeholder consultations." The project is a renewable energy project and not gender sensitive project. The project does not impact women or men, negatively.
Question 2 - Explain how the project aligns with existing country policies, strategies and best practices	The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis. Turkey signed the convention of International Labour Organization. The related articles are 100 and 111. The project owner respects Article 5/8425 of Labour Law; Which states no discrimination based on gender, race, religion, sexual orientation or any other basis is allowed.
Question 3 - Is an Expert required for the Gender Safeguarding Principles & Requirements?	No. The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis.

Question 4 - Is an Expert required to assist with Gender issues at the Stakeholder Consultation?	No. At the Stakeholder Consultation, women are free to say anything regarding the project. Their opinions and comments are also taken into account while evaluating the project at the Stakeholder Consultation.
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SECTION E. SUMMARY OF LOCAL STAKEHOLDER CONSULTATION

E.1. Summary of stakeholder mitigation measures

The Local Stakeholder Consultation meeting following the procedures and guidance of Gold Standard v.2.1 Toolkit has been organized in the Village Chamber of the Elmalı Village (closest village to the Project site) on 20/06/2012. Identified stakeholders are invited through different ways of communication such as post, e-mail or fax. They are also (mostly) contacted via phone to inform or confirm the delivery of the invitations. Apart from these, other media such as newspapers and wall announcements are also used for public announcement.

The Project does not result in any involuntary resettlement in the region. Feedbacks the Project owner informally receives from local communities suggest that the stakeholders are in general supportive for the Project and are mostly interested in employment opportunities the Project might create.

As for the LSC meeting, the outcomes of the meeting can be summarized as following:

- The meeting was carried out such that participants could freely suggest their own ideas about the Project. The meeting is conducted with a satisfactory organization and the free-speech atmosphere of the meeting was not disturbed by any participant.
- Stakeholders are already knowledgeable in the wind power technology. In general, participants believe that the Project will have a contributing role. After the consultation process, there is no outstanding issue left and the stakeholders are satisfied with the answers they received and the Project itself. In general, local participants are positive and supportive for the Project.

The comments of stakeholders are positive and do not require the Project owner to take due account.

For the renewal of crediting period, on-site visit has not been conducted for the validation of project activity due to travel restrictions imposed due to COVID-19 pandemic. Regarding the renewable crediting period, site visit with VVB also made by online meeting on 16/03/2021. Local villagers were asked if they had any problems or complaints about the impacts of the project (recent situation of the land etc.) during the remote audit. There was no negative feedback from the stakeholders on these issues or any other issues. So, it is validated that there were no negative comments from the stakeholders during the remote audit. The local people have been interviewed and the general outcome of the interviews was already positive verbally.

Stakeholders and PP have an ongoing communication which is positive and easy, this is confirmed through remote site visit conversations. Logbook and contact information is available to Mukhtars of nearby villages, declarations by Mukhtars available to VVB. Although the general outcome of the discussions with the local people is positive verbally, the project owner will regularly follow up with the local people whether they have any problems or requests. Continuous Input Process Book (Logbook) which was provided to Muhtar of Elmalı village. What's more, thanks to the Grievance Mechanism, local stakeholders will have a chance to submit their requests and complaints to the project owner about the project.

E.2. Final continuous input / grievance mechanism

Method	Include all details of Chosen Method (s) so that they may be understood and, where relevant, used by readers.
- Continuous Input / Grievance Expression Process Book - Electronically Grievance Expression	- Continuous Input Process Book was provided to Muhtar of Elmalı village. Muhtar is the representative of the village and most appropriate person to handle the book and complaints from the village. - All project information regarding project will be on the website of Life Enerji enabling stakeholders to reach and comment.
GS Contact (mandatory)	help@goldstandard.org
Muhtar of Elmalı Village :	Mehmet Çoban

APPENDIX 1 - SAFEGUARDING PRINCIPLES ASSESSMENT

Assessment Questions/ Requirements	Justification of Relevance (Yes/potentially/no)	How Project will achieve Requirements through design, management or risk mitigation.	Mitigation Measures added to the Monitoring Plan (if required)
Principle 1. Human Rights			
1. The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights 2. The Project shall not discriminate with regards to participation and inclusion	1.Yes 2.Yes	The project respects internationally proclaimed human rights including dignity, cultural property. Turkey is a party to Universal Declaration of Human Rights: http://ua.mfa.gov.tr/detay.aspx?2634	Turkey is a party to the Universal Declaration of Human Rights, therefore does not violate these rights and it's not a matter of discussion for Turkey.

Principle 2. Gender Equality			
1. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women 2. Projects shall apply the principles of non-discrimination, equal treatment, and equal pay for equal work 3. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks 4. (where required) Summary of	1.Yes 2.Yes 3.Yes 4.-	The project does not involve in any form discrimination in any kind of form. Turkey is also party to Convention on Discrimination since 1967 to prevent any form of discrimination; http://ua.mfa.gov.tr/files.ashx?872	In the main office of the project owner company there are women employees as well. Therefore, project contributes to recognition of women rights implicitly.

opinions and recommendations of an Expert Stakeholder(s)			
Principle 3. Community Health, Safety and Working Conditions			
1. The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community	1.Yes	The closest settlement to the project site is Elmalı Village which is located about 2.9 km to the nearest turbine in the project site. ³⁹ Therefore, shadow flickering impact is negligible as the nearest residential area is 2.9 km away for this project. It is concluded that the project will not cause significant shadow flickering on the closest settlements.	N/A
Principle 4.1 Sites of Cultural and Historical Heritage			
Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or	1.No	N/A	N/A

³⁹ Please see AECOM report.

intangible forms of culture?			
>>			
Principle 4.2 Forced Eviction and Displacement			
Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)?	1.No	N/A	N/A
>>			
Principle 4.3 Land Tenure and Other Rights			
Does the Project require any change, or have any uncertainties related to land tenure arrangements and/or access rights, usage rights or land ownership?	1.No	N/A	N/A
>>			
Principle 5. Corruption			
1. The Project shall not involve, be	1.Yes	The project does not involve any kind of corruption.	The Project owner has not any negative track record related to

complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects		Turkey is a party to United Nation Convention against Corruption since 2006; http://ua.mfa.gov.tr/detay.aspx?15042	corruption or any such activity whatsoever.
Principle 6.1 Labour Rights			
1. The Project Developer shall ensure that all employment is in compliance with national labour occupational health and safety laws and with the principles and standards embodied in the ILO fundamental conventions 2. Workers shall be able to establish and join labour organisations 3. Working agreements with	1.Yes 2.Yes 3.Yes 4.Yes 5.Yes	Project owner protects labours rights of all employees within this company. Workers might have occupational accidents during construction and operation phase. According to project developer, during construction and operational phase of the project "Health and Occupational Safety Regulation" will be followed. Regulation could be found under this link too: http://www.mevzuat.gov.tr/MevzuatMetin/1.5.6331.pdf	Necessary health and safety measures will be taken during operation phase according the regulation of health and safety requirements in construction Works (http://www.resmigazete.gov.tr/eski ler/2013/10/20131005-2.htm)., Additionally, relevant staff will be trained to be able to work with high voltages, high heights and heavy machineries.

all individual workers shall be documented and implemented and include: a) Working hours (must not exceed 48 hours per week on a regular basis), AND b) Duties and tasks, AND c) Remuneration (must include provision for payment of overtime), AND d) Modalities on health insurance, AND e) Modalities on termination of the contract with provision for voluntary resignation by employee, AND			
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f) Provision for annual leave of not less than 10 days per year, not including sick and casual leave. 4. No child labour is allowed (Exceptions for children working on their families' property requires an Expert Stakeholder opinion) 5. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency			
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preparedness and response measures			
Principle 6.2 Negative Economic Consequences			
1. Does the project cause negative economic consequences during and after project implementation?	1.No	On the contrary, it supplies job opportunities for local people. By this way, it contributes improvement of economy.	N/A
>>			
Principle 7.1 Emissions			
Will the Project increase greenhouse gas emissions over the Baseline Scenario?	1.No	On the contrary, it helps to reduce GHG emissions by producing green energy.	N/A
>>			
Principle 7.2 Energy Supply			
Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource	1.Partially	Plant sometimes can use energy from local grid in the absence of wind. However, this amount is really less when it is compared with its production of green energy amount.	N/A

(such as wood, biomass) that provides for other local users?			
>>			
Principle 8.1 Impact on Natural Water Patterns/Flows			
Will the Project affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	1.No	N/A	N/A
>>			
Principle 8.2 Erosion and/or Water Body Instability			
Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion?	1.No	The project is being implemented in a proper way (by considering the concerns indicated via the entire principle 4.2.2 Erosion and/or Water Body Instability): There is no interruption to the hydrological systems in a WPP	N/A

>>			
Principle 9.1 Landscape Modification and Soil			
Does the Project involve the use of land and soil for production of crops or other products?	1.No	The project is being implemented in a proper way (by considering the concerns indicated via the entire principle Landscape Modification and Soil): Only potential impact to soil would be observed due to construction activities of the project, and these negligible impacts are not permanent. Furthermore, there is an access road to the project area so that there is no problem in accessing the area. The necessary attention to be paid to the speed limits of the trucks and the material inside the trucks will be covered. Trucks to be loaded in line with the axle load and will not be overloaded, the top 10% of the material to be moisturised.	N/A
>>			
Principle 9.2 Vulnerability to Natural Disaster			
Will the Project be susceptible to or lead to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other	1.No	The project is being implemented in a proper way (by considering the concerns indicated via the entire principle Vulnerability to Natural Disaster): The project area is not a place to specific extreme climatic conditions and harmful natural events such as earthquake.	N/A

extreme climatic conditions?			
>>			
Principle 9.3 Genetic Resources			
Could the Project be negatively impacted by or involve genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development, or take place in facilities or farms that include GMOs in their processes and production)?	1.No	The project is being implemented in a proper way (by considering the concerns indicated via the entire principle 4.3.3 Genetic Resources): There is no relevance to GMO of a Wind Power Plant.	N/A
>>			
Principle 9.4 Release of pollutants			
Could the Project potentially result in the release of pollutants to the environment?	1.No	N/A	Wastewater will be vacuumed by vacuum truck regularly. By this way, discharge of plant sourced wastewater will not be allowed. Solid household waste will be monitored with Garbage bins' photos.
>>			
Principle 9.5 Hazardous and Non-hazardous Waste			

Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?	1.No	The proposed project activity is a renewable energy project and doesn't involve any hazardous chemicals & other materials. the host party has its credible legislation "Health and Occupational Safety Regulation". Regulation could be found under this link too: http://www.resmigazete.gov.tr/eskiler/2012/06/20120630-1.htm	All relevant legal building codes will be applied appropriately.
>>			
Principle 9.6 Pesticides & Fertilisers			
Will the Project involve the application of pesticides and/or fertilisers?	1.No	N/A	N/A
>>			
Principle 9.7 Harvesting of Forests			
Will the Project involve the harvesting of forests?	1.No	The project is being implemented in a proper way (by considering the concerns indicated via the entire	N/A
>>			

		principle 4.3.7 Harvesting of Forests): There has not been a significant forestation during the construction phase (i.e. project has been approved as EIA positive) and the project does not involve an operation that requires forest harvesting.	
Principle 9.8 Food			
Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	1.No	The project is being implemented in a proper way (by considering the concerns indicated via the entire principle 4.3.8 Food): The project does not involve any operation that disrupt husbandry and agriculture in the region.	N/A
>>			
Principle 9.9 Animal husbandry			
Will the Project involve animal husbandry?	1.No	The project is being implemented in a proper way (by considering the concerns indicated via the entire principle 4.3.9 Animal husbandry): The project does not involve any operation that	N/A
>>			

		disrupt husbandry and agriculture in the region.	
Principle 9.10 High Conservation Value Areas and Critical Habitats			
Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified?	1.No	N/A	N/A
>>			
Principle 9.11 Endangered Species			
Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)? AND/OR	1.No	N/A	N/A

Does the Project potentially impact other areas where endangered species may be present through transboundary affects?			
>>			

APPENDIX 2- CONTACT INFORMATION OF PROJECT PARTICIPANTS

Organization name	Çanres Elektrik Üretim A.Ş.
Registration number with relevant authority	
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