



Gold Standard[®]
for the Global Goals

TEMPLATE

KEY PROJECT INFORMATION & PROJECT DESIGN DOCUMENT (PDD)

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VERSION v. 1.2

RELATED SUPPORT

- TEMPLATE GUIDE Key Project Information & Project Design Document v.1.2

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Key Project Information

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KEY PROJECT INFORMATION

GS ID of Project	GS655
Title of Project	Soma Wind Power Plant
Time of First Submission Date	04/07/2022
Date of Design Certification	23/01/2012 (CP1-First Crediting Period) 12/07/2022 for Design Renewal Certification
Version number of the PDD	09.0
Completion date of version	18/11/2022
Project Developer	Bilgin Güc Santralleri Enerji Üretim A.Ş.
Project Representative	Bilgin Güc Santralleri Enerji Üretim A.Ş.
Project Participants and any communities involved	Bilgin Güc Santralleri Enerji Üretim A.Ş.
Host Country (ies)	Turkey
Activity Requirements applied	<input type="checkbox"/> Community Services Activities <input checked="" type="checkbox"/> Renewable Energy Activities <input type="checkbox"/> Land Use and Forestry Activities/Risks & Capacities <input type="checkbox"/> N/A
Scale of the project activity	<input type="checkbox"/> Micro scale <input type="checkbox"/> Small Scale <input checked="" type="checkbox"/> Large Scale
Other Requirements applied	N/A
Methodology (ies) applied and version number	01- ACM0002: Grid-connected electricity generation from renewable sources --- Version 20.0
Product Requirements applied	<input checked="" type="checkbox"/> GHG Emissions Reduction & Sequestration <input type="checkbox"/> Renewable Energy Label <input type="checkbox"/> N/A
Project Cycle:	<input checked="" type="checkbox"/> Regular <input type="checkbox"/> Retroactive



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Table 1 – Estimated Sustainable Development Contributions

Sustainable Development Goals Targeted	SDG Impact (defined in B.6.)	Estimated Annual Average	Units or Products
SDG 13 Climate Action	Emission Reductions	CO ₂ : 199,321 tCO ₂ /yr CO: 30.05 tons/yr NMVOC: 2.89 tons/yr NO _x : 348.90 tons/yr	VERs tons/yr
SDG 7 Affordable and clean energy	MWh of renewable energy generated	307,500	MWh/yr
SDG 8 Decent work and economic growth	Number of employees and Trainings given	15 people 1	Number Training/employee/y
SDG 6 Clean water and Sanitation	Avoidance of wastewater discharge by thermal power plants and Avoidance of wastewater discharge the project activity due to domestic use	8,006,243 m ³	m ³



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SECTION A. DESCRIPTION OF PROJECT

A.1 Purpose and general description of project

Bilgin Güc Santralleri Enerji Üretim A.S. installed 36 wind turbines, each having a capacity of 2.5 MW in Soma and Kirkagac Towns. 12 of the turbines are located in Kirkagac on East of the province and 24 of them are on West in Soma Town. EMRA granted Soma WPP with a Generation License on 17/07/2008. The project activity was implemented in 3 phases. The power plant started operation with 13 turbines on 13/08/2010, 11 turbines were commissioned 23/09/2010 and the remaining 12 turbines were commissioned on 11/11/2010.

The turbines (3-Bladed) of the project are located on four hills namely: Davullu, Karadede, Ören and Şifa hills and cover an area of 150 hectares. The site selection is based on detailed wind measurements, smoothness of the surface, availability of the topographical conditions for access and construction, the available area size and the distance to the national grid connection point: The connection point is Soma B Thermal Power Plant TM, 154 KV bara.

EMRA revised the Generation License of the Project Activity on 18/04/2019 to have a total capacity of 120 MW. On 05/11/2016, seven additional turbines, each having a capacity of 3.0 MW, started generating electricity and on 16/12/2016, three additional turbines, each having a capacity of 3.0 MW started generating electricity so that the total capacity of the project reached 120 MW. There are currently 46 wind turbines operating in the project activity. As per the Generation License for the installed capacity of 120 MW, the Project Activity produces 420,000 MWh of electricity per year. However, since the Project did not undergo a design change procedure under GS, emission reduction claims will be conducted with the 90 MW registered capacity. As per the Feasibility Report prepared by Garrad Hassan for 90 MW registered capacity, 307,500 MWh electricity is generated yearly. Considering this yearly generation amount stated in the license, the project activity will result in an annual emission reduction of 199,321 tons of CO₂e. Moreover, project activities will further disseminate wind energy and extension of national power generation.

With a total capacity of 90 MW, the plant's estimated electricity generation is 307,500¹ MWh per year. The voltage is stepped up to 154 kV, and the power is fed to the grid through the Soma B Termik Santrali TM (Substation) of the Turkish Electricity Transmission Company (TEİAŞ). An estimated generation of 307.5 GWh per year by the efficient utilization of the available wind energy by project activity replaces the grid electricity, which comprises different fuel sources, mainly fossil fuels.

Table 2: Project Implementation Schedule0.71

Major Event	Date
Investment decision Date	03/06/2008
License Date:	17/07/2008
Signing of ERPA	08/10/2008
LSC Meeting	10/11/2008
Last Modification to license	07/04/2009
Turbine Supply and Installation Agreement	06/07/2009
DOE Agreement	21/05/2009
Construction/ Recruitment Start Date	20/08/2009
DOE Site Visit	25/08/2009
LSC Report Uploaded to APX/GS Registry	22/01/2009
LSC Feedback report uploaded	18/09/2009
Partial Commissioning Date (first 32.5 MW –T1-T13)	13/08/2010
First Crediting Period Start Date	13/08/2010
First Monitoring Period Start Date	13/08/2010
Partial Commissioning Date (next 27.5 MW T14-T24)	23/09/2010
Full Commissioning Date (next 30 MW T25-T36)	11/11/2010
Registration Date under GS	23/01/2012
First Monitoring Period End Date	30/06/2012
Second Monitoring Period Start Date	01/07/2012
Second Monitoring Period End Date	31/12/2012
First Crediting Period End Date	12/08/2017
Second Crediting Period Start Date	13/08/2017
Generation License amendment date	18/04/2019
Second Crediting Period End Date	12/08/2024

The Project Activity has undergone two verifications, as seen from the above table. However, between 01/01/2013 – 12/08/2017, no verification was conducted due to the fact that the VER credits prices were quite low during those times in which this project should have held its verification process. Unfortunately, considering the cost of

¹ Feasibility Report prepared by Garrad Hassan

consultancy, VVB and GS fees for a verification process, it was not additional financial burden for Project Owner without meaningful revenue, to verify and issue the associated VERs. This was why the Project Owner of Soma Wind Power Plant did not initiate a verification process back then.

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A.1.1. Eligibility of the project under Gold Standard

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 2.1.2 a) and 2.1.2 b) of the Eligible Project Types 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.

a) General Eligibility Criteria under Renewable Energy Activity Requirements

Project Type: The project type is eligible as discussed above. Soma WPP is a wind power project. There is no change regarding the type of the project during this renewal of the crediting period.

- #### b) Project Location: The Project is located in Turkey, which is not located in an HCV area. The location of the project is given under Section A.2 of this report. For this renewal of crediting period, there is no change in the location of the Soma WPP. Soma wind power plant project seeks registration only in the GS4GG program. The proposed project activity has not participated in other emissions trading programs, other binding limits, other forms of environmental credits or other GHG programs. Any other GHG programs do not reject this Project. Therefore, no double counting of impacts is potentially in this project activity. This

information is confirmed in the no-double counting declaration by the project owner. Thus, the Project is eligible.

- c) Project Scale: The Project is a large-scale project. For this renewal of crediting period, there is no change in the scale of the Soma WPP.
- d) Host Country Requirements: There are no additional laws that came into force that have an impact on the project activity, and the project activity is still in line with the available law and regulations. The project activity 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 law on gender equality, the land law. Bilgin Enerji has been granted a generation license as WPP for a 120 MW wind power plant by EMRA. "Environmental Impact Assessment (EIA) Is Not Required" certificate was granted on 02 April 2013 to the Project Activity for 120 MW installed capacity by the Ministry of Environment and Urban Planning.

Contact Details: This information has been given under Appendix 2 in this PDD. There is no change regarding information about the contact details of the Soma WPP.

- Legal Ownership: This information has been given in PDD. The Legal Ownership specified in the first crediting period has not changed after the renewal of crediting period. Bilgin Güç Santralleri Enerji Üretim A.S. 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 have not changed after the crediting period renewal process. Bilgin Güç Santralleri Enerji Üretim A.S. has the legal rights for the VER credits that will be issued under Gold Standard. As per the latest Generation License dated 18/04/2019 the name of the company was changed from Bilgin Rüzgar Santrali Enerji Üretim A.Ş.(this former name was presented in the generation license dated 17/07/2008) to Bilgin Güç Santralleri Enerji Üretim A.Ş. Additionally, as per Trade Registry Gazette dated 14/03/2019 (provided to the VVB for review), two separate legal entity being Bilgin Rüzgar Santrali Enerji Üretim A.Ş. and Bilgin Güç Santralleri Enerji Üretim A.Ş. were united to be one legal entity with the latest official legal name of Bilgin Güç Santralleri Enerji Üretim A.Ş.

- Official Development Assistance (ODA) Declaration: The project developer has already submitted the Official Development Assistance (ODA) declaration.

- The project helps Turkey stimulate and commercialise the use of grid-connected renewable energy technologies and markets. After the renewal of crediting period, the project type has not changed. So, it is still an eligible type under Gold Standard for the Global Goals. In addition, Soma WPP demonstrates its contribution to the Sustainable Development Goals and impact on SDG 13, SDG 8, SDG 7 and SDG 6. The project contributed to mentioned SDGs (SDG 13, SDG 8, SDG 7, SDG 6) before the renewal of crediting period. The project also will continue to contribute with many Safeguarding Principles as it did in the first crediting period. There was no update after the 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 and second crediting periods. There will be no changes to the Eligibility Principles, Criteria and Requirements during this new crediting period.
- After the renewal of crediting period, there were no updates to the Gold Standard activity, product, and methodology specific Requirements. For this crediting period, the specified product requirements are the same; Product Requirements applied: GHG Emissions Reduction & Sequestration, Units/Products: VERs

Soma WPP is not registered with any other voluntary or compliance schemes, and no potential exists for double counting of impacts. No GHG related environmental credits are applied to the Turkish power sector. Moreover, Turkey's GS655 Soma Wind Power Plant Project 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 Bilgin Güc Santralleri Enerji Üretim A.S.2. If any such risk of double counting exists in Turkey, the Project Developer (Bilgin Güc Santralleri Enerji Üretim A.S.) shall retire eligible units equal to the quantity of Gold Standard VERs.

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

Bilgin Güc Santralleri Enerji Üretim A.S. is the developer and owner of the Project.

The Republic of Turkey is the host country. Turkey has recently ratified the Kyoto Protocol (on 5 February of 2009). Turkish National Focal Point to the UNFCCC is the Ministry of Environment and Forestry³.

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

Environmental

The project activities replace the grid electricity, which comprises different fuel sources causing greenhouse gas emissions. By substituting in the consumption of these fuels, it contributes to the conservation of water, soil, flora, and faunas. It transfers these natural resources and the additional supply of these primary energy sources to future

² Necessary Commitment Letter has been provided to the VVB.

³ UNFCCC, list of the National Focal Points <https://unfccc.int/process/parties-non-party-stakeholders/parties/national-focal-point>

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, most 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) from the extraction, processing, transportation, and burning of fossil fuels for power generation connected to the national grid.

Economical

Firstly, the Project helps 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 the sector, are encouraged to invest in wind power generations. It also assists in reducing Turkey's increasing energy deficit and diversifying the electricity generation mix while reducing import dependency. Importantly, rural development is maintained in the areas around the project site by providing infrastructural investments to these remote villages.

Social

All project activities enhance local employment during the construction and operation of the wind farm. As a result, increased job opportunities and project trade activities partially eliminated local poverty and unemployment. Construction materials for the foundations, cables, and other auxiliary equipment were preferentially sourced locally. Moreover, as a contribution of the Project to the region's welfare, the quality of the electricity consumed in the region is increased by local electricity production, which also contributes to decreasing distribution losses.

Technological

The proposed Project's implementation contributes to the broader deployment of wind power technology locally and nationally. It demonstrates the viability of larger grid-connected wind farms that support improved energy security, alternative sustainable energy, and renewable energy industry development. This will also strengthen the pillars of the Turkish electricity supply based on ecologically sound technology



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A.2 Location of project

The turbines that are in the scope of this Crediting Period were located in Soma and Kirkagac Towns. 12 of the turbines are located in Kirkagac on East of the province and 24 of them are on West in Soma Town. More specifically, the turbines of the project are located on four hills namely: Davullu, Karadede, Ören and Şifa hills and cover an area of 150 hectares⁴. The closest settlement to the nearest turbine is Gökteş Village in Kozluören, which is approximately 1130 m away.



Figure 1: Location of the turbines operational in the Project Activity

⁴ Please See Page 17 of the latest PIF dated 04/2013

Table 3: Geographical coordinates of the turbines operational in the Project Activity⁵

Wind Turbine No.	Latitude (E)	Longitude (N)	Wind Turbine No.	Latitude (E)	Longitude (N)
1	552942	4346541	24	560709	4350449
2	553159	4346748	25	572846	4350856
3	553424	4346919	26	573075	4351034
4	553847	4346947	27	573490	4351219
5	554071	4347147	28	573709	4351485
6	554911	4348731	29	573966	4351747
7	555300	4349237	30	574250	4352204
8	555587	4349350	31	574578	4351937
9	556381	4350059	32	575504	4351164
10	556651	4350074	33	575262	4351045
11	556917	4349985	34	575031	4350906
12	557197	4349985	35	574843	4350712
13	557600	4350065	36	575017	4350503
14	557824	4350220	37	576043	4350927
15	558187	4350330	38	552734	4346091
16	558420	4350504	39	554326	4347013
17	558697	4350629	40	556043	4349811
18	558966	4350496	41	575687	4350906
19	559680	4349375	42	552515	4345864
20	559752	4349066	43	561018	4350495
21	560018	4348698	44	556522	4349564
22	560433	4349456	45	556858	4350505
23	560533	4350658	46	559378	4349623

⁵ Geographical coordinates of the turbines are taken from the Generation License of the Project Activity.



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A.3 Technologies and/or measures

The project currently comprises 46 wind turbines, 36 of which have a unit capacity of 2500 kW, and 10 of them have a unit capacity of 3000 kW. Nordex is decided as an equipment provider due to the outstanding features of its product regarding safety factors, simple, durable design for low maintenance and long-life operation, high efficiency, and pleasing visual appearance. The key parameters about the technical design of the selected model Nordex N90 turbines are listed below in Table 4; and, the key parameters about the technical design of the chosen model Nordex N117 turbines are listed below in Table 5.

Table 4: Technical specifications of Nordex N90 turbines

Specifications	Nordex N90
<i>Rated Power (kW)</i>	2,500
<i>Rotor Diameter (m)</i>	90
<i>Hub Height (m)</i>	80
<i>Num. of Blades</i>	3
<i>Swept Area (m²)</i>	6,362
<i>Cut-out wind speed (m/s)</i>	25

Table 5: Technical specifications of Nordex N117 turbines

Specifications	Nordex N117
<i>Rated Power (kW)</i>	3,000
<i>Rotor Diameter (m)</i>	116,8
<i>Hub Height (m)</i>	91
<i>Num. of Blades</i>	3
<i>Swept Area (m²)</i>	10,715
<i>Cut-out wind speed (m/s)</i>	25

The project activity will achieve 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 **1,395,247** tCO_{2e} with the assumed annual total net electricity generation of 307,500 MWh.

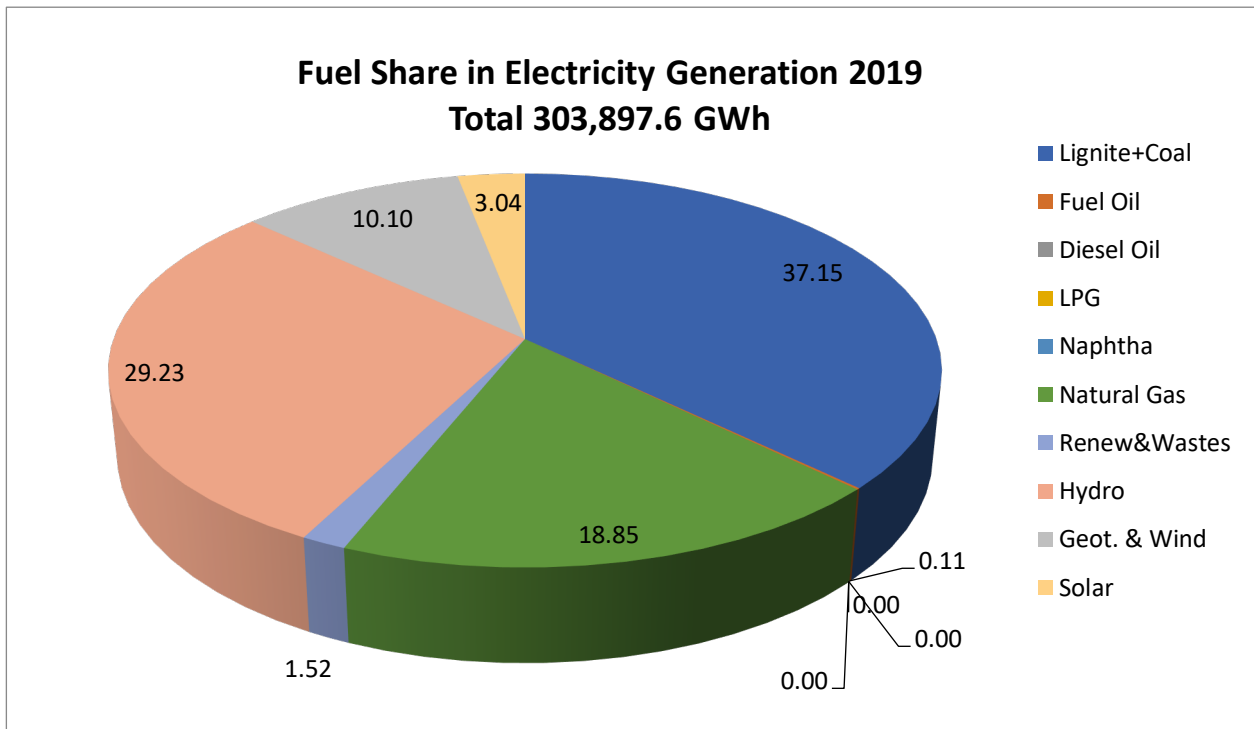


Figure 2: Share of Sources in Electricity Generation 2019⁶

Although Turkey has an excellent wind resource, substantial space, a reasonably good electrical infrastructure, and an impending electricity shortage, it uses negligible capacity (less than 4%) of its onshore potential, estimated as 39,791 MW by the Renewable Energy General Directorate.⁷ Lack of attractive incentives and tax advantages, limited grid access, and limited turbine supply constitutes the significant barriers to wind energy.

Renewable energy law, enacted in 2005, which had amendments at the end of 2010 regarding feed-in tariffs, stipulates a purchase obligation by the retail companies for 10

⁶ See, TEİAŞ, Annual Development of Electricity Generation- Consumption and Losses in Turkey (2019);, <https://webapi.teias.gov.tr/file/345a1333-4709-4506-a1b7-24c6332d32d0?download>

⁷ See, Page 40, https://www.mmo.org.tr/sites/default/files/T%C3%BCrkiyeEnerjiG%C3%B6r%C3%BCn%C3%BCm%C3%BC_2018_Sunumu_%2812.04.2018%29.pdf

years with a purchase price of 7.3 USD/kWh (~5.5 €/kWh) for the power plants put in operation by the end of 2015⁸. This tariff was much below the average remuneration in the leading wind markets. It did not constitute a sufficient incentive for investments in Turkey's minor experienced wind energy sector. The revenues calculated according to these regulations are considered in the investment planning of the projects. They do not lead to returns that allow the Project to be profitable or attractive for capital investors and lenders.

These numbers and figures show the contribution of a wind power project like Soma WPP to the development of environmentally-friendly electricity generation instead of the described Turkish mix of hydroelectric and fossil-fuelled power plants, which are better known 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.

Soma WPP, as a large wind power plant project, is a perfect project to demonstrate the long-term potential of wind energy to efficiently reduce GHG emissions and diversify and increase the security of the local energy supply contributing to sustainable development. Wind-driven turbines rotate in generators, and electricity generated here is transferred to the grid for the consumer without any greenhouse gas emissions. The Gold Standard certification shall help realize this seminal technology by compensating for the lack of financial incentives in the Turkish renewable energy market.

The second 7-year crediting period is from 13/08/2017 to 12/08/2024. The end date for the First Crediting Period was 12/08/2017. For this reason, the CPII start date is now set as 13/08/2017. And accordingly, the end date of the CP is now set as 12/08/2024. Due to a delay in the completion of re-validation beyond the last date of the First Crediting Period, no ERs will be issued for the delay period. The project will be able to certify the period between the submission of the Renewal opinion by the VVB for Design Review to Gold Standard was completed and the end date of the Second

⁸ See : http://www.epdk.org.tr/documents/elektrik/mevzuat/kanun/Elk_Kanun_Yek_Kanun.doc (List I in page 10)

Crediting Period. No issuance will be requested during the 2nd CP for the period between 13/08/2017 and 04/07/2022. 04/07/2022 corresponds to the date of the submission of the Renewal opinion by the VVB for Design Review to Gold Standard so that the project will be able to certify the period between 04/07/2022 and 12/08/2024.

A.4 Scale of the project

The Project's installed and registered capacity per license issued by EMRA (Energy market Regulatory Authority) is 90.0 MWe, which consists of a total of 36 turbines (36x2.5 MWe), the Soma WPP project is a large scale project.

A.5 Funding sources of project

A significant amount of bank loan has been received for this project. Therefore, the project activity doesn't have any public funding or Official Development Assistance (ODA) funding.



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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"⁹, 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)¹⁰;
2. Tool for the demonstration and assessment of additionality (Version 5.2)¹¹;
3. Tool to determine the remaining lifetime of equipment (Version 01.0.0)¹²
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)¹³

B.2. Applicability of methodology (ies)

The choice of methodology ACM0002 v20.0 is justified as the proposed project activity meets its applicability criteria:

⁹ <https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG>

¹⁰ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

¹¹ This tool was applied during the renewal of the first crediting period to evaluate the additionality. During this renewal of the second crediting period no new additionality assessment has been conducted.

¹² <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>

¹³ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-10-v1.pdf>

¹³ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf>

Applicability Conditions of ACM0002	Applicability to This Project Activity
<p>This methodology is applicable to grid-connected renewable energy power generation project activities that:</p> <ul style="list-style-type: none"> a) Install a Greenfield power plant; b) Involve a capacity addition to (an) existing plant(s) c) Involve a retrofit of (an) existing operating plants/units d) Involve a rehabilitation of (an) existing plant(s)/unit(s) or e) Involve a replacement of (an) existing plant(s)/unit(s) 	<p>Soma WPP is a grid-connected renewable power generation project activity that install a wind power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (Greenfield plant). Thus, it meets the said applicability condition.</p>
<p>The project activity may include renewable energy power plant/unit of one of the following types: hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit.</p>	<p>The project activity is the installation of 46 wind turbine generators (as previously discussed). Hence, meets this criterion.</p>
<p>In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.</p>	<p>The project activity does not involve capacity additions, retrofits, rehabilitations or replacements. Hence this criterion is not applicable to the project activity.</p>

Applicability Conditions of ACM0002	Applicability to This Project Activity
<p>In case of hydro power plants, one of the following conditions shall apply:</p> <ul style="list-style-type: none"> a) The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs, or b) The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density calculated using equation (3), is greater than 4 W/m², or c) The project activity results in single or multiple reservoirs and the power density, calculated using equation (3), is greater than 4 W/m² or d) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (3), is lower than or equal to 4 W/m², all of the following conditions shall apply: <ul style="list-style-type: none"> i. The power density calculated using the total installed capacity of the integrated project, as per equation (4), is greater than 4 W/m² ii. (ii) Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity 	<p>The project activity is not a hydro power plant. Hence this applicability criterion is not relevant to the project activity.</p>

Applicability Conditions of ACM0002	Applicability to This Project Activity
<p>iii. Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m² shall be:</p> <ul style="list-style-type: none"> • Lower than or equal to 15 MW, and • Less than 10 per cent of the total installed capacity of integrated hydro power project 	
<p>In the case of integrated hydro power projects, project proponent shall:</p> <p>a) Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project, or</p> <p>b) Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the</p>	<p>The project activity is not a hydro power plant. Hence this applicability criterion is not relevant to the project activity.</p>

Applicability Conditions of ACM0002	Applicability to This Project Activity
<p>water flow at the inlet of power units. Therefore this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum five years prior to implementation of CDM project activity.</p>	
<p>The methodology is not applicable to:</p> <ul style="list-style-type: none"> a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site; b) Biomass fired power plants/units 	<p>Project activity does not involve:</p> <ul style="list-style-type: none"> a) Switching from fossil fuels to renewable energy sources at the site of the project activity. b) Biomass fired plants. Hence this criterion is not applicable.
<p>In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is “the continuation of the current situation, i.e. to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance”.</p>	<p>The project is not a retrofit, rehabilitations, replacements or capacity addition; hence this applicability criterion is not relevant.</p>
<p>In addition, the applicability conditions included in the tools referred to above apply.</p>	<p>Applicability conditions of the applied tool are justified.</p>

Applicability Conditions of the Tools employed	Applicability of the Tool to This Project Activity
Tool to calculate the emission factor for an electricity system (Version 07.0.0)	
<p>a) This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g. demand-side energy efficiency projects)</p> <p>b) Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. In the latter case, two sub-options under the step 2 of the tool are available to the project participants, i.e. option IIa and option IIb. If option IIa is chosen, the conditions specified in "Appendix 1: Procedures related to off-grid power generation" should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total</p>	<p>a) This condition is applicable to the Project Activity since the project activity substitutes grid electricity, and thus, the Project results in savings of electricity that the grid would have provided.</p> <p>b) The emission factor used for this Project Activity has been calculated for grid power plants only.</p> <p>c) This Project is not a CDM Project.</p> <p>d) This Project Activity doesn't employ biofuels.</p>

Applicability Conditions of the Tools employed	Applicability of the Tool to This Project Activity
<p>electricity generation by grid power plants in the electricity system; and that factors which negatively affect the reliability and stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity.</p> <p>c) In case of CDM projects the tool is not applicable if the project electricity system is located partially or totally in an Annex I country.</p> <p>d) Under this tool, the value applied to the CO2 emission factor of biofuels is zero</p>	
Tool for the demonstration and assessment of additionality (Version 5.2)	
<p>a) The use of the “Tool for the demonstration and assessment of additionality” is not mandatory for project participants when proposing new methodologies. Project participants may propose alternative methods to demonstrate additionality for consideration by the Executive Board. They may also submit revisions to approved methodologies using the additionality tool.</p> <p>b) Once the additionally tool is included in an approved methodology, its application by project participants using this methodology is mandatory</p>	<p>a) The additionality of this Project Activity was evaluated at the First Crediting Period employing the Tool for the demonstration and assessment of additionality (Version 5.2). Thus no new additionality assessment was carried out during this Crediting Period Renewal.</p> <p>b) The additionality of this Project Activity was evaluated at the First Crediting Period. Thus no new additionality assessment was carried out during this Crediting Period Renewal.</p>

Applicability Conditions of the Tools employed	Applicability of the Tool to This Project Activity
Tool to determine the remaining lifetime of equipment (Version 01.0.0)	
<p>a) The tool may be used for project activities which involve the replacement of existing equipment with new equipment or which retrofit existing equipment as part of energy efficiency improvement activities.</p>	<p>a) The tool is used for this Project Activity to determine the project’s total lifetime. Although this Project Activity doesn’t involve the replacement of existing equipment during the Second Crediting Period there were newly added turbines. This tool states that:</p> <p>Project participants may use one of the following options to determine the remaining lifetime of the equipment:</p> <ul style="list-style-type: none"> (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. <p>Option c is chosen and the default values stated in the methodology is used. From the table in this tool it can be seen that for the technical lifetime onshore wind turbines 25 years can be accepted.</p>
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)	

Applicability Conditions of the Tools employed	Applicability of the Tool to This Project Activity
<p>a) 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. The tool consists of two steps. The first step provides an approach to evaluate whether the current baseline is still valid for the next crediting period. The second step provides an approach to update the baseline in case that the current baseline is not valid anymore for the next crediting period.</p>	<p>a) Detailed assessment of the validity of the original baseline as per the Tool was carried out in Section B.4 of this PDD. Please see Section B.4.</p>

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, the project boundaries include the project site and all power plants attached to the Turkish National Grid in this project activity.

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

The project activity and baseline scenario are defined as the greenhouse gasses and emission sources. As a result, the project boundary for Soma WPP is as demonstrated in Figure 3 below:

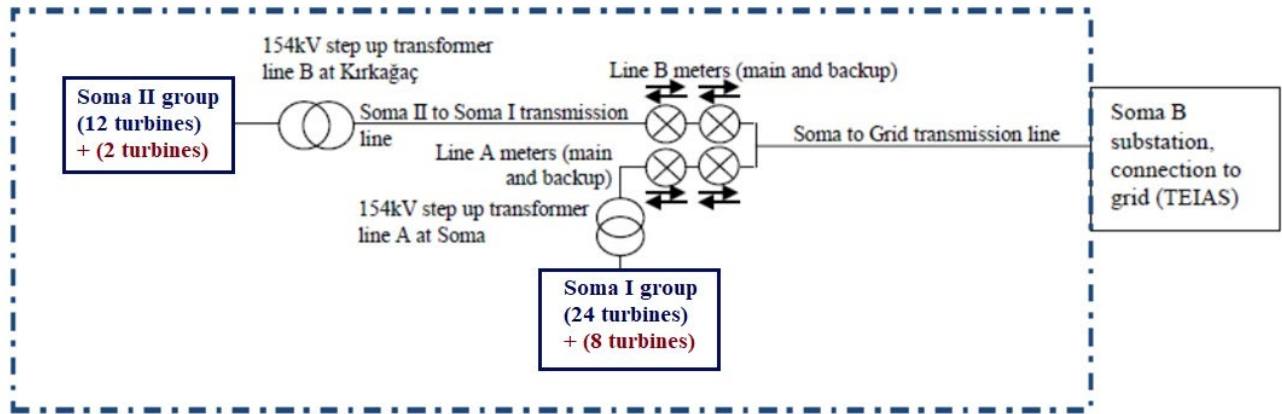


Figure 3 Project Boundary

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 6:

Table 6: Emissions sources included in or excluded from the project boundary

Source	GHGs	Included?	Justification/Explanation	
Baseline scenario	CO ₂	Yes	Main emission source: Fossil fuels fired for electricity generation cause CO ₂ emissions. It is included in the 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 are negligible and not included in the baseline calculation to be conservative and comply with Table-1 of the methodology (ACM0002 v20.0) (page 5).	
	N ₂ O	No		
Project	Emissions during construction and	CO ₂	No	Minor emission source: Even though there may be some CO ₂

	operation of the project activity			emissions during construction are negligible
		CH ₄	No	Minor emission source: there are no CH ₄ emissions during construction and operation.
		N ₂ O	No	Minor emission source: there are no N ₂ O emissions during construction and operation.

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 the installation of a new grid-connected wind farm with 46 turbines and is not modification/retrofit of an existing grid-connected power plant. So, the first identification of this procedure is selected for the 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 determine 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.

During the First Crediting Period, the baseline scenario for the project had been defined as:

“Electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants.”

The current baseline of the project is the same as the first crediting period and complies with the existing legal framework. No additional laws that impacted the project activity came into force, and the project activity is still in line with the available law and regulations.

Step 1.2 Assess the impact of circumstances.

There has been no significant deviation or change in the market characteristic during the first crediting period.

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

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

Demand for electricity in Turkey is growing rapidly, with an average of 4.2%¹⁴ for the previous ten years. TEİAŞ, responsible for grid reliability, has prepared an electricity demand projection for the next ten years (2019-2028) for Turkey and announced on July 2019, given in Figure 4 and Figure 5, reflecting the continuation of current demand growth¹⁵.

¹⁴ See, https://www.teias.gov.tr/tr-TR/ilgili-raporlar_10_Yillik_talep_tahminleri_raporu_https://webapi.teias.gov.tr/file/144aa8fe-8af6-4448-bea1-0a5141cbd22d?download

¹⁵ See, https://www.teias.gov.tr/tr-TR/ilgili-raporlar_10_Yillik_talep_tahminleri_raporu_https://webapi.teias.gov.tr/file/144aa8fe-8af6-4448-bea1-0a5141cbd22d?download

Table 7: 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

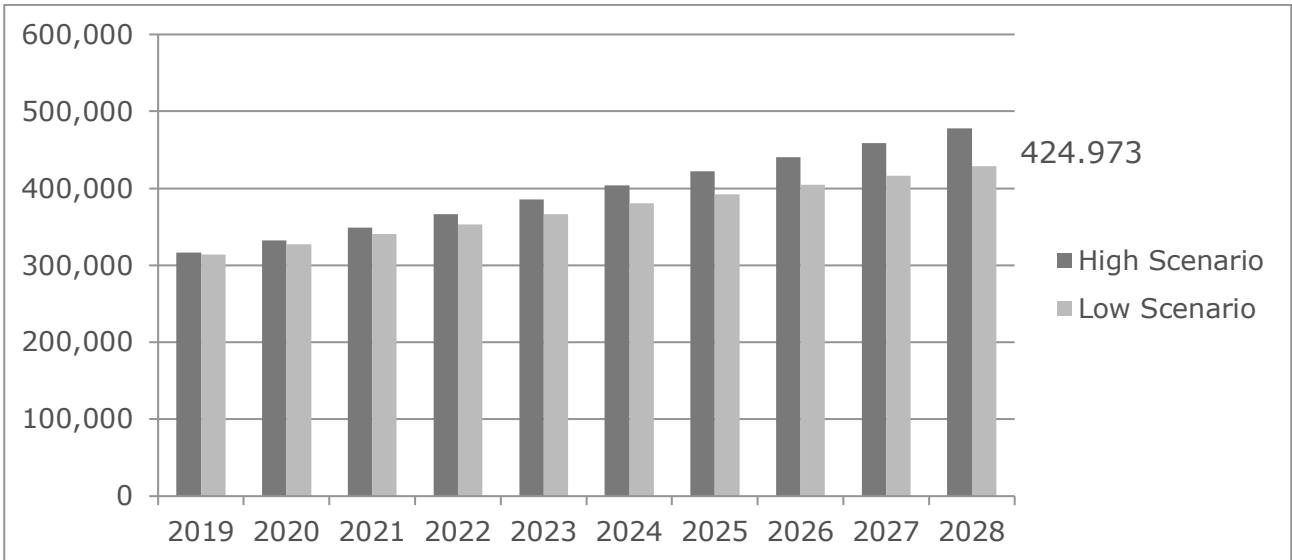


Figure 4: Electricity Demand Projections for Ten Years

This projection also forecasted electricity supplies considering all operational power plants under construction and newly licensed. Generation projection based on project generation is given in Figure 5.

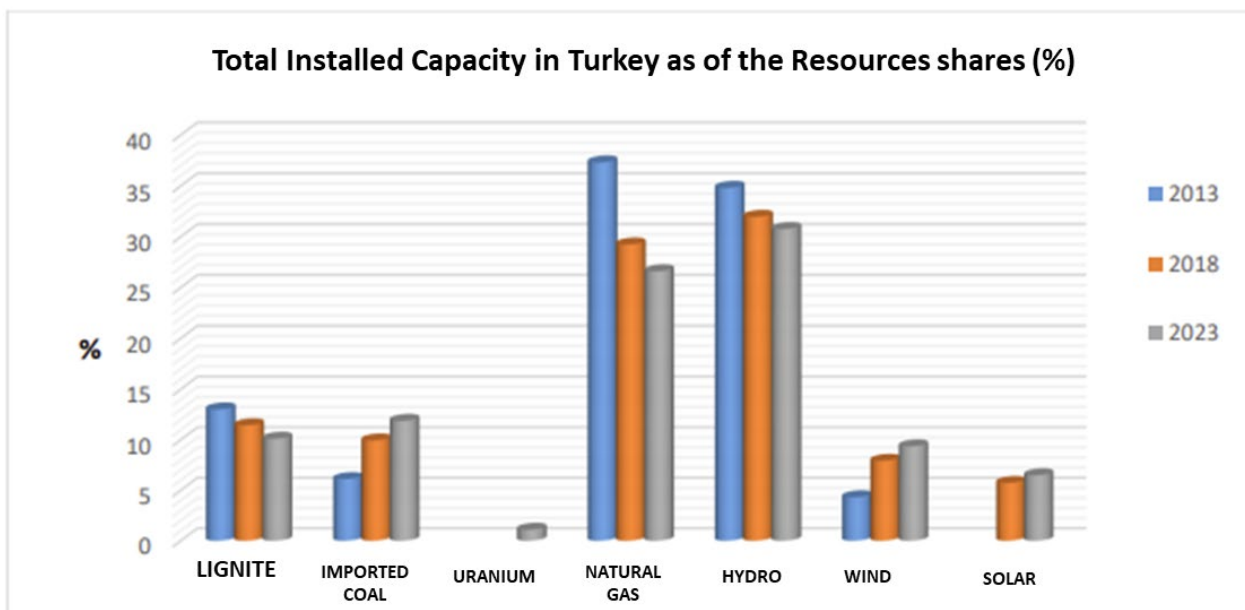


Figure 5: Total Installed Capacity in Turkey as of the Resources shares (%)¹⁶

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

Table 8: **By Primary Energy Resources, Installed Capacity of Turkey (2009-2019)**¹⁷

Unit :MW

	Coal	Fuel Oils	Natural Gas	RES (renewable energy sources) + Waste + Waste Heat	Multi Fuel	Hydro	Geothermal	Wind	Solar	TOTAL
2009	10,590.3	1,699.1	11,825.6	86.5	5,137.6	14,553.3	77.2	791.6	-	44,761.2
%	23.66	3.79	26.42	0.19	11.48	32.51	0.17	1.77	-	100.00
2019		189.356								91,267.0

¹⁶ See, https://www.epdk.gov.tr/Detay/DownloadDocument?id=GTRjtj8aTa8=_ (page 104)

¹⁷ See, <https://webapi.teias.gov.tr/file/163dfadf-80d8-4271-baf8-bc0b76710177?download>

	19,570. 4		21,843. 6	1,170.5	4,889.1	28,503. 0	1,514.7	7,591.2	5,995. 2	
%	21.44	0.21	23.93	1.28	5.36	31.23	1.66	8.32	6.57	100.00

In the shed of the above analysis for the baseline scenario (continuation of the current situation), which is given by Table 7, it can be concluded that:

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

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

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 equipment 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 a 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.

The emission factors and values for the calculation of the baseline emissions have been determined for the whole crediting period and parameters not monitored have been changed. Therefore, Step 2 has been applied.

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

This step is applicable since Step 1.4 showed that the current baseline needs to be updated accordingly with the new officially published national emission factor data.

Step 2.1: Update the current baseline

As confirmed in Step 1, during the First Crediting Period, the baseline scenario for the project had been defined as:

“Electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants.”

The current baseline of the project is the same as the first crediting period and complies with the existing legal framework. No additional laws that impacted the project activity came into force, and the project activity is still in line with the available law and regulations. This conforms 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 new national circumstances impact the emission factor of the grid and thus on the project’s current baseline emissions. Accordingly, the grid emission factor is updated according to the Turkish Ministry of Energy and Natural Resources publication, which indicates Turkey’s National Electric Grid Emission Factor for the year 2019.¹⁸

¹⁸ See: <https://enerji.gov.tr/duyuru-detay?id=195> or https://enerji.gov.tr/Media/Dizin/BHIM/tr/Duyurular//Bilgi_Formu_Web_Sitesi_2019_202110071443.pdf

So, that were used to calculate estimated emission reductions, the Turkish Ministry of Energy and Natural Resources published that Turkey's National Electric Grid Emission Factor (0.6482 tCO₂/MWh) was used for the second crediting period of this project.



TEMPLATE

B.5. Demonstration of additionality

Additionality has been evaluated using the Tool for the demonstration and assessment of additionality (Version 5.2) in the first CP and that information is repeated in this PDD and no new additionality assessment is done for this renewal of the Crediting Period. Investment analysis conducted during the First Crediting Period shows that the project is not economically feasible without GS VER credit income. Also, the sensitivity analysis conducted confirms that the proposed project activity is unlikely to be financially attractive without the revenues from VERs as the IRR result (9.67% for 90 MW) is below the benchmark, which is 11.48%. Consequently, the project activity was deemed as additional. These analyses haven't been performed again for the renewal of the Crediting Period. The analyses conducted in the First Crediting Period are repeated in the following sections and paragraphs.

For the explanation of how and why the project activity leads to emission reductions that are additional to what would have occurred in the absence of the project activity, the Baseline Methodology refers to the consolidated "Tool for the demonstration and assessment of additionality" (version 5.2), which defines a step-wise approach to be applied to the proposed project. Using this Tool additionality of the project activity was evaluated during the First Crediting Period. Thus, no new assessment of the additionality have been conducted for this renewal of the crediting period.

According to Turkish regulations, to get necessary permits for further project implementation, granting a generation license from Authority is required. Hence, issuance of license cannot be considered as 'Project Start Date' but a prerequisite to

proceed with further project development activities. The date of the financial agreement with GE shall be set as the investment decision date according to the decision of EB41¹⁹.

The above Implementation Schedule clearly shows that before starting the project activity, Bilgin Güç Santralleri Enerji Üretim A.Ş. started the analysis of revenue from VER credit sales and signed an ERPA agreement. (08/10/2008).

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

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

Project activities that apply the tool in the context of approved consolidated methodology ACM0002 only need to identify that there is at least one credible and feasible alternative that would be more attractive than the proposed project activity. The following two alternatives to the Project activity are considered here in detail:

Scenario (a): The proposed Project activity is undertaken without being registered as a GS VER project activity, i.e. the construction of a new wind electricity generation plant with an installed capacity of 90 MW, connected to the local grid, and implemented without considering VER revenues.

Scenario (b): Other realistic and credible scenarios include the provision of electricity generated from new coal or oil connected to the National Grid. The chart below shows the expected additional capacity to be added to the Grid in Turkey.

¹⁹ See: <http://cdm.unfccc.int/EB/041/eb41rep.pdf> (paragraph 67)

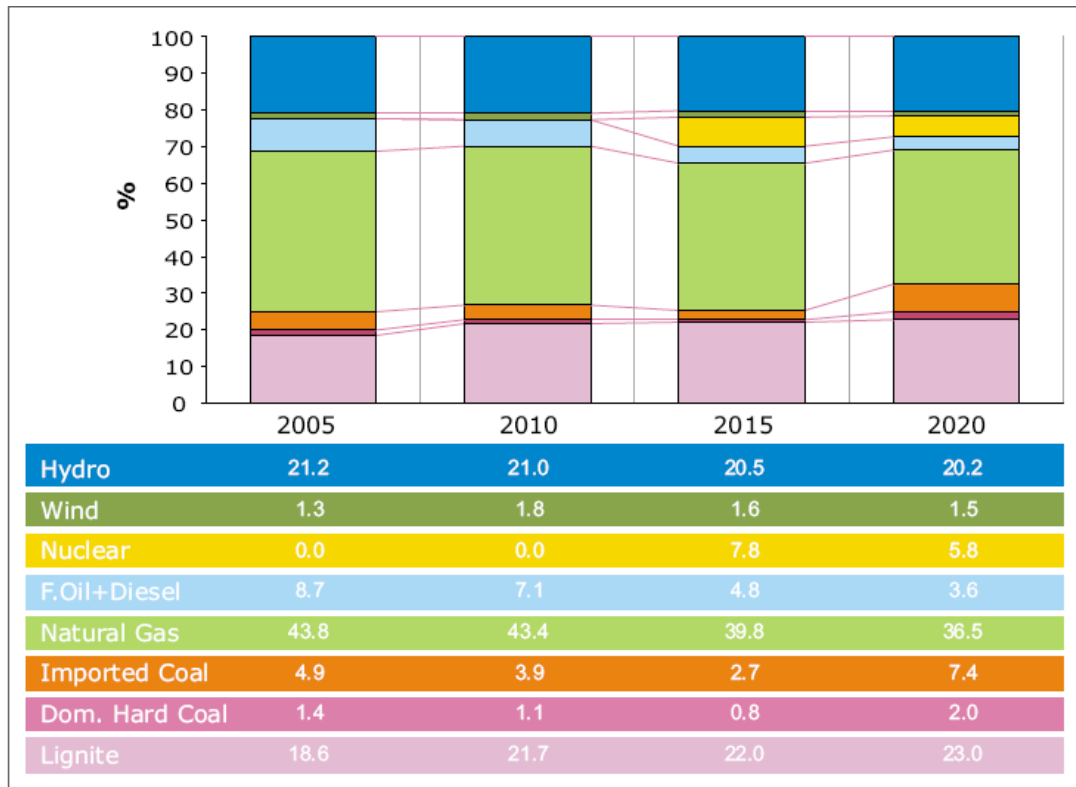


Figure 6: Breakdown of actual and expected generating capacity by primary sources¹

The region does not have hydro resources that are significant enough to generate 90MW of power and so hydro is therefore not a credible low carbon alternative. Wind Projects in the region use carbon finance (see Step 4a below)

Scenario (c): Continuation of the current situation, i.e. electricity will continue to be generated by the existing generation mix operating in the Turkey regional grid.

Outcome of Step 1a: Since the electricity demand of Turkey is increasing, and since there are no private sector wind farms constructed without VER revenue, the only realistic and credible alternative scenario to the project activity is Scenarios are (b) new capacity additions to the grid from fossil fuels and (c) supply of equal amount of electricity by the existing grid.

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

The alternative Scenario (b) is in compliance with all mandatory applicable and legal and regulatory requirements. New power generation capacity is regulated by Electricity Market Regulation Authority (EMRA) who issues the licenses for electricity generation and is responsible for ensuring that new capacity applies with its rules and regulations.

Outcome of Step 1b: The alternative scenario to the project activity is the supply of electricity by the existing grid with additional capacity is in compliance with mandatory legislation and regulations.

Step 2 - Investment analysis

Investment analysis conducted during the First Crediting Period shows that the project is not economically feasible without GS VER credit income. Also, the sensitivity analysis confirms that the proposed project activity is unlikely to be financially attractive without the revenues from VERs as the IRR result (9.67% for 90 MW) is below the benchmark, which is 11.48%. Consequently, the project activity was deemed as additional.

The “the proposed project activity is not the most economically and financially attractive” is demonstrated below:

Sub-step 2a - Determine appropriate analysis method

There are three options for investment analysis method:

1. Simple Cost Analysis
2. Investment Comparison Analysis and
3. Benchmark Analysis

Simple Cost Analysis is not applicable because project generates economical benefits from sale of electricity to grid. Investment Comparison Analysis is also eliminated since the baseline for the project is generation of electricity by the grid and no similar investment alternatives exist. Therefore, Benchmark Analysis is the most appropriate approach for the evaluation of the project investment.

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

The Guideline on Assessment of Investment Analysis published at EB62 paragraph 11 says, “Due to the impact of loan interest on income tax calculations it is recommended that when a project IRR is calculated to demonstrate additionality a pre-tax benchmark be applied.” This analysis follows the guideline and applies a pre-tax analysis.

The IRR on capital employed is the most appropriate financial indicator for analysing the project The Tool for the Demonstration and Assessment of Additionality and its

Guidelines issued at EB62 state in paragraph 15 that, “when calculating the cost of equity the developer may choose either (a) selecting the values provided in Appendix A; or by (b) calculating the cost of equity using best financial practices, based on data sources which can be clearly validated by the DOE, while properly justifying all underlying factors.” In this case option a) is not available as Turkey does not appear in the Appendix A so b) is chosen and the justification given below.

In this analysis, we use the return on Turkish government issued Eurobonds at the time the investment decision for the project was made, increased by a suitable risk premium that reflects an equity investment in a wind energy project. The premium is determined using the Capital Asset Pricing model and the Weighted Average Cost of Capital Model.

In this analysis, we use the return on Turkish government issued Eurobonds at the time the investment decision for the project was made, increased by a suitable risk premium that reflects an equity investment in a wind energy project. The premium is determined using the Capital Asset Pricing model and the Weighted Average Cost of Capital Model.

In line with the Tool for the Demonstration and Assessment of Additionality Version 5.2, the Eurobond rate from Government issued bonds is taken to be the benchmark or most basic and low risk return available to Turkish Investors. Investment in the Project is made primarily in Euros (not Turkish Lira), therefore, the investment analysis is done by comparing the return on the Project to returns relatively risk free government Eurobonds. On the investment decision date, June 3rd, 2008, Turkish Government issued Euro denominated Eurobonds maturing in 2019 were yielding 7.16%¹⁰

Capital Asset pricing Model

The Capital Asset Pricing Model (CAPM)¹¹ provides the asset-appropriate required return rate and can be utilised as a bench mark to compare the IRR value of the project since the model provides us with the rate at which future cash flows produced by the asset should be discounted given that asset's relative risks. The model is expressed by the following formula:

$$\frac{E(R_i) - R_f}{\beta_i} = E(R_m) - E(R_f)$$

Where, E(R_i) stands for the expected return on the capital asset

R_f stands for the risk-free rate of interest such as interest arising from government bonds $E(R_m)$ stands for the expected return of the market

$E(R_m)-E(R_f)$ is also sometimes known as the *market premium* or *risk premium* (the difference between the expected market rate of return and the risk-free rate of return).

And,

β_i stands for the sensitivity of the expected excess asset returns to the expected excess market returns, formulated as :

$$\beta_i = \frac{Cov(R_i, R_m)}{Var(R_m)}$$

Since beta reflects asset-specific sensitivity to non-diversifiable, i.e. market risk, the market as a whole, by definition, has a beta of "one". In our case as it is not possible to derive a Beta value specific to renewable energy investments with Turkey, it is reasonable to assume Beta as one and expect that this investment will behave parallel to the entire risk behavior of the Turkish market.

Turkish Equity Risk Prem. = U.S. ERP (5.0%) x Istanbul Stock Exchange Volatility¹² (37%) / Volatility of S&P500 22%¹³
 = 8.64%

And where Cost of Equity = EuroBond (7.16) + Beta (1) x Equity Risk Premium (8.64%)
 = 15.80%

Weighted Average Cost of Capital

The Weighted Average Cost of Capital is a measure of the returns required from a project that is funded by both debt and equity. It may be formulated as:

$$W_{ACC} = (W_d \cdot C_d) + (W_e \cdot C_e)$$

Where:

W_d = % of debt (71.5%)

C_d = Cost of Debt (9.75%)

W_e = % of Equity (28.5%)

C_e = Cost of Equity (15.80%)

Solving using the figures above:

$$W_{ACC} = (28.5 * 15.80) + (71.5 * 9.75)$$

$W_{ACC} = 11.48\%$

Based on these external factors, the project requires an Internal Rate of Return of 11.48% to exceed the benchmark.

Based on the Eurobond rates (7.16%²⁰) for the date of investment decision, cost of equity, cost of loan, and the risk premiums, the benchmark is calculated to be 11.48% for this project. The detail of how benchmark was calculated is provided to the DOE.

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

(7) The main parameters used for evaluation of the investment are given in Table 7 and further parameters are given in the Investment Analysis workbook provided to the DOE.

Table 9 . Financial parameters used in investment analysis

Installed Capacity	90 MW	Evidence or Reference	Date
Expected Electricity Generation	307,500 MWh	Garrad Hassan Feasibility Report P50 Value. Note that this is at the top end of the range of likely generation figures provided in the report, and is therefore conservative when assessing the additionally of the project, as there is only a 50% chance of this being exceeded.	19/08/2007
Emission Reduction (ER)	182,605 tCO _{2e}	Calculated based on the Combined Margin Emission Factor	
ER sales price	8.25 Euro/t CO _{2e}	ERPA between JPMorgan ClimateCare and Bilgin Rüzgar Santrali Enerji Üretimi A.Ş.	8.10.2008

²⁰ www.ziraat.com.tr/tr/bankamiz/faiz-ve-ucretler.aspx/eurobond.aspx

Total	114,177,09	Total elctro-mechanical	04.03.08
Investment including the loan premium	4Euro	equipment cost estimate taken from purchase of similar turbines shortly before the investment decision date as evidenced to DOE with Quotation no. NTR-MAZI-01	
		Construction Alpıke İnşaat	10.04.2009
		Construction Quotation	
		Electrical Works and Switchyard Contract	17.11.2009
		Areva Cabling ,ABB and Electric Transformer Contract 1 and 2	and15.5.2009,
		Transmission Line (154 kVa) Kar-PA Transmission line Contract	21.01.2010
		Insurance	Insurance quotation 05.07.2010
Loan	81,590,000 Euro	ECA Loan Agreement and Commercial Loan Agreement	7/8/2009 and 12/8/2009
Loan Period	12.5 years	ECA Loan Agreement and Commercial Loan Agreement	7/8/2009 and 12/8/2009
Electricity Sales Price	0.055 Euro	Renewable Energy Law (number 5346)	10.5.2005 (http://www.resmi-gazete.org/sayi/12554/5346-yenilenebilir-enerji-kaynaklarinin-elektrik-enerjisi-uretimi-amacli-kullanimina-iliskin-kanun.html)

The turbines have a life of 20 years. The value of the investment has been depreciated on a reducing balance basis over 20 years as a result. The value applied at the end of the 20 year period (as required by the Guidelines) is an estimate of the scrap value of

the metals included and is taken as EUR 864,000 (EUR 24,000 per turbine pylon¹⁴). This is a nominal value, as it is difficult to predict with any degree of certainty what the actual value will be.

Wind power investments are highly capital intensive projects. The initial investment (costs for the WT itself, foundations, electrical equipment and grid-connection) constitutes approximately 75% of the electricity production cost. Therefore, the major factor for determining the return of investment in wind power projects is the cost of capital¹⁵

For the Soma Wind Power Plant project, the Internal Rate of Return (IRR) on Capital without the carbon credit income is calculated as 9.67%. This is below the benchmark of 11.48 discussed above.

Sub-step 2d - Sensitivity Analysis

In order to determine whether the investment decision is the most attractive alternative financially, a sensitivity analysis has been done. Four parameters used for analysis:

- Operating Cost
- Electricity Price
- Electricity Generation Amount
- Construction Cost

For a range of ±10% fluctuations in parameters above, Table 7 and Figure.6 below have been obtained, and compared to the benchmark value of 11.48%.

Table 10- Sensitivity analysis for the IRR on Capital without carbon revenue for the project

	-10%	-5%	5%	10%	Exceed ?
Operating Cost	9.95%	9.81%	9.52%	9.38%	No
Electricity Price	7.73%	8.71%	10.60%	11.51%	Yes
Generation (kWh)	7.73%	8.71%	10.60%	11.51%	Yes
Capital Costs	11.27%	10.43%	8.96%	8.30%	No

Table 8 and the following Figure 6 shows the change in IRR on capital by fluctuations in operating cost, electricity sales revenue, amount of electricity generation and capital cost.

For change in operation cost and change in capital cost, a fluctuation of 10% does not exceed the benchmark. For a change in electricity price and a change in the amount of generation, a 10% change exceeds the benchmark by 0.03%. If one decimal place were chosen, the benchmark would not be exceeded. We think that the outcome of the sensitivity analysis is acceptable for the Additionality analysis because:

- The generation figures used is P50. This means that there is only a 50% chance of this figure being exceeded.
- In the Letter describing the Loan the Base Case is taken as P50, but the "Structuring Case" is taken as P90, some 10% lower. The Structuring case is that usually used when structuring financial transactions. We do not have a record of the actual figure used by the bank in this case, but the P50 figures is the most conservative
- The Gerrard Hassan feasibility report states that there are a number of uncertainties in this P50 figure which include:
 - o Wake effects of other turbines that may in the vicinity
 - o Availability has been assumed to be 97% but reliability of the actual model used has not been accounted for
 - o Standard figures for electrical availability have been used and these may vary, particularly as they are based on the more mature grids of Europe and North America
 - o Turbine performance has been assessed, but once again many of the assumptions are generic
 - o The Conclusions in Section 7 of the report highlight other areas of uncertainty

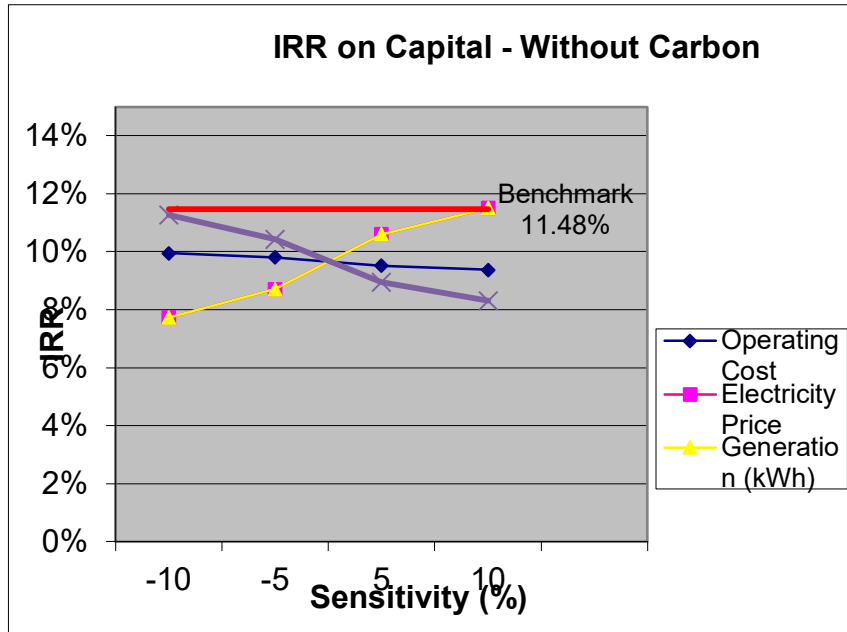


Figure 7: Sensitivity analysis without VER revenue.

The guaranteed electricity sale prices for renewable energy power plants have been fixed in accordance with Renewable Energy Law and therefore any change in electricity revenue is unlikely. On the other hand, a high portion of the investment cost will be spent on the purchase of turbines which are exported from Europe and the prices are generally fixed with the generation capacity. As a result, fluctuations in both expenditures are unlikely to be realised.

As discussed above, an increase in generation or sales price of 10% exceeds the benchmark by an insignificant amount. This scenario is unlikely, as the predicted generation figure used in the analysis is at the high end of predictions and is therefore very conservative.

Adding in carbon revenues to the project increases the IRR on capital to 11.4%. While this is lower than the benchmark, it is closer to it than when carbon is not considered. The carbon finance is therefore required in order to make a positive investment decision

Outcome of Step 2:

The project activity is not financially attractive compared to the benchmark but the addition of carbon revenue significantly improves the performance

Step 3 - Barrier Analysis

The “Tool for the demonstration and assessment of additionality” states that project participants may choose to apply Step 2 (Investment Analysis), OR Step 3 (Barrier Analysis) to demonstrate Project additionality. Given the low IRR of the Project, Step 3 is not used to demonstrate additionality of the proposed Project

Step.4. Common practice analysis

Sub-step 4a: Analyse other activities similar to the proposed project activity:

According to the Tool for the demonstration and assessment of additionality, projects are taken to be similar if they are,

“in the same country are of a broadly similar technology, are of a similar scale and a comparable investment climate other CDM project activities (registered project activities and project activities which have been published on the UNFCCC website for global stakeholder consultation as part of the validation process) are not to be included in this analysis.”

Wind power plant projects in Turkey under operation, are listed in Table.8. Investments in wind power have increased from 2006 to 2008 as it can be seen from the table. The capacities of the plants which became operational in 2006 are much higher than the plants previously commissioned in 1998 and 2000.

In the past, the very few wind farms that were built in Turkey were developed as Build and Operate (BO) or Build Operate and Transfer (BOT) protocols with the government in accordance with Energy Market Law. This model is no longer available and the reduced risk that the government-backed contracts provided is no longer available. Most of the projects constructed in 2006 and thereafter have been registered as either Gold Standard (GS) or Verified Emission Reduction (VER) projects and are benefiting from carbon finance to make them financially attractive and overcome the other barriers they face.

Table 11: Wind Projects in Turkey

NO	Location	Company	Comm. Date	Installed capacity (MW)	Developed as	Turbine capacity
CAPACITY UNDER OPERATION				146.25		
1	İzmir-Çeşme	Alize A.Ş.	1998	1.5	BOT	3 turbines, 500 kW
2	İzmir-Çeşme	Güçbirliği A.Ş.	1998	7.2	BOT	12 turbines, 600kW
3	Çanakkale-Bozcaada	Bores A.Ş.	2000	10.2	BOT	17 turbines, 600kW
4	İstanbul- Hadımköy	Sunjut A.Ş.	2003	1.2	BOT	2 turbines, 600kW
5	Balıkesir-Bandırma	Bares A.Ş.	I/2006	30	VER+	20 turbines, 1500 kW
6	İstanbul-Silivri	Ertürk A.Ş.	II/2006	0.85	BO	1 turbine, 850 kW
7	İzmir-Çeşme	Mare A.Ş.	I/2007	39.2	GS638	49 turbines, 800 kW
8	Manisa-Akhisar	Deniz A.Ş.	I/2007	10.8	VCS66	6 turbines, 1800 kW
9	Çanakkale-İntepe	Anemon A.Ş.	I/2007	30.4	GS347	38 turbines, 800 kW
10	Çanakkale-Gelibolu	Doğal A.Ş.	II/2007	14.9	GS439	13 turbines, 800 kW+ 5 turbines 900 kW

Sub-step 4b: Discuss any similar Options that are occurring:

Following the guidelines in “The tool for the demonstration and assessment of additionality”, there are no “similar” activities that are occurring as all projects are not comparable to the project activity in terms of scale. Further, the project under operation being closest the project capacity amongst those listed are 7, 9 and 10 have all been implemented after taking Carbon Revenues into consideration. Thus the project activity is not a common practice in the region.

The below table outlines an overview of the key events in the development of the project activity.

Table 12: Overview of major events in the development of the Project Activity.

Date	Major Event
03/06/08	The project owner decided that they can only invest on the project if the project is developed as a Gold Standard VER project and gets carbon revenue
17/07/08	Electricity production Licence is granted to the project owner by EMRA:
08/10/08	Project owner Signed an ERPA with J. P. Morgan Climatecare
10/11/08	A Local Stakeholders Consultation Meeting is held in the project location
07/04/09	Some final Modifications are made in the electricity production licence
06/07/09	Project owner signed a turbine Supply and Installation Agreement with the Turbine manufacturer Nordex.
21/05/09	J.P. Morgan Climatecare contracted the DOE for validation
20/08/09	The project owner and its sub contractors started to Recruit workers to start up the construction.
25/08/09	DOE made a Visit to the site as part of the validation plan
22/01/09	LSC Report Uploaded to APX/GS Registry
18/09/09	LSC Feedback report uploaded

13/08/10	The project has got Partial Commissioning for the first 32.5 MW capacity (Turbine numbers T1 to T13 has become operational)
13/08/10	Start Date of the 1 st MP
23/09/10	The project has got Partial Commissioning for the next 27.5 MW capacity (Turbine numbers T14 to T24 has become operational)
11/11/10	The project has got Full Commissioning by the addition of the last 30 MW capacity (Turbine numbers T25 to T36 has become operational)
30/06/12	End Date of the 1 st MP
01/07/12	Start Date of the 2 nd MP
31/12/12	End Date of the 2 nd MP

B.5.1 Prior Consideration

N/A. According To PDD Template Guide, “only (non-CER) retroactive projects and all projects undergoing Design Changes to include new technologies/measures are required to demonstrate Prior consideration”. Since the Project is regular and has no Design Change, it is marked as N/A.

B.5.2 Ongoing Financial Need

Investment analysis conducted during the First Crediting Period shows that the project is not economically feasible without GS VER credit income. Also, the sensitivity analysis confirms that the proposed project activity is unlikely to be financially attractive without the revenues from VERs as the IRR result (9.67% for 90 MW) is below the benchmark, which is 11.48%. Consequently, the project activity was deemed as additional.

Furthermore, the agreement signed with the turbine provider (Nordex) established a maintenance regime of the equipment. In line with this agreement, maintenance work is being carried out by Nordex every 6 months a year. This maintenance work of the turbines proves to be a significant financial burden for the Project Activity²¹. Additionally, system usage fees that need to be paid by the Project Activity to the TEIAS is another important factor contributing to the project's expenditure²². Therefore, carbon revenues derived from Gold Standard certification have played an essential role

²¹ Payments made by the PO to the Nordex for the maintenance work are provided to the VVB for review.

²² System Usage payments are now provided to the VVB for review.

in helping Project Owners pay maintenance works of the equipment and system usage fees.²³

Moreover, IRR analysis conducted during the previous Crediting Period Renewal process was re-performed again with the carbon revenue added to show that the resulted IRR still stays below benchmark value. Carbon revenue is assumed to be 3.00 EUR²⁴ per tonne. And the income generated by the carbon revenue is calculated with the estimated emission reductions amounts during the previous crediting period and the applicable 3.00 EUR per tonne. The new IRR result (10.27%) with the added carbon revenue shows that the resulting IRR (10.27%) still stays below the project activity's benchmark value (11.48%). This is further proof that the project needs the financial support that the carbon certification will enable.

The project activity satisfies all the "Tool for demonstrating and assessing additionality" (version 06.0.0) criteria. Therefore, the Project is additional and still has ongoing financial need.

²³ Declaration of the project owner on this issue has been provided to the VVB.

²⁴ Please See Figure 10 on Page 39 of the <https://openknowledge.worldbank.org/bitstream/handle/10986/22630/9781464807251.pdf?sequence=5&isAllowed=y>



TEMPLATE

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 and Sanitation	6.3 by avoidance of wastewater discharge to the environment	6.3.1

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

- SDG 7

Firstly, the Project helps 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 the sector, are encouraged to invest in wind power generations. It also reduces Turkey's increasing energy deficit and diversifies 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.

The Project is expected to generate 307,500 MWh/annually²⁵. The Project contributes to the following indicators 7.2.1 "Renewable energy share in the total final energy

²⁵ Feasibility Report prepared by Garrad Hassan for this Project Activity

consumption" and following target: 7.2 "By 2030, increase the share of renewable energy in the global energy mix substantially"

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"

- SDG 8

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

The Project led to employment opportunities that would not have been possible in the baseline scenario. The Project provides local employment during the operation phase. It contributes to the following target 8.8. and following indicator 8.8.2. Furthermore, all workers are trained on health and safety issues during 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.

There would be a potential fossil fuel generation activity if this WPP would not come into implementation. In this scenario of electricity generation, there would be a

significant wastewater that would be discharged into natural environments. The baseline value for a potential wastewater discharge due to a fossil fuel fired energy generation is calculated as follow:

The related calculations are as follow:

$$\begin{array}{l} \text{Average Amount of} \\ \text{Wastewater Discharged per} \\ \text{each GWh Electricity} \\ \text{Generation} \end{array} = \begin{array}{l} \text{Total} \\ \text{Wastewater} \\ \text{Discharged by} \\ \text{Thermal Power} \\ \text{Plants in 2020} \end{array} \div \begin{array}{l} \text{Total Electricity Generation in} \\ \text{the related year} \end{array}$$

According to calculation given above, 26.0 m³ wastewater is discharged the environment due to each GWh electricity produced.

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

Net Amount of Avoided Wastewater Discharge by Project Activity = Amount of Avoided Wastewater Discharge by Project Activity - Amount of Wastewater Produced by Project Activity

The project is expected to avoid of 8,006,243 m³ wastewater discharge to the environment. It contributes to the target 6.3. and following indicator 6.3.1.

- **SDG 13**

The annual emission reduction estimated by the Project is 199,321 tonnes of tCO₂/year. While this amount of emissions is mitigated, technology transfer is also realized as benefitting from wind energy.

The Project contributes to improving the environmental situation in the region and 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 CO: 30.05 tons/y, NMVOC: 2.89 tons/y NOx: 348.90 tons/y.

The emissions of these compounds are calculated as follow:

$$\begin{array}{l} \text{Emission Amount by Project} \\ \text{Activity per (tons)} \end{array} = \begin{array}{l} \text{Electricity} \\ \text{Generation of} \\ \text{Project Activity} \end{array} \times \begin{array}{l} \text{Emission per GWh} \\ \text{(tons/GWh)} \end{array}$$

This Project is expected to avoid CO2: 199,321 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, the publication of the Turkish Ministry of Energy and Natural Resources, which indicates Turkey's National Electric Grid Emission Factor for the year 2019, was used. The 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 the usage of the IPCC's Clean Development Methodology Tool 07-V06.0. For this calculation, information regarding the 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/MWh²⁶

Project emissions

The proposed project activity involves the generation of electricity by the 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:

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

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).

²⁶ https://enerji.gov.tr/Media/Dizin/BHIM/tr/Duyurular//Bilgi_Formu_Web_Sitesi_2019_202110071443.pdf

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

so, $EG_{\text{baseline}} = 0$

Then:

$$ER_y = BE_y = EG_y * EF_{\text{grid,CM,y}} = 307,500 \text{ MWh/year} * 0.6482 \text{ tCO}_2/\text{MWh} = 199,321 \text{ tCO}_2/\text{year}$$

The 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.



TEMPLATE

B.6.2 Data and parameters fixed ex ante

SDG13

Data/parameter	EF_{grid,CM,y}
Unit	tCO ₂ /MWh
Description	For the combined margin 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/Media/Dizin/BHIM/tr/Duyurular//Bilgi_Formu_Web_Sitesi_2019_202110071443.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	

B.6.3 Ex ante estimation of SDG Impact

Calculation of the Operating Margin Emission Factor

For OM factor calculation, the 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, the Turkish Ministry of Energy and Natural Resources calculated $EF_{grid,OMsimple,y}^{27}$.

:

→

$$EF_{grid,OMsimple,y} = 0.7258 \text{ tCO}_2/\text{MWh}$$

Calculation of the Build Margin Emission Factor

For BM factor calculation, the 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, the Turkish Ministry of Energy and Natural Resources calculated $EF_{grid,BM,y}^{28}$.

→

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

Calculating of the Combined Margin Emission Factor

The combined margin emission factor is calculated by using weighted average CM as per the 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 (%)

According to the Tool for wind power generation project activities;

²⁷ https://enerji.gov.tr/Media/Dizin/BHIM/tr/Duyurular//Bilgi_Formu_Web_Sitesi_2019_202110071443.pdf

²⁸ https://enerji.gov.tr/Media/Dizin/BHIM/tr/Duyurular//Bilgi_Formu_Web_Sitesi_2019_202110071443.pdf

$w_{OM} = 0.75$ 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:

$$ER_y = BE_y - PE_y - LE_y \tag{5}$$

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:

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

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:

$$ER_y = BE_y = EG_y * EF_{grid,CM,y} = 307,500 \text{ MWh/year} * 0.6482 \text{ tCO}_2/\text{MWh} = 199,321 \text{ tCO}_2/\text{year}$$

Air Quality:

This project is expected to remove of CO: 30.05 tons/y, NMVOC: 2.89 tons/y, NOx: 348.90 tons/y.

SDG 7 Affordable and Clean Energy:

The project is expected to generate 307,500 MWh/annually.

SDG 8 Decent Work and Economic Growth:

The project provides at least 15 employment.



TEMPLATE

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

SDG 13 Climate Action

Due to a delay in the completion of re-validation beyond the last date of the First Crediting Period, no ERs will be issued for the delay period. The project will be able to certify the period in between the submission of the Renewal opinion by the VVB for Design Review to Gold Standard was completed and the end date of the Second Crediting Period.

CO2 Emissions

Year	Baseline estimate	Project estimate	Net benefit
13/08/2017 – 31/12/2017	76,998	0	76,998
2018	199,321	0	199,321
2019	199,321	0	199,321
2020	199,321	0	199,321
2021	199,321	0	199,321
4/07/2022 – 31/12/2022	98,841	0	98,841
2023	199,321	0	199,321
1/01/2024 – 12/08/2024	122,869	0	122,869
Total	421,031	0	421,031
Total number of crediting years	7		
Annual average over the crediting period	199,321	0	199,321

CO Emissions

Year	Baseline Estimate	Project estimate	Net benefit
13/08/2017 – 31/12/2017	11.61	0.00	11.61
2018	30.05	0.00	30.05
2019	30.05	0.00	30.05
2020	30.05	0.00	30.05
2021	30.05	0.00	30.05
04/07/2022 – 31/12/2022	14.90	0.00	14.90
2023	30.05	0.00	30.05
1/01/2024 – 12/08/2024	18.53	0.00	18.53
Total	63.48	0.00	63.48
Total number of crediting years	7		
Annual average over the crediting period	30.05	0.00	30.05

NMVOC Emissions

Year	Baseline Estimate	Project estimate	Net benefit
13/08/2017 – 31/12/2017	1.12	0.00	1.12
2018	2.89	0.00	2.89
2019	2.89	0.00	2.89
2020	2.89	0.00	2.89
2021	2.89	0.00	2.89
04/07/2022 – 31/12/2022	1.44	0.00	1.44
2023	2.89	0.00	2.89
1/01/2024 – 12/08/2024	1.78	0.00	1.78
Total	6.11	0.00	6.11
Total number of crediting years	7		

Annual average over the crediting period	2.89	0.00	2.89
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NOx Emissions

Year	Baseline Estimate	Project estimate	Net benefit
13/08/2017 – 31/12/2017	134.78	0.00	134.78
2018	348.90	0.00	348.90
2019	348.90	0.00	348.90
2020	348.90	0.00	348.90
2021	348.90	0.00	348.90
04/07/2022 – 31/12/2022	173.01	0.00	173.01
2023	348.90	0.00	348.90
1/01/2024 – 12/08/2024	215.07	0.00	215.07
Total	736.99	0.00	736.99
Total number of crediting years	7		
Annual average over the crediting period	348.90	0.00	348.90

SDG 7 Affordable and Clean Energy

The baseline for the Project is no project, thus leading to generation in the relevant grid 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 **307,500 MWh** of clean energy per annum.

Year	Baseline estimate	Project estimate	Net benefit
13/08/2017 – 31/12/2017	0	118,788	118,788
2018	0	307,500	307,500
2019	0	307,500	307,500
2020	0	307,500	307,500
2021	0	307,500	307,500

4/07/2022 – 31/12/2022	0	152,486	152,486
2023	0	307,500	307,500
1/01/2024 – 12/08/2024	0	189,555	189,555
Total	0	649,541	649,541
Total number of crediting years	7		
Annual average over the crediting period	0	307,500	307,500

SDG 8 Decent Work and Economic Growth

The Project leads to employment opportunities that would not have been possible in the baseline scenario. The Project provides local employment. Also, project activity improves the quality of employment by giving training to the employee. Thus, a series of training is organised with different focuses such as Health and Safety within Soma WPP. In the below table, it is possible to see the number of employees employed for this Project Activity. Health and Safety training is provided annually for all employees.

Year	Baseline estimate	Project estimate	Net benefit
2017	0	15	15
2018	0	15	15
2019	0	15	15
2020	0	15	15
2021	0	15	15
2022	0	15	15
2023	0	15	15
2024	0	15	15
Total	0	45	45
Total number of crediting years	7		
Annual average over the crediting period	0	15	15

Trainings

Year	Baseline estimate	Project estimate	Net benefit
2017	0	1	1
2018	0	1	1
2019	0	1	1
2020	0	1	1
2021	0	1	1
2022	0	1	1
2023	0	1	1
2024	0	1	1
Total	0	3	3
Total number of crediting years	7		
Annual average over the crediting period	0	1	1

SDG 6 Clean water and Sanitation

Year	Baseline estimate (m ³)	Project estimate (m ³)	Net benefit (m ³)
13/08/2017 – 31/12/2017	3,092,822	0	3,092,822
2018	8,006,243	0	8,006,243
2019	8,006,243	0	8,006,243
2020	8,006,243	0	8,006,243
2021	8,006,243	0	8,006,243
4/07/2022 – 31/12/2022	3,970,219	0	3,970,219
2023	8,006,243	0	8,006,243
1/01/2024 – 12/08/2024	4,935,355	0	4,935,355
Total	16,911,817	0	16,911,817
Total number of crediting years	7		

Annual average over the crediting period	8,006,243	0	8,006,243
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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 the combined margin CO2 emission factor for grid-connected power generation in year y.
Source of data	Both measured and calculated Emission reductions are calculated considering the EPIAS records for the net electricity generated and the emission factor for the grid, 0.6482 tCO ₂ /MWh, which is calculated and published by The Ministry of Energy and Natural Resources of Turkey ²⁹ As per the monitoring plan sheet of registered CM Excel, the results shall be obtained from the Actual ER excel file during the verification.
Value(s) applied	199,321 tCO ₂ /year
Measurement methods and procedures	The amount of annual net electricity generation calculated by monthly settlement notifications of EPIAS based on monthly meter readings are be used to calculate estimated CO2 emission reduction by project activity.
Monitoring frequency	Annually
QA/QC procedures	Calculation of amount of emission reduction is calculated on an excel document and provided in each monitoring period
Purpose of data	Calculation of combined margin CO2 emission factor and thus the baseline emissions-to demonstrate contribution to SDG Target 13.3:

²⁹ https://enerji.gov.tr/Media/Dizin/BHIM/tr/Duyurular//Bilgi_Formu_Web_Sitesi_2019_202110071443.pdf

	Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
Additional comment	-

SDG 7 Affordable and Clean Energy

Target: 7.2

Indicator: 7.2.1

Data / Parameter	EG_{PJ,y}
Unit	MWh/yr
Description	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y
Source of data	Monthly electricity meter readings
Value(s) applied	307,500
Measurement methods and procedures	<ul style="list-style-type: none"> Regarding the electricity meters: four meters are placed (two main and two reserve) at the Soma WPP, which meters the electricity transferred to TEİAŞ substation. TEİAŞ seals these meters, and intervention by the project proponent is not possible. The fact that four meters are installed in a redundant manner keeps the uncertainty level of the only parameter for baseline calculation low. This parameter's high data quality is not only in the interest of emission reduction monitoring but paramount for the business relationship between the plant operator and the electricity buyers. <p>Measured hourly and readings monthly. Monthly settlement notifications of EPIAŞ consist hourly electricity production and withdrawn from the grid. EPIAŞ reading is used as a base data on the other hand; electricity meter reading is used to crosscheck the accuracy of the data. Authenticity is increased by the aid of data crosschecks between EPIAŞ data and electricity meter readings. This means that the main source is the EPIAŞ data. TEİAŞ notices are used to cross-check the EPIAŞ records. TEİAŞ sends an electronic spreadsheet that includes daily and monthly electricity generation and withdrawn amounts for each power plant. Thus, cross-check source is the TEİAŞ meter readings.</p> <p>Since the meters are reading electricity supplied to the system and withdrawn from the system separately, the net electricity amount provided to the grid is calculated by electricity supplied minus electricity withdrawn, which is taken from monthly settlement notifications. Due to the fact that only the registered capacity's electricity generation amount will be relevant for this new Crediting Period, the total electricity generation by the registered capacity (for 90MW) will be calculated with the help of the SCADA system. SCADA system employed in the Project Activity provides the monthly electricity generation values for each</p>

ten additional turbines. Electricity generation for registered capacity will be calculated by deducting the net electricity generation values obtained from the SCADA system for the last ten turbines from the total generation data received from the EPIAS recordings. The SCADA screenshots showing the monthly generation amount of the latest added ten turbines will be provided for monitoring. TEIAS meter readings will be used for cross-check.

The above-described measurement method follows Article 81 of the official regulation "Electricity Market Balancing And Settlement Regulation."³⁰

Name	Serial Number	Brand - Model	Date Of Calibration	Accuracy Class	Year of Manufacture
Main Meter (Soma II) after 15/12/2019	8923691	EMH - LZQJ-XC	15/10/2019 19/09/2021	0.2s	2019
Backup Meter (Soma II) after 10/11/2019	8923692	EMH - LZQJ-XC	14/10/2019 19/09/2021	0.2s	2019
Main meter (Soma I) after 15/12/2019	8923689	EMH-LZQJ-XC	15/10/2019 19/09/2021	0.2s	2019
Backup Meter (Soma I) after 10/11/2019	8923690	EMH-LZQJ-XC	15/10/2019 19/09/2021	0.2s	2019

Monitoring frequency | Continuous measurement and Monthly Recording

QA/QC procedures | According to Article 2 of the Communiqué of Meters in Electricity Sector³¹: '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, the Ministry of Trade and Industry (Ministry) is responsible for controlling and calibrating the meters. Also, according to Article 11 of this Communiqué, meters shall be in the class of 0.2s, which means the error interval for measuring is in the acceptable range according to rules.

³⁰ See page 63, <https://www.epdk.gov.tr/Detay/DownloadDocument?id=daAg8BGM+14=>

³¹ See, <https://www.epdk.gov.tr/Detay/DownloadDocument?id=+6B2PMv4N4A=>

	<p>Paragraph b) of the Article 9 of the 'Regulation of Metering and Testing of Metering Systems'³² (Regulation) of Ministry states that: '<i>b) Periodic tests of meters of electricity, water, coal gas, natural gas and current and voltage transformers are done every 10 years.</i>' Therefore periodic calibration of the meters is done every 10 years.</p> <p>Also, according to Article 67 (page 20) of this regulation, the calibration shall be done in calibration stations that have been tested and approved by the Ministry of Trade and Industry. Article 10 d) of Communiqué requires the meters shall be three phases four-wire and Article 64 of Regulation clearly states how calibration shall be performed for this kind of meters.</p> <p>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.</p>
Purpose of data	To exhibit renewable electricity generation performance of the plant
Additional comment	Plant Manager will be responsible for monitoring data.

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 employment provided
Source of data	SGK (Social Security Institution) Records of the company
Value(s) applied	The company provides job opportunities for at least 15 employees.
Measurement methods and procedures	Social Security System (SGK) records
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	-

³² See, <https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=6381&MevzuatTur=7&MevzuatTertip=5>

SDG 8 Decent Work and Economic Growth

Target: 8.8

Indicator: 8.8.2

Data / Parameter	Quality of employment
Unit	-
Description	Quality of employment
Source of data	Health & Safety trainings
Value(s) applied	HSE training is held for all employees (including local employees) at the plant.
Measurement methods and procedures	Training attendance list and/or certificates for HSE trainings.
Monitoring frequency	Annually (Once at the end of each monitoring period).
QA/QC procedures	Attendance records or training certificates are provided during each monitoring period. Safety measures and equipment will be shown to VVB during each verification.
Purpose of data	To exhibit employment performance of the plant
Additional comment	-

SDG 8 Decent Work and Economic Growth

Target: 8.8

Indicator: 8.8.2

Data / Parameter	Livelihood of the poor
Unit	-
Description	Making various contributions to the poorest people in the vicinity of the project area
Source of data	Donation Statements by Project Proponent
Value(s) applied	The project makes contributions to the poorest people in the vicinity of the project area.
Measurement methods and procedures	Statements by PP or receipts of donations.
Monitoring frequency	Once at each monitoring period
QA/QC procedures	Donation records or statements will be provided during each monitoring period. Donation records or statements will be shown to VVB during each verification.
Purpose of data	To exhibit employment performance of the plant

Additional comment	-
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SDG 6 Clean water and Sanitation

Target: 6.3

Indicator: 6.3.1

Data / Parameter	Water Quality and Quantity
Unit	m ³ /year
Description	Avoidance wastewater discharge to the environment
Source of data	EPIAŞ based on monthly meter readings
Value(s) applied	Avoidance of around 8,006,243 m ³ wastewater discharge to the environment per year.
Measurement methods and procedures	Amount of annual net electricity generation, which is calculated by monthly settlement notifications of EPIAŞ based on monthly meter readings, is used to calculate estimated amount of avoided wastewater discharge by project activity.
Monitoring frequency	Annually
QA/QC procedures	Amount of annual net electricity generation, which is calculated by monthly settlement notifications of EPIAŞ based on monthly meter readings.
Purpose of data	Avoidance wastewater discharge to the environment
Additional comment	-

B.7.2 Sampling plan

N/A

B.7.3 Other elements of monitoring plan

The Monitoring Plan (MP) builds on the baseline scenario described in Project Design Document and is consistent with the applied methodology ACM0002, “Consolidated baseline methodology for grid-connected electricity generation from renewable sources, v.20.0.0”.

The MP is implemented by Bilgin Güc Santralleri Enerji Üretim A.S., who is also responsible for operating the wind power plant. The monitoring plan is implemented based on the detailed monitoring manual that is prepared and updated for the use of Bilgin Güc Santralleri Enerji Üretim A.S.

The Monitoring Plan for the project includes the net electricity generation by the project activity in the scope of monitoring SDG 7. The electricity generated is metered by TEİAŞ by two meters placed on the switchgear station where the plant is connected to the

national grid. Those meters provide official data, which is read and recorded monthly by TEİAŞ officers and is co-signed into a protocol between the project owner and TEİAŞ. The maintenance and calibration of the meters are also done by TEİAŞ, which ensures the accuracy and quality of the measurements. In the scope of monitoring SDG 13, the monthly electricity generation values will be monitored during monitoring periods. The employment records and training provided to the employees will be monitored during the monitoring period in the scope of monitoring SDG 8. Also, the positive contributions to the local community to increase the livelihood of the poor will be monitored. For SDG 6, the electricity generation value and the domestic wastewater disposal procedures will be monitored during the monitoring period.

The following shows the organisational structure for the Soma Wind Power Plant Project (Figure 8)

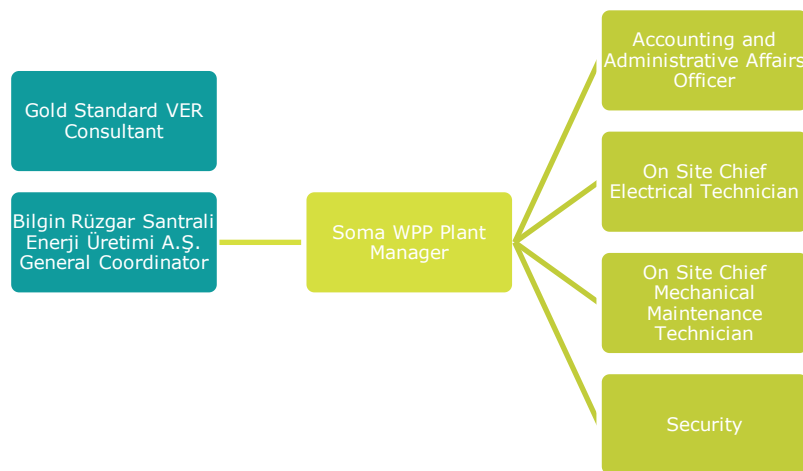


Figure 8: Organizational Structure for Soma WPP

The role of the staff involved in the implementation of the monitoring plan is given in the following table (Table 13).

Table 13: Table indicating the role and responsibilities of the staff who is involved in the implementation of the monitoring plan

Who	Role
General Coordinator	Data entry in an Excel workbook. Responsible for QA/QC, including archiving. Requests calibration and maintenance certificates,
Plant Manager	Electricity meter(s) reading Attends monthly meter reading with TEIAS representative
GS VER Consultant	Prepares emission report and accompanies verification(s). Quality check of the monitoring data reported in the monitoring workbook

Grid operator	Maintenance and calibration of main and control meters. Electricity meter(s) reading.
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QA/QC Procedures

QA/QC of meters and back up meters: In accordance with the Article 9 (b) of the “Inspection of Measurement and Measuring Instruments Regulation” which was published in Turkish Official Gazette dated 24/7/1994 and No.22000, the inspection of meters needs to be done in every 10 years. Since the project has commenced the operation in August 2010, the inspection of meters was done in 2020.

However, in addition to this statutory requirement, an authorized person from the grid operator (TEİAŞ) visits the project site for the monthly inspection in order to check the accuracy of the meters and back up meters. This is done in compliance with the EPIAS standards.

For internal records, the project operator keeps the originally signed copy of the meter protocols at the head office. Furthermore, electronic copies are kept (as well as backed up) in order to restore the data in case it is corrupted or destroyed. For this purpose, hard and soft copies of meter protocols and EPIAS data are also kept by the plant manager.

Monitoring Report

The monitoring of the project will be conducted on an annual basis.



TEMPLATE

SECTION C. DURATION AND CREDITING PERIOD

C.1. Duration of project

C.1.1 Start date of project

The project activity begins in 20/08/2009, the start date of the construction. This is a regular project.

C.1.2 Expected operational lifetime of project

The expected lifetime of the Soma WPP is 25 years³³.

C.2. Crediting period of project

C.2.1 Start date of crediting period

Start date of the second crediting period: 13/08/2017³⁴

End date of the second crediting period: 12/08/2024

C.2.2 Total length of crediting period

7 years, once more renewable

³³ The operational lifetime of the Soma WPP is determined using the methodological Tool 10 Tool to determine the remaining lifetime of equipment. <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-10-v1.pdf>. Also, the technical brochure of the turbines used states that "the wind turbine should produce high yields over a service life of at least 20 years" (Page 17 of N90 2500 Turbine technical Specifications Brochure) which was provided to the VVB for review

³⁴ Start date of the first crediting period: 13/08/2010; End date of the first crediting period: 12/08/2017



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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 3.3.1 Community Health, Safety and Working Conditions	The project will safeguard public from any potential electricity related risks, the site is safeguarded and access to project site is only possible under the supervision of the security team. In addition to all the turbines are fenced and the fences are grounded to avoid any third party injury or accident related to high voltage. Similarly the immediate switch gear area and the main control chamber and substation is also fenced and guarded.
Principle 6.1 Labour Rights	The company will provide job opportunities to local people. SGK records of employees will be provided during each monitoring period. Moreover, health and safety training will be provided to all of the employees
Principle 9.4 Release of pollutants	Wastewater generated will be collected in septic tanks and transported to the Municipality's wastewater treatment plant. In this way, discharge of wastewater will not be allowed.
Principle 9.4 Release of pollutants	Waste oil will be vacuumed by vacuum trucks regularly. In this way, discharge of plant-sourced waste oil will not be allowed.
Principle 9.4 Release of pollutants	To guarantee no negative impact of noise of the project activity to the habitants noise resulted from the turbines' rotations will be monitored. Local People living in vicinity of the project site will be interviewed for the noise resulted

	from the turbines' rotations once during each Monitoring Period.
Principle 9.4 Release of pollutants	Garbage bins' photos will be provided for solid household waste. In this way, solid waste disposal will not be allowed.
Principle 9.7 Harvesting of Forests	To guarantee the project has no effect on the soil condition as indicated in the Environmental Impact Statement trees will be planted. Photographs and receipts/invoices for the saplings planted will be provided only once at the first verification of the 2nd Crediting Period.
Principle 9.10 High Conservation Value Areas and Critical Habitats	The Project is not located in a high conservation value area or within critical natural habitats or critical biodiversity areas or sites identified. Therefore, the project activity does not affect or alter ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified. However, bird nests and carcasses on the project site will be observed by appointed personnel periodically.

Principle 3.3.1 Community Health, Safety and Working Conditions

Data / Parameter	Public Health and Safety
Unit	-
Description	Taking precautions to protect public from any potential high voltage hazard
Source of data	Project Proponent
Value(s) applied	-
Measurement methods and procedures	Photographic evidences of the precautions taken
Monitoring frequency	Annually
QA/QC procedures	The project safeguards public from any potential electricity related risks, the site is safeguarded and access to project site is only possible under the supervision of the security team. In addition to all the turbines are fenced and the fences are grounded to avoid any third party injury or accident related to high voltage. Similarly the immediate switch gear area and the main control chamber and substation is also fenced and guarded.
Purpose of data	Precautions to ensure the public health and safety
Additional comment	The project owner takes all necessary precautions in order to safeguard public from any potential electricity related risks.

Principle 9.4 - Release of pollutants

Data / Parameter	Water quality and quantity
Unit	-
Description	Disposal of wastewater
Source of data	Records of transfer of wastewater by sewage truck or statement of the wastewater treatment plant
Value(s) applied	Wastewater transfer records
Measurement methods and procedures	Wastewater generated is collected in tanks/containers, and this water is transported and disposed of by the local municipality.
Monitoring frequency	At least one wastewater disposal record in one monitoring period.
QA/QC procedures	
Purpose of data	Avoidance of wastewater discharge to the environment
Additional comment	-

Principle 9.4 - Release of pollutants

Data / Parameter	Solid waste
Unit	-
Description	a) Solid household waste b) Waste oil etc. (gearbox oil waste, oil filters etc.)
Source of data	a) Garbage bins' photos b) Removal invoices.
Value(s) applied	a) Garbage bins' photos b) Removal invoices will be provided.
Measurement methods and procedures	a) Solid household waste: By visual inspection. b) Waste oil: By checking invoices.
Monitoring frequency	a) Each monitoring period b) At least one waste oil (gearbox oil waste, oil filters etc.) disposal record in a one monitoring period.
QA/QC procedures	
Purpose of data	Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss.
Additional comment	-

Principle 9.4 - Release of pollutants

Data / Parameter	Noise Pollution
Unit	-
Description	Noise resulted from the turbines' rotations
Source of data	Project Owner
Value(s) applied	-
Measurement methods and procedures	Local People living in vicinity of the project site will be interviewed for the noise resulted from the turbines' rotations.
Monitoring frequency	Once Each Monitoring Period during this Crediting Period
QA/QC procedures	Interviews conducted with the local people
Purpose of data	To guarantee no negative impact of noise of the project activity to the habitants
Additional comment	-

Principle 9.7 Harvesting of Forests

Data / Parameter	Soil Condition
Unit	-
Description	Planting of trees to remediate soil movements as a result of the construction of the project
Source of data	Project Proponent
Value(s) applied	100
Measurement methods and procedures	Count number of trees planted and photograph any required remediation
Monitoring frequency	Only Once at the first verification of the 2 nd Crediting Period
QA/QC procedures	Photographs and receipts/invoices for the saplings planted.
Purpose of data	To guarantee the project has no effect on the soil condition as indicated in the Environmental Impact Statement
Additional comment	-

Principle 9.10 High Conservation Value Areas and Critical Habitats

Data / Parameter	Biodiversity
Unit	-
Description	Bird strikes to the turbines

Source of data	Statement from appointed personnel who is constantly on the site.
Value(s) applied	Bird strikes to the turbines will be monitored.
Measurement methods and procedures	Interviews with local people will be conducted at each monitoring period. The appointed employee will complete an assessment form regarding the bird deaths around the site to record the monitoring outcome.
Monitoring frequency	Once Each monitoring period
QA/QC procedures	The appointed personnel of PP carries out monitoring.
Purpose of data	To prove that the project activity does not affect or alter ecosystems, critical habitats, landscapes, key biodiversity areas or sites.
Additional comment	-

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 discrimination based on gender, race, religion, sexual orientation or any other basis. Turkey signed the convention of the 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 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 considered while evaluating the Project at the Stakeholder Consultation.



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SECTION E. SUMMARY OF LOCAL STAKEHOLDER CONSULTATION

The below is a summary of the 2 step GS4GG Consultation for monitoring purposes. Please refer to the separate Stakeholder Consultation Report for a complete report on the initial consultation and stakeholder feedback round.

E.1 Summary of stakeholder mitigation measures

Two separate Local Stakeholder Consultation Meetings in line with Gold Standard Requirements were held on 10 November 2008 to develop the Project as a Gold Standard VER project. The Gold Standard Organization process for VER includes two round stakeholder process. The second part of the Consultation is the Stakeholder Feedback Round held from 09/02/2009 till 18/09/2009. The participants were provided information about the Project's ongoing activities and let to provide their comments. The comments from the participants were positive for Soma WPP. During the first crediting period, general concerns of the participants were regarding the employment opportunities that project activity would enable, the noise effect of the turbines, radiation effect of the turbines, particulate matter emissions during construction, the effects of turbines on the fauna and biodiversity and the grazing area available for the animals. The project proponent ensured that the project activity enables more employment opportunities in the area, and the employees are selected from the local people.

Regarding the noise effect of the turbines, the project proponent ensured that the noise level studies conducted in accordance with the applicable laws and requirements and the noise of the turbines in operation that is heard from the closest settlement to the nearest turbine stay under the threshold value given in the relevant law and requirement. Regarding grazing areas, the project proponent ensured that separate fences surround each turbine to avoid closing all the space, and thus, the animals still can graze between the turbines. Turbines give no harm to the animals. In terms of particulate matter emissions during construction, the workers undertook necessary precautions like watering the roads, careful loading and unloading the material and covering the trucks with hammocks. In terms of the turbines' radiation effect, the project proponent clarified the concerns by explaining that the sources of low

electromagnetic radiation are the electrical generator and medium voltage transformer in the wind power plant. The wiring system is underground between the turbines to keep the exposure minimal. The electromagnetic field of a wind turbine is weak and effective only at short distances and at the height of 80ms.

For this reason, no significant exposure is possible at ground level or away from the turbine. In terms of fauna and biodiversity, the project proponent explained that as part of the environmental process, the region's flora and fauna are studied and reported. No endemic species have been determined. As the habitats are continuous and complimentary through the area, no adverse impacts are expected on terrestrial fauna. The effect on migrating birds is expected to be negligible as the vegetation on top of the hills is rare, and the birds generally prefer the area around for breeding.

Furthermore, Project Documents and Feedback forms were enabled for the stakeholders to access from 09/02/2009 till 18/09/2009, and within this period, no comments were received. A grievance mechanism was established with the support of the Mukhtar for stakeholders to forward their requests or concerns regarding the project activities. In Turkey, mukhtars are the most relevant persons in the villages for establishing a grievance mechanism. Their offices are some of the few places the locals visit very often for different purposes, such as requesting some official letters. Whenever a problem arises in the village as the first thing, locals go to the mukhtar's office to express their concerns, situations to find solutions and reflect on their issues with the Mukhtar. It has been decided that the Mukhtar also takes an active role in monitoring the participants' requests so that a grievance mechanism situating the Mukhtar at the centre was established for this project activity. Mukhtar was provided all the contact information of the responsible persons for the project activity. Whenever a complaint arises from the local people or Mukhtar himself arises a concern regarding the project activity, he can directly contact the relevant responsible persons.

For the CP renewal, no other meeting for this project was conducted apart from the remote site visit due to the travel restrictions imposed due to the COVID-19 pandemic. However, an announcement poster, which indicates that the project will continue its operation, was hung in the village where everyone could see it. Also, in the poster, local stakeholders were informed that a Continuous Input Process Book was provided to Muhtar of Göktas village so that they could inform their complaints and feedback for 30 days regarding the project if they have. Also, on that poster, they can reach the person

responsible for the project's contact information to inform their complaints directly on the phone. During this time (input/grievance process for two months), no feedback or complaints were reported on the Continuous Input Process Book (logbook), which was provided to Muhtar of Göktas village³⁵.

During the online site visit conducted with VVB, the local people were interviewed, and the general outcome of the interviews was positive verbally. Opinions of the stakeholders have been taken in the online site visit, and no complaints or problems were recorded regarding the Soma WPP. So, no negative feedback has been received from Soma WPP personnel or local people regarding this Project. Moreover, when the outcome was evaluated in general, it was seen that the Project had a positive effect on the stakeholders. A stakeholder feedback round was held between 11/01/2022 and 11/03/2022. Contact information of the Project Owner was shared with the stakeholders when any negative situation arose regarding the Project Activity. Although the general outcome of the discussions with the local people was positive during the remote site visit, the Project Owner agreed to regularly follow up with the local people whether they have any problems or requests. With the Grievance Mechanism established, local stakeholders have a chance to submit their requests and complaints to the Project Owner about the project. Moreover, all project information was published on web site of Life Enerji Ltd. Şti from 11.01.2022 to 11.03.2022 (<https://lifeenerji.com/blog/soma-ruzgar-enerji-santrali/>), enabling all stakeholders to reach and comment on the documents. At the end of the SFR period, no feedback or complaints were received on the Life Enerji Website.

³⁵ Logbook and the muhtar's statement regarding logbook were provided to the VVB.

E.2 Final continuous input / grievance mechanism

Method	Include all details of Chosen Method (s) so that they may be understood and, where relevant, used by readers.
<ul style="list-style-type: none"> • Continuous Input / Grievance Expression Process Book • Electronically Grievance Expression • Other 	<ul style="list-style-type: none"> • Continuous Input Process Book was provided to Muhtar of Göktas Village. Muhtar is the representative of the village and the most appropriate person to handle the book and complaints from the village. • All project information regarding the Project published on the website of Life Enerji enabling stakeholders to reach and comment. • Other than the mukhtar, the locals can directly call or reach (go to his office) Mr Koray Özulukale regarding the problems related to the project activity. Koray Özulukale is the responsible person from the project activity who is constantly on site.
GS Contact (mandatory)	help@goldstandard.org
Muhtar of Göktas Village:	Bahri Yılmaz
Other (Responsible person at the Project Site):	Koray Özulukale E-Mail: korayozulukale@gmail.com Phone: +90 535 103 78 45

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			
<p>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</p>	<p>1.Yes 2.Yes</p>	<p>1. 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. Therefore, the project developer and the project do respect nationally and internationally proclaimed human rights and is not complicit in violence or human rights abuses of any kind. The project respects internationally proclaimed human rights including dignity, cultural property.</p>	<p>1.N/A 2.N/A</p>

<p>2. The Project shall not discriminate with regards to participation and inclusion</p>		<p>2. Turkey is a party to Universal Declaration of Human Rights: http://ua.mfa.gov.tr/detay.aspx?2634 Therefore, the project will not discriminate with regards to participation and inclusion.</p>	
<p>Principle 2. Gender Equality</p>			
<p>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,</p>	<p>1.Yes 2.Yes 3.Yes 4.-</p>	<p>1. The project does not adversely affect men and women in marginalized or vulnerable communities because it creates stable jobs and incomes for local men and women. The project does not reduce or put at risk women’s access to or control of resources, entitlements and benefits because the project owner comply with the Labor Code. In the main office of the project owner company there are women employees as well. Therefore, Project contributes to recognition of women rights implicitly. Turkey is also party to Convention on Discrimination since 1967 to prevent any form of discrimination;</p>	<p>1. N/A 2. N/A 3. N/A 4. N/A</p>

<p>and equal pay for equal work</p> <p>3. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks</p> <p>4. (where required) Summary of opinions and recommendations of an Expert Stakeholder(s)</p>		<p>http://ua.mfa.gov.tr/files.ashx?872</p> <p>2. The project owner complies with regulations of Turkey’s law. Therefore, the project will not discriminate with regards to participation. Men and women are paid equally for work of equal value.</p> <p>3. Turkey has ratified ILO convention 100, 111, 122 and 142, which provides gender equality and promotes women’s employment</p> <p>http://www.ilo.org/ankara/areas-of-work/equality-discrimination/lang--tr/index.htm</p> <p>4.-</p>	
<p>Principle 3. Community Health, Safety and Working Conditions</p>			
<p>1. The Project shall avoid community exposure to</p>	<p>1.Yes</p>	<p>1. The project leads to safe working condition and improvement in health as it will replace coal as fuel with wind which is</p>	<p>1. Health and Safety trainings are provided for all employees regularly.</p>

<p>increased health risks and shall not adversely affect the Health of the workers and the community</p>		<p>clean and safe. Further, periodic trainings are being implemented for all employees to ensure prevention of any unsafe working condition. Turkey has ratified ILO convention 155 and about work safety and precautions</p> <p>https://www.ilo.org/global/standards/subjects-covered-by-international-labour-standards/occupational-safety-and-health/WCMS_356966/lang--en/index.htm</p>	
<p>Principle 4.1 Sites of Cultural and Historical Heritage</p>			
<p>Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture?</p>	<p>No</p>	<p>According to the approved exemption of environmental impact assessment, the project area does not include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture.</p>	<p>N/A</p>
<p>>></p>			

Principle 4.2 Forced Eviction and Displacement			
Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)?	No	For the project activity, no resettlement is required.	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?	No	There is no need for expropriation. Land acquisition was done according to the Turkish Expropriation Laws and Regulations.	N/A
>>			
Principle 5. Corruption			

<p>1. The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects</p>	<p>1.Yes</p>	<p>The Project does not involve any kind of corruption. Turkey is a party to United Nation Convention against Corruption since 2006; http://ua.mfa.gov.tr/detay.aspx?15042 Moreover, Turkey has ratified several conventions on bribery and corruption including OECD and UN conventions http://www.masak.gov.tr/en/LaunderingProceedsofCrime/Chronology.htm</p>	<p>The Project owner has not any negative track record related to corruption or any such activity whatsoever.</p>
<p>Principle 6.1 Labour Rights</p>			
<p>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</p>	<p>1.Yes 2.Yes 3.Yes 4.Yes 5.Yes</p>	<p>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</p>	<p>1. N/A 2. N/A 3. N/A 4. N/A 5. N/A</p>

<p>standards embodied in the ILO fundamental conventions</p> <p>2. Workers shall be able to establish and join labour organisations</p> <p>3. Working agreements with all individual workers shall be documented and implemented and include:</p> <p>a) Working hours (must not exceed 48 hours per week on a regular basis), AND</p>		<p>under this link too:</p> <p>http://www.mevzuat.gov.tr/MevzuatMetin/1.5.6331.pdf</p> <p>1. Turkey has ratified ILO 87 and 98 conventions. All employee are recruited according to the national legislations. Turkey is a party of IPEC (http://www.ilo.org/ipecc/programme/lang--en/index.htm and http://www.ilo.org/ipecc/Regionsandcountries/lang--en/index.htm) since 1992 and ratified ILO convention 138 and 182 (http://www.ilo.org/public/turkish/region/eupro/ankara/about/sozlesmeler.htm).</p> <p>Turkey has ratified ILO convention 155 and about work safety and precautions.</p> <p>2. In accordance with the Labour Code of Turkey, workers should have the right to establish and join the organization that they consider necessary</p>	
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<p>b) Duties and tasks, AND</p> <p>c) Remuneration (must include provision for payment of overtime), AND</p> <p>d) Modalities on health insurance, AND</p> <p>e) Modalities on termination of the contract with provision for voluntary resignation by employee, AND</p> <p>f) Provision for annual leave of not less than 10 days per year, not including</p>		<p>3. The project owner follows regulations of Labour Code of Turkey. All employee are provided with labour contracts, medical insurance and regular health-check as well as social insurance and unemployment insurance.</p> <p>4. Trained technicians are involved in construction and operation and maintenance of plants. Therefore, no child labour is involved.</p> <p>5. 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/eskiler/2013/10/20131005-2.htm). Additionally, relevant staff will be trained to be able to work with high voltages, high heights and heavy machineries.</p>	
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<p>sick and casual leave.</p> <p>4. No child labour is allowed (Exceptions for children working on their families' property requires an Expert Stakeholder opinion)</p> <p>5. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and</p>			
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emergency preparedness and response measures			
Principle 6.2 Negative Economic Consequences			
1. Does the Project cause negative economic consequences during and after project implementation?	No	The project activity involves electricity generation from local and renewable sources. Since Turkey is dependent on import fuel (mainly natural gas and coal), project will not generate any risk but contribute to local economy. Project Activity provides 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?	No	The Project will reduce the emission of 199,321 tCO2e/year compared to the Baseline Scenario as it replaces electricity generated from fossil fuel fired power plants with zero emissions electricity from	N/A
>>			

		the wind power plant. On the contrary, it helps to reduce GHG emissions by producing green energy.	
Principle 7.2 Energy Supply			
Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users?	Partially	The Project’s purpose is to supply clean energy from the wind power plant to the national grid. Plant sometimes can use energy from local grid in the absence of wind. However, this amount is really small when compared to its production of green energy amount.	N/A
>>			
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	No	According to the PIF, there is no aqua production and protected aquifers close to the plant. No lakes or streams are found in the vicinity of the project area.	N/A

watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?			
>>			
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?	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	No	The Project is being implemented in a proper way (by considering the concerns	N/A

<p>for production of crops or other products?</p>		<p>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.</p>	
<p>>></p>			
<p>Principle 9.2 Vulnerability to Natural Disaster</p>			
<p>Will the Project be susceptible to or lead to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding,</p>	<p>No</p>	<p>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</p>	<p>N/A</p>

drought or other extreme climatic conditions?		and harmful natural events such as earthquake.	
>>			
Principle 9.3 Genetic Resources			
Could the Project be negatively impacted by or involve genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development, or take place in facilities or farms that include GMOs in their processes and production)?	No	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			

<p>Could the Project potentially result in the release of pollutants to the environment?</p>	<p>No</p>	<p>During this Crediting Period the Project Activity will produce domestic waste due to employee but it will be collected appropriately. Also, waste oil will be generated due to operation of the wind turbines and they will also be collected and disposed following related regulations and precautions defined by the laws and the Municipality. Moreover, wastewater generated by the employee use will be collected and disposed appropriately following relevant regulations.</p> <p>According to PIF, the closest settlement (in Kozluören Village) is 1130 m away from the nearest turbine of the project activity. Distance-noise calculation for construction period of the project activity shows that the noise level for 1000m is 41.93 dBA, which is below minimum legal limit values i.e. 50 dBA for night and 60 dBA for daylight. The noise level from turbines during operation is low</p>	<p>Wastewater produced will be collected in an impermeable septic tank and will be periodically transferred to treatment plant of Gelenbe Municipality. This process will be handled according to the Regulation of Ministry of Environment and Forestry.</p> <p>Waste oil will be vacuumed by vacuum truck regularly. By this way, discharge of plant sourced waste oil will not be allowed.</p> <p>Following PIF, all waste generated by the workers and machines will be collected in separate closed bins (plastic, metals etc.) and then they will be collected by Soma Municipality. Non recyclable wastes will be collected in impermeable closed bins. Garbage bins' photos</p>
<p>>></p>			

		and under legal limits. Therefore, no negative impact of noise of the project activity to the habitants is expected during operation period. The same is valid for shadow flickering effect. Since the nearest residential house is 1130 m away from the closest turbine there is no shadow flickering effect.	will be provided for solid household waste. By this way, solid waste disposal will not be allowed.
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?	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 Hazardous waste including lubricant, grease, light bulb, accumulator, etc. may release during the maintenance process of equipment; and	The following mitigation measures will be applied to the project activity. Hazardous wastes are collected and treated by the third authorized party in accordance with local laws and related regulations; Non-hazardous wastes are collected and treated in accordance with local laws and related regulations.
>>			

		Non-hazardous waste including domestic solid waste and domestic waste water are generated from worker’s activities.	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?	No	The Project’s purpose is to supply clean energy from the wind power plant to the national grid. Therefore the Project does not involve the application of pesticides and/or fertilizers.	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 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.	N/A
>>			
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 modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives.	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 disrupt husbandry and agriculture in the region.	N/A
>>			
Principle 9.10 High Conservation Value Areas and Critical Habitats			
Does the Project physically affect or alter largely intact or High Conservation Value	1.No	There is no endangered flora or fauna in the region. The project site has no protection status in terms of National Park, Land Fence, Protection of Cultural and Natural Assets and	N/A

<p>(HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified?</p>		<p>similar laws. The project is not located in an area within a high conservation value area or within critical natural habitats or key biodiversity areas or site identified.</p> <p>Therefore, the project activity does not affect or alter ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified.</p>	
<p>>></p>		<p>The project area is not on the migration path of birds therefore the effect on birds by the project activity is negligible. However, proper mitigation measures will be applied to the project activity including: painting over turbine with white color and installation of warning lights.</p>	
<p>Principle 9.11 Endangered Species</p>			
<p>Are there any endangered species identified as potentially being present within the</p>	<p>1.No 2.No</p>	<p>1. According to the PIF, the project area is not in natural protection zone. There are no endangered species identified as potentially being present the project Boundary.</p>	<p>N/A</p>

<p>Project boundary (including those that may route through the area)?</p> <p>AND/OR</p> <p>Does the Project potentially impact other areas where endangered species may be present through transboundary affects?</p>		<p>2. According to PIF and also the bird routes map of Doga Dernegi (an environmental NGO in Turkey), the project is not on the route of migration birds. The project doesn't affect adversely the migration of birds.</p>	
<p>>></p>			

APPENDIX 2- CONTACT INFORMATION OF PROJECT PARTICIPANTS

Organization name	Bilgin Güç Santralleri Enerji Üretim A.Ş.
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APPENDIX 3- LUF ADDITIONAL INFORMATION

Risk of change to the Project Area during Project Certification Period:	
Risk of change to the Project activities during Project Certification Period:	
Land-use history and current status of Project Area:	
Socio-Economic history:	
Forest management applied (past and future)	
Forest characteristics (including main tree species planted)	
Main social impacts (risks and benefits)	
Main environmental impacts (risks and benefits)	
Financial structure	
Infrastructure (roads/houses etc):	
Water bodies:	
Sites with special significance for indigenous people and local communities - resulting from the Stakeholder Consultation:	
Where indigenous people and local communities are situated:	
Where indigenous people and local communities have legal rights, customary rights or sites with special cultural, ecological, economic, religious or spiritual significance:	

APPENDIX 4-SUMMARY OF APPROVED DESIGN CHANGES

Please refer to Design Change [Requirements](#) for more information on procedures governing Design Changes

Revision History

Version	Date	Remarks
1.2	14 October 2020	Hyperlinked section summary to enable quick access to key sections Improved clarity on Key Project Information Inclusion criteria table added Gender sensitive requirements added Prior consideration (1 yr rule) and Ongoing Financial Need added Safeguard Principles Assessment as annex and a new section to include applicable safeguards for clarity Improved Clarity on SDG contribution/SDG Impact term used throughout Clarity on Stakeholder Consultation information required Provision of an accompanying Guide to help the user understand detailed rules and requirements
1.1	24 August 2017	Updated to include section A.8 on 'gender sensitive' requirements
1.0	10 July 2017	Initial adoption