

MONITORING REPORT

PUBLICATION DATE **14.10.2020**

VERSION **v.1.1**

RELATED SUPPORT – **TEMPLATE GUIDE Monitoring Report v. 1.1**

This document contains the following Sections

Key Project Information

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KEY PROJECT INFORMATION

Key Project Information

GS ID (s) of Project (s)	3253
Title of the project (s) covered by monitoring report	Soma III Wind Farm
Version number of the PDD/VPA-DD (s) applicable to this monitoring report	9
Version number of the monitoring report	65
Completion date of the monitoring report	3012/064/2022
Date of project design certification	Design Certification Date:28/09/2015 Design Change Approval Date:30/03/2020
Date of Last Annual Report	-
Monitoring period number	3
Duration of this monitoring period	01/07/2019 – 30/06/2021
Project Representative	Sekans Danışmanlık
Host Country	Turkey
Activity Requirements applied	☐ Community Services Activities ☒ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A
Methodology (ies) applied and version number	ACM0002 "Grid-connected electricity generation from renewable sources", version 19.0
Product Requirements applied	☒ ☐ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ ☒ N/A

Table 1 - Sustainable Development Contributions Achieved

Sustainable Development Goals Targeted	SDG Impact	Amount Achieved	Units/ Products
SDG 7 Ensure access to affordable, reliable,	MWh of renewable energy generated	810,482.26	MWh

sustainable and modern
energy for all

SDG 8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all Decent Work and Economic Growth	Number of employment	44	-
SDG 13 Take urgent action to combat climate change and its impacts	Emission reductions	483,046	VERs

Table 2 – Product Vintages

		Amount Achieved
Start Dates	End Dates	VERs
01/07/2019	31/12/2019	90,041
01/01/2020	31/12/2020	261,469
01/01/2021	30/06/2021	131,536

SECTION A. DESCRIPTION OF PROJECT

A.1. General description of project

Soma III Wind Farm, which has been developed by Soma Enerji Elektrik Üretim A.Ş. (hereafter referred as the project participant), plans to develop and operate Soma III Wind Farm (hereafter referred as the proposed project activity) is located in Savaştepe District of Balıkesir Province and Soma District of Manisa Province in Turkey.

The proposed project activity involves installation of 50 wind turbines with a total installed capacity of 100 MW. The capacity of the proposed project activity has been added to the existing Soma Project, which has already been registered under the GS and issuing credits since 2009 (GS ID:398). The existing project (Soma I&II) is consisting of 119 turbines with an installed capacity of 140.1 MW. Soma I&II has been registered as a GS project activity

on 17.11.2010 and has been issuing GS VER credits since then. The Project Participant developed and registered the proposed project activity (Soma III) also under Gold Standard rules. Soma I, II and III have been operating under the same generation license obtained from the EMRA.

The Project Participant has realized a capacity addition of 12 turbines as applying to EMRA for license revision. The generation license has been revised on 04/10/2018 as having the capacity of these turbines to be added which totals to 48 MW. Soma I, II and III are going on operating under the same generation license obtained from the EMRA. The capacity addition started its first operation on 27/03/2020. With the new capacity, 148 MW, the project activity generates approximately 429,828 MWh per annum and reduces 239,514 tCO₂ of emission reductions per year.

The commissioning dates of the project activity may be seen through Table 3:

Table 3- Commissioning dates of turbines

Date	Comissioning of Turbines
28/11/2014	Commissioning of 16 turbines
25/12/2014	Commissioning of 12 turbines
07/02/2015	Commissioning of 3 turbines
20/03/2015	Commissioning of 9 turbines
09/04/2015	Commissioning of 6 turbines
26/06/2015	Commissioning of 4 turbines
27/03/2020	Commissioning of 9 turbines
06/05/2020	Commissioning of 3 turbines

During its operation during this monitoring period, the actualized net electricity generation is 810,482.26 MWh. The actual emission reduction has been calculated as 483,046 tonnes CO₂ for this monitoring period.

The project has produced positive environmental benefits as displacing the electricity generated by fossil fuel fired power plants by utilising the renewable resources to avoid environmental pollution and GHG emissions.

Important milestones of the project activity are summarized as follows:

Table 4 – Milestones

Date	Event
15.07.2013	Board Decision on VERs
27.11.2013	Turbine contract agreement
20.03.2014	Local Stakeholders Consultation Meeting
31.03.2014	Forestry Permit
30.06.2014	Bank Loan Agreement
28.11.2014	Commissioning of 16 turbines
25.12.2014	Commissioning of 12 turbines
07.02.2015	Commissioning of 3 turbines
04.10.2018	Revision of Generation License by EMRA
08.03.2019	Board Decision on VERs for the Capacity Extension ¹
30.04.2019	Construction Agreement for the Capacity Extension
10.05.2019	Turbine Agreement for the Capacity Extension
16.07.2019	Local Stakeholders Consultation Meeting for the Capacity Extension
01.08.2019	Bank Loan Agreement for Capacity Extension
27/03/2020	Commissioning of 9 turbines
06/05/2020	Commissioning of 3 turbines

A.2. Location of project

The proposed project activity is located within Balıkesir Province, Central District and Manisa Province Kırkağaç District.

¹ Board decision is available to the DOE.

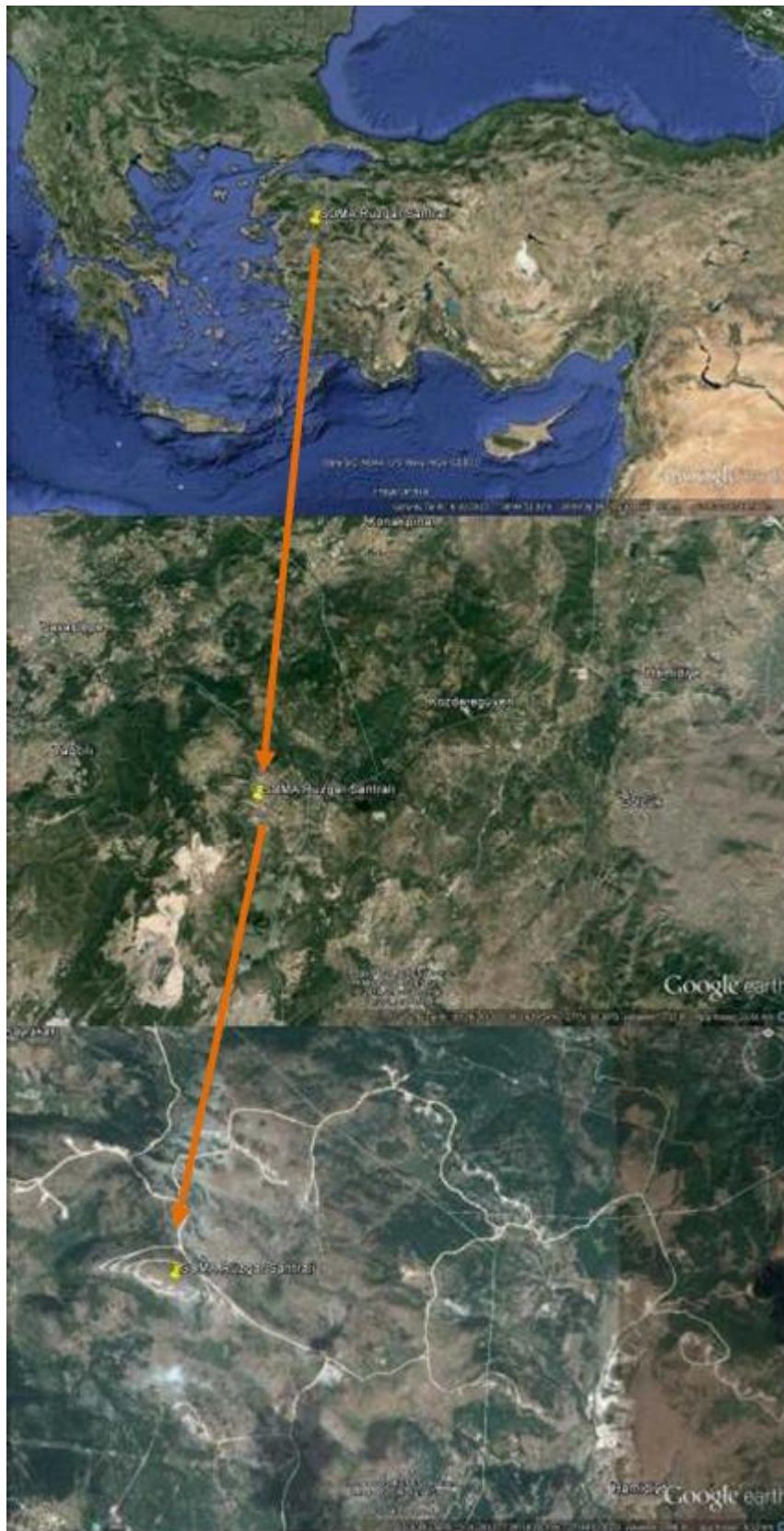


Figure 1. The location of the project

Table 4- Coordinates of the Project Activity²

	E	N		E	N
T120	570221,00	4347797,00	T154	567639,00	4348783,00
T121	570444,00	4348539,00	T155	568388,00	4348293,00
T122	570453,00	4347753,00	T156	568510,00	4348136,00
T123	570918,00	4347852,00	T157	563533,00	4357312,00
T124	567609,00	4358022,00	T158	563692,00	4357229,00
T125	567998,00	4357841,00	T159	563795,00	4357087,00
T126	567811,00	4357945,00	T160	563888,00	4356793,00
T127	568695,00	4357560,00	T161	564024,00	4356670,00
T128	568855,00	4357411,00	T162	564638,00	4355333,00
T129	569109,00	4357347,00	T163	564802,00	4355242,00
T130	569396,00	4357403,00	T164	568691,00	4345793,00
T131	569684,00	4357490,00	T165	569508,00	4346344,00
T132	570160,00	4357069,00	T166	569664,00	4346255,00
T133	570457,00	4357049,00	T167	569831,00	4345249,00
T134	570704,00	4357095,00	T168	570014,00	4345137,00
T135	570849,00	4356944,00	T169	567535,00	4352960,00
T136	571162,00	4357171,00	T170	568261,00	4357770,00
T137	571588,00	4357538,00	T171	566757,00	4346414,00
T138	567834,00	4357143,00	T172	566110,00	4357960,00
T139	568048,00	4357089,00	T173	566747,00	4357966,00
T140	568405,00	4356849,00	T174	568927,00	4347728,00
T141	569734,00	4349228,00	T175	567325,00	4357969,00
T142	569913,00	4349180,00	T176	567431,30	4357241,60
T143	570041,00	4349050,00	T177	566439,70	4357944,40
T144	570156,00	4348886,00	T178	569165,00	4347364,00
T145	571061,00	4348836,00			
T146	570406,00	4351836,00	T179	566248,00	4355660,00
T147	570549,00	4351674,00	T180	567033,00	4357960,00
T148	570844,00	4351601,00	T181	566624,00	4355732,00
T149	571060,00	4351616,00			
T150	569072,00	4351611,00			
T151	567355,00	4349338,00			
T152	567345,00	4349005,00			
T153	567495,00	4348902,00			

²The Generation License is available to the VVB. The Generation License includes both the turbines of the project activity and Soma—Polat Wind Farm Project, Turkey (GS-398). The turbines between T120-181 belongs the project activity.

	E	N		E	N
T1	569445,00	4351275,00	T92	564823,00	4356299,00
T2	569537,00	4351237,00	T93	565020,00	4356219,00
T3	568766,00	4345588,00	T94	565400,00	4356048,00
T4	568857,00	4345539,00	T95	565595,61	4355960,52
T5	568945,00	4345492,00	T96	565744,35	4355796,42
T6	569034,00	4345445,00	T97	565948,00	4355721,00
T7	569135,00	4345433,00	T98	566361,00	4353834,20
T8	569235,00	4345419,00	T99	566549,00	4353703,00
T9	569339,00	4345406,00	T100	566745,00	4353614,00
T10	569443,00	4345414,00	T101	566255,50	4352471,47
T11	568649,00	4348041,00	T102	566492,10	4352436,31
T12	568722,00	4347967,00	T103	565676,36	4352069,48
T13	568790,00	4347894,00	T104	565906,14	4352027,47
T14	566975,00	4349557,00	T105	566122,44	4351962,12
T15	567042,00	4349484,00	T106	566298,80	4351827,58
T16	567116,00	4349418,00	T107	565194,00	4347131,00
T17	567191,00	4349351,00	T108	565417,59	4347068,86
T18	566678,00	4351421,00	T109	565870,84	4347195,43
T19	566787,00	4351411,00	T110	566146,18	4347233,84
T20	566891,00	4351396,00	T111	566391,13	4347225,45
T21	566999,00	4351399,00	T112	564658,28	4345655,46
T22	567091,00	4351360,00	T113	564825,36	4345502,82
T23	567183,00	4351322,00	T114	564949,00	4345308,00
T24	567276,00	4351284,00	T115	565007,00	4345046,00
T25	567368,00	4351246,00	T116	565166,39	4344903,33

T26	567475,00	4351242,00	T117	565266,99	4344671,21
T27	567567,00	4351203,00	T118	565430,14	4344496,28
T28	567660,00	4351165,00	T119	565578,17	4344299,52
T29	567752,00	4351127,00	T120	570221,00	4347797,00
T30	568843,00	4353248,00	T121	570444,00	4348539,00
T31	568934,00	4353205,00	T122	570453,00	4347753,00
T32	569029,00	4353174,00	T123	570918,00	4347852,00
T33	569053,00	4353009,00	T124	567609,00	4358022,00
T34	569135,00	4352907,00	T125	567998,00	4357841,00
T35	569227,00	4352869,00	T126	567811,00	4357945,00
T36	569320,00	4352830,00	T127	568695,00	4357560,00
T37	567381,00	4352552,00	T128	568855,00	4357411,00
T38	567499,00	4352560,00	T129	569109,00	4357347,00
T39	567600,00	4352543,00	T130	569396,00	4357403,00
T40	567669,00	4352461,00	T131	569684,00	4357490,00
T41	567772,00	4352435,00	T132	570160,00	4357069,00
T42	567857,00	4352379,00	T133	570457,00	4357049,00
T43	567943,00	4352325,00	T134	570704,00	4357095,00
T44	568025,00	4352261,00	T135	570849,00	4356944,00
T45	568084,00	4352190,00	T136	571162,00	4357171,00
T46	568260,00	4352051,00	T137	571588,00	4357538,00
T47	568356,00	4352019,00	T138	567834,00	4357143,00
T48	567238,00	4347285,00	T139	568048,00	4357089,00
T49	567311,00	4347198,00	T140	568405,00	4356849,00
T50	567376,00	4347086,00	T141	569734,00	4349228,00
T51	567442,00	4346991,00	T142	569913,00	4349180,00
T52	567489,00	4346877,00	T143	570041,00	4349050,00
T53	567960,00	4348366,00	T144	570156,00	4348886,00
T54	568015,00	4348238,00	T145	571061,00	4348836,00
T55	568070,00	4348110,00	T146	570406,00	4351836,00
T56	568125,00	4347981,00	T147	570549,00	4351674,00
T57	568180,00	4347853,00	T148	570844,00	4351601,00
T58	568236,00	4347724,00	T149	571060,00	4351616,00
T59	568279,00	4347607,00	T150	569072,00	4351611,00
T60	571360,00	4351098,00	T151	567355,00	4349338,00
T61	571448,00	4351063,00	T152	567345,00	4349005,00
T62	571540,00	4351025,00	T153	567495,00	4348902,00

T63	571593,00	4350866,00	T154	567639,00	4348783,00
T64	571665,00	4350804,00	T155	568388,00	4348293,00
T65	571757,00	4350765,00	T156	568510,00	4348136,00
T66	571849,00	4350726,00	T157	563533,00	4357312,00
T67	571942,00	4350689,00	T158	563692,00	4357229,00
T68	572037,00	4350650,00	T159	563795,00	4357087,00
T69	567398,00	4350357,00	T160	563888,00	4356793,00
T70	567470,00	4350276,00	T161	564024,00	4356670,00
T71	567536,00	4350201,00	T162	564638,00	4355333,00
T72	567625,00	4350154,00	T163	564802,00	4355242,00
T73	569589,00	4350567,00	T164	568691,00	4345793,00
T74	569753,00	4350635,00	T165	569508,00	4346344,00
T75	569861,00	4350657,00	T166	569664,00	4346255,00
T76	569953,00	4350606,00	T167	569831,00	4345249,00
T77	570048,00	4350568,00	T168	570014,00	4345137,00
T78	570140,00	4350530,00	T169	567535,00	4352960,00
T79	570225,00	4350476,00	T170	568261,00	4357770,00
T80	569556,00	4352419,00	T171	566757,00	4346414,00
T81	569648,00	4352382,00	T172	566110,00	4357960,00
T82	569742,00	4352344,00	T173	566747,00	4357966,00
T83	569808,00	4352243,00	T174	568927,00	4347728,00
T84	569873,00	4352138,00	T175	567325,00	4357969,00
T85	569972,00	4352117,00	T176	567431,30	4357241,60
T86	570056,00	4352058,00	T177	566439,70	4357944,40
T87	570117,00	4351986,00	T178	569165,00	4347364,00
T88	570202,00	4351927,00	T179	566248,00	4355660,00
T89	564229,89	4356683,00	T180	567033,00	4357960,00
T90	564389,35	4356536,52	T181	566624,00	4355732,00
T91	564562,15	4356395,44			

A.3. Reference of applied methodology

Applied approved baseline and monitoring methodologies:

- Large scale consolidated methodology ACM0002 "Grid-connected electricity generation from renewable sources", version 19.0

Used tools:

- "Tool for the demonstration and assessment of additionality", version 7.0.0 EB70 Annex 8
- "Tool to calculate the emission factor for an electricity system", version 07.0

A.4. Crediting period of project

Renewable Crediting Period is selected as the type of crediting. The start of crediting period is defined as the date of start of operation or a maximum of two years prior to Gold Standard registration, whichever occurs later, in line with the requirements of Gold Standard v2.2.

The first crediting period is 7 years and renewable twice.

The project was registered on 28/09/2015 with a renewable crediting period. The first crediting period starts from 28/11/2014 to 27/11/2021.

SECTION B. IMPLEMENTATION OF PROJECT

B.1. Description of implemented project

The proposed project activity involves the installation of 62 units of wind turbines with a total installed capacity of 148 MW. The project activity is expected to generate approximately 429,828 MWh/year of net electricity. The total capacity addition will be reached by installation of Enercon E-70 and E126 gearless turbines. The key technical specifications of the turbines are as follows:

Table 5- Key technical specifications of wind turbines

Parameter	Value	
	Existing Capacity (100 MW, E-70)	Capacity Extension (48 MW, E-126)
Rated Power	2MW	4MW
Rotor Diameter	71m	127m
Rotor Type	Upwind rotor with active pitch control	
Turbine Concept	Gearless, variable speed, single blade adjustment	Gearless, variable speed, single blade adjustment
Number of blades	3	3
Swept Area	3959 m ²	12,668 m ²
Hub Height	64 m	116m
Blade Material	GRP (epoxy resin); built in lightning protection	GRP (epoxy resin); built in lightning protection
Rotational speed	Variable, 6-21 rpm	Variable, 6-21 rpm
Pitch Control	Enercon single blade pitch system; one independent pitch system per rotor blade with allocated emergency supply	Enercon single blade pitch system; one independent pitch system per rotor blade with allocated emergency supply
Generator	Enercon direct drive annular generator	Enercon direct-drive annular generator
Brake Systems	- 3 independent pitch control systems - Rotor brake - Rotor lock	- 3 independent pitch control systems with emergency power supply - Rotor brake
Yaw System	Active via yaw gear, load dependent damping	Active via yaw gear, load-dependent damping
Cut out wind speed	28-34m/s	28 - 34 m/s

B.1.1. Forward Action Requests

Forward Action Request # 1: Next verifying VVB shall discuss if the expropriation activities related to the project site are finalized, the amount of private land that is expropriated and

how it is conducted (court / individual agreements) and if the paid amount is fair based on regional market prices.

- The expropriation process of the whole land has been completed. According to procedures, the title deed is revised at the end of the process. However, the title deed has not been revised yet, and it's expected to be ready during the next verification. Some of the payment receipts have been provided to the VVB.

Forward Action Request # 2: For indicator "quantitative employment and income generation" please monitor how many employees being local during next monitoring period In-line with transition to GS4GG and VVB shall verify the same via interviews and document vetting.

~~- Since local employment has not been determined to be monitored in Transition Annex, there is no need to monitor this parameter during the monitoring period.~~
~~- Due to the law on the protection of personal data, the details/records for the local employment cannot be shared by the Project Owner. 39 local employees are working for the project company³.~~

Forward Action Request # 3: During next verification, the VVB shall assess sustainability monitoring parameters In-line with Transition Annex and GS4GG requirements considering the design change aspects and Impacts

- Sustainability monitoring parameters are in-line with Transition Annex and GS4GG requirements considering the design change aspects and Impacts.

Forward Action Request # 4: Please monitor the methods for waste disposal/discharge during the next monitoring period In-line with Transition Annex and GS4GG requirements and VVB shall verify the same

The details have been given in parameter, Safeguarding Principle 4.3.5: Hazardous and Non-hazardous Waste.

³ [Signed declaration of the Project Owner.](#)

B.2. Post-Design Certification changes

B.2.1. Temporary deviations from the approved Monitoring & Reporting Plan, methodology or standardized baseline

There are no project or methodology deviations applied during this monitoring period.

B.2.2. Corrections

There are no corrections applied during this monitoring period.

B.2.3. Changes to start date of crediting period

There are no changes applied to the start date of the crediting period during this monitoring period.

B.2.4. Permanent changes from the Design Certified monitoring plan, applied methodology or applied standardized baseline

There are no changes applied to the start date of the crediting period during this monitoring period.

B.2.5. Changes to project design of approved project

There are no changes to project design during this monitoring period.

SECTION C. DESCRIPTION OF MONITORING SYSTEM APPLIED BY THE PROJECT

The objective of the monitoring plan is to ensure the complete, consistent, clear, and accurate monitoring and calculation of the emission reductions during the whole crediting period. The Project Owner is responsible for the implementation of the monitoring plan.

The Project Owner is responsible for the overall management of the monitoring procedures including recording, data collection, calculating emission reductions and project emissions.

All monitoring procedures and requirements of the proposed project activity is in accordance with the methodology ACM0002 "Grid-connected electricity generation from renewable sources" version 19.0.

Metering: The main source for electricity generation metering will be the TEİAŞ meters installed and sealed by TEİAŞ. Since the TEİAŞ meters are sealed by TEİAŞ and are also the basis of invoicing, a high accuracy and reliability is ensured. Also, the TEİAŞ meters have

the ability to measure both the amount of electricity exported to the grid as well as the amount of electricity imported by the project activity, which provides an accurate and reliable measurement of the net electricity.

Additionally, the Project Owner enters the expected electricity generation on daily basis to the website of EPIAS which is the financial settlement center of TEİAŞ. The website of EPIAŞ is accessible to project owner with their unique user ID and password. The difference between the expected and generated electricity (imbalance) is costed the project owner at the end of each month. The electricity generation data is reported monthly. EPIAS records are used as the source of net generated electricity value and meter reading forms or OSF forms issued by TEİAŞ will be used for the crosscheck.

Meter readings: Once a month, the project participant will perform data readings. The monthly results will be recorded by the project participant both manually and electronically.

Data storage: Data will be stored electronically, during the crediting period and at least two years after the last issuance of credits for the wind farm project activity in the concerning crediting period. The Project Participant will be responsible for storage of data received from the measuring devices.

Responsibilities for monitoring

The Project Owner is responsible for the operation and maintenance of the project activity and the installed equipment. The project owner is also responsible for the administration of the data, setting up a VER team who is responsible for monitoring all data required to estimate emission reductions. Emission reductions are calculated by the VER consultant, Sekans. In the diagram below the organization of monitoring management and data application may be seen:

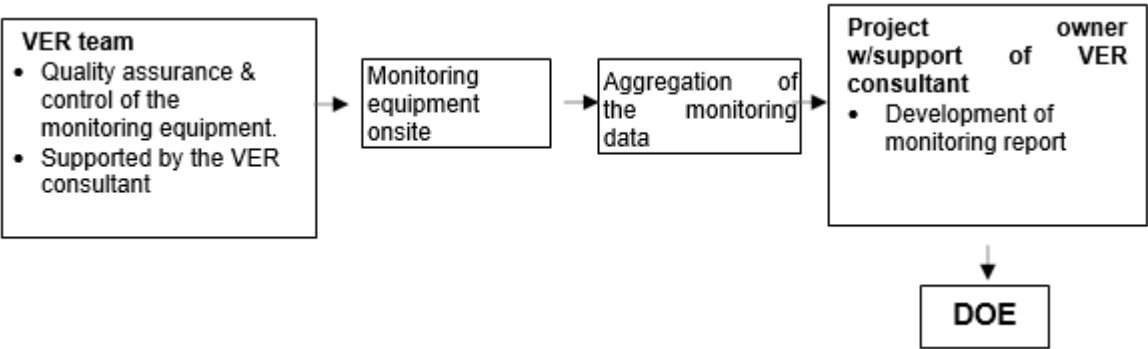


Figure 2. The management structure for the plant operation

Quality assurance and quality control: The main source of measurement is the TEİAŞ meters, which are sealed by TEİAŞ and since it is subject to monthly invoicing high reliability and

accuracy is secured. In accordance with the requirements of TEİAŞ, there are four meters installed at the site where the two are called the main meters and the other ones as secondary. TEİAŞ is the main responsible for calibration and maintenance of the devices. TEİAŞ performs the necessary maintenance and calibration. Since the electricity generation data is used for the billing and accounting between TEİAŞ and the project participant the data is of high quality.

The primary source is the EPIAS records. Net electricity exported is crosschecked with Meter Reading Forms. EPIAS is the financial settlement center of TEİAŞ. The Meter Reading Forms are filled by the project owner and approved by the governmental officers. Additionally, the remote reading by the governmental body is also available. The website of EPIAS is accessible to Project Owner with their unique user ID and password. Once accessed, the Project Owner is able to call electricity generation for invoicing TEİAŞ. The electricity generation data is reported monthly basis.

Corrective actions and emergency preparedness: The Project Owner regularly check the monitoring system on errors. In the case of errors, corrective actions will be undertaken by the Project Participant, or if required, by the supplier of the monitoring equipment

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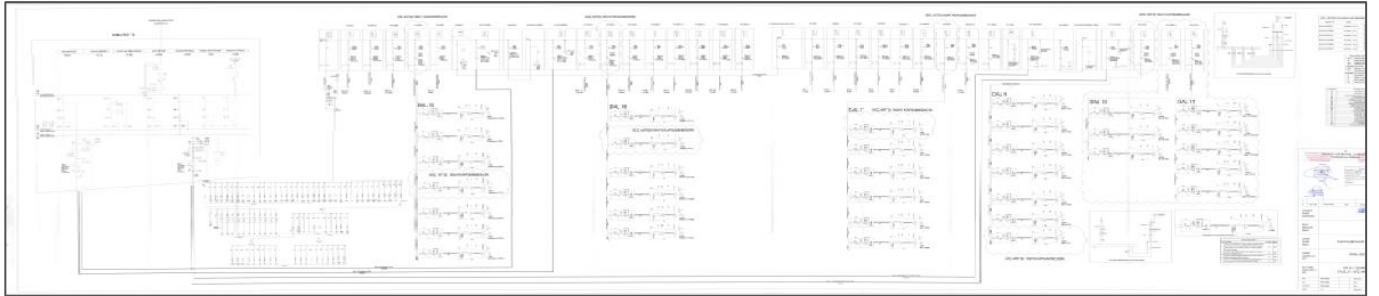
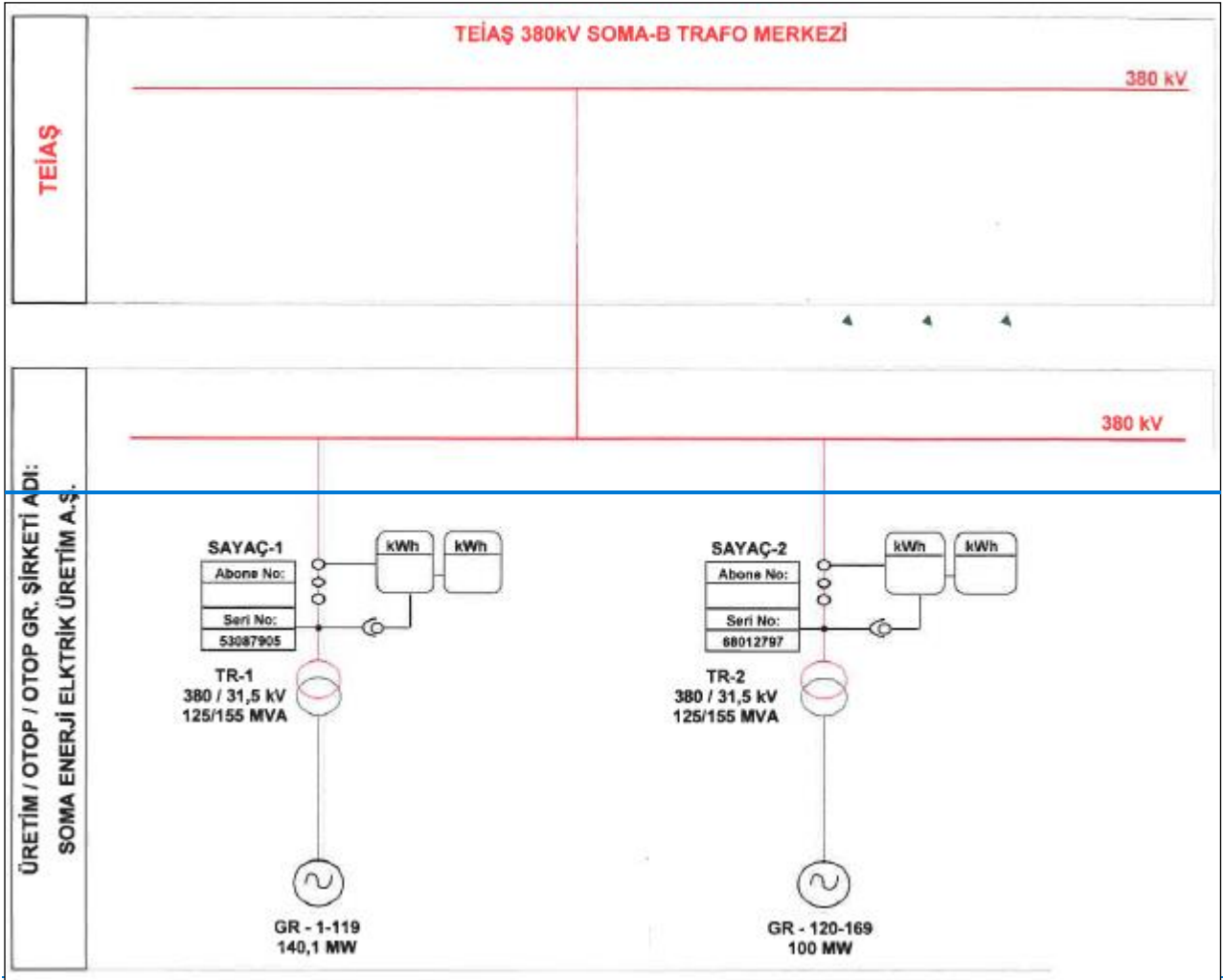


Figure 3. The single line diagram of the Project Activity

Data will be stored electronically, during the crediting period and at least two years after the last issuance of credits for the wind farm project activity in the concerning crediting period. The Project Owner is responsible for storage of data received from the measuring devices. Site manager is responsible for data aggregation.

During the monitoring period, no breakdown or serious maintenance work has been experienced. Ordinary maintenance activities have been executed.

SECTION D. DATA AND PARAMETERS

D.1. Data and parameters fixed ex ante or at renewal of crediting period

Relevant Indicator	SDG	13.3.2 Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions" and following target
Data/parameter		$EG_{m,y}$
Unit		MWh
Description		Net electricity generated by power plant/unit m
Source of data		TEIAS (Turkish Electricity Transmission Company) http://www.teias.gov.tr/istatistikler.aspx
Value(s) applied		Detailed in section B 6.3 of the registered PDD
Choice of data or Measurement methods and procedures		According to "Turkish Statistics Law and Official Statistics Program" TEIAS, the Turkish Electricity Transmission Company is the official source for the related data, hence providing the most up-to-date and accurate information available.
Purpose of data		Calculation of combined margin CO ₂ emission factor and thus the baseline emissions-to demonstrate contribution to SDG Target 13.3.: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
Additional comment		-

Relevant Indicator	SDG	13.3.2 Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions" and following target
Data/parameter		$FC_{i,y}$
Unit		tonnes (m3 for gaseous fuels)
Description		Amount of fossil fuel type i consumed in the project electricity system by generation sources in year y (2009-2011)
Source of data		TEIAS (Turkish Electricity Transmission Company) http://www.teias.gov.tr/istatistikler.aspx
Value(s) applied		Detailed in section B 6.3 of the registered PDD
Choice of data or Measurement methods and procedures		According to "Turkish Statistics Law and Official Statistics Program" TEIAS, the Turkish Electricity Transmission Company is the official source for the related data, hence providing the most up-to-date and accurate information available.

Purpose of data	Calculation of combined margin CO ₂ emission factor and thus the baseline emissions-to demonstrate contribution to SDG Target 13.3.: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
Additional comment	-

Relevant Indicator	SDG	13.3.2 Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions” and following target
Data/parameter		NCV _{i,y}
Unit		GJ/tonnes (m3 for gaseous fuels)
Description		Net calorific value (energy content) of fossil fuel type i in year y
Source of data		TEIAS (Turkish Electricity Transmission Company) http://www.teias.gov.tr/istatistikler.aspx
Value(s) applied		Please refer to section B 6.3 of the registered PDD
Choice of data or Measurement methods and procedures		According to “Turkish Statistics Law and Official Statistics Program” TEIAS, the Turkish Electricity Transmission Company is the official source for the related data, hence providing the most up-to-date and accurate information available.
Purpose of data		Calculation of combined margin CO ₂ emission factor and thus the baseline emissions to demonstrate contribution to SDG Target 13.3.: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
Additional comment		-

Relevant Indicator	SDG	13.3.2 Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions” and following target
Data/parameter		EF _{CO₂,i,y}
Unit		tCO ₂ /GJ
Description		CO ₂ emission factor of fossil fuel type i” used in power unit min year y
Source of data		IPCC default values at the lower limit of the uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter 1 of Volume 2 (Energy) of the 2006 IPCC Guidelines for National Greenhouse Gas Inventory http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.htm
Value(s) applied		Please refer to section B 6.3 of the registered PDD
Choice of data or Measurement methods and procedures		There is no information on the fuel specific default emission factor in Turkey, hence, IPCC values has been used.
Purpose of data		Calculation of combined margin CO ₂ emission factor and thus the baseline emissions to demonstrate contribution to SDG Target 13.3.: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

Additional comment	-
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Relevant Indicator	SDG	13.3.2 Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions” and following target											
Data/parameter	$\eta_{m,y}$												
Unit	%												
Description	Average net energy conversion efficiency of power unit m in year y												
Source of data	“Tool to calculate the emission factor for an electricity system”												
Value(s) applied	<table><tr><td></td><td>Average conversion efficiency $\eta_{m,y}$</td></tr><tr><td>Natural Gas</td><td>IPCC default value of 60% for combined cycle</td></tr><tr><td>Lignite</td><td>IPCC default value of 45% for Supercritical IPCC default value of 41.4% for PFBS</td></tr><tr><td>Coal</td><td>IPCC default value of 45% for Supercritical IPCC default value of 41.4% for PFBS</td></tr><tr><td>Fuel Oil</td><td>IPCC default value of 46% for combined cycle</td></tr></table>				Average conversion efficiency $\eta_{m,y}$	Natural Gas	IPCC default value of 60% for combined cycle	Lignite	IPCC default value of 45% for Supercritical IPCC default value of 41.4% for PFBS	Coal	IPCC default value of 45% for Supercritical IPCC default value of 41.4% for PFBS	Fuel Oil	IPCC default value of 46% for combined cycle
	Average conversion efficiency $\eta_{m,y}$												
Natural Gas	IPCC default value of 60% for combined cycle												
Lignite	IPCC default value of 45% for Supercritical IPCC default value of 41.4% for PFBS												
Coal	IPCC default value of 45% for Supercritical IPCC default value of 41.4% for PFBS												
Fuel Oil	IPCC default value of 46% for combined cycle												
Choice of data or Measurement methods and procedures	Default values have been used.												
Purpose of data	Calculation of combined margin CO ₂ emission factor and thus the baseline emissions to demonstrate contribution to SDG Target 13.3.: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning												
Additional comment	-												

D.2. Data and parameters monitored

Relevant SDG Indicator/Safeguarding Principle	SDG 7.2.1 Renewable energy share in the total final energy consumption
Data / Parameter	EG _{PJ_ADD,y}
Unit	MWh
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y
Source of data	EPIAS records

Value(s) applied	<table><tr><th>Period</th><th>Generation (MWh)</th></tr><tr><td>01.07.2019-31.12.2019</td><td>151,077.15</td></tr><tr><td>01.01.2020-31.12.2020</td><td>438,706.62</td></tr><tr><td>01.01.2021-30.06.2021</td><td>220,698.49</td></tr><tr><td>Total</td><td>810,482.26</td></tr></table>	Period	Generation (MWh)	01.07.2019-31.12.2019	151,077.15	01.01.2020-31.12.2020	438,706.62	01.01.2021-30.06.2021	220,698.49	Total	810,482.26					
Period	Generation (MWh)															
01.07.2019-31.12.2019	151,077.15															
01.01.2020-31.12.2020	438,706.62															
01.01.2021-30.06.2021	220,698.49															
Total	810,482.26															
Measurement methods and procedures	The net electricity is measured continuously by a power meter at the grid interface and recorded monthly. EPIAS records are the source of the exact electricity generation of the project and the imports from the grid. The quantity of net electricity delivered to the grid is crosschecked with the meter reading forms which are provided to the company by TEIAS. TR-2 power meters belong to the Project Activity. <table><tr><td></td><td>Primary Meter</td><td>Secondary Meter</td></tr><tr><td>Brand/Model</td><td>EMH/ LZQJ-XC</td><td>EMH/ LZQJ-XC</td></tr><tr><td>Serial Number</td><td>7019903</td><td>9798710</td></tr><tr><td>Accuracy of meters</td><td>0.2 S</td><td>0.2 S</td></tr><tr><td>Calibration Date</td><td>18/02/2018</td><td>10/12/2020</td></tr></table> There are also power meters (main and back-up) named as TR-1. These power meters belong to the Soma – Polat Wind Farm Project which appears in the same generation license. Two turbines, T171 and T179, of the Project Activity are connected to these power meters. For the aim of reaching the generation of these turbines, Scada monitoring are used as source. Please see section E.1 for the details.		Primary Meter	Secondary Meter	Brand/Model	EMH/ LZQJ-XC	EMH/ LZQJ-XC	Serial Number	7019903	9798710	Accuracy of meters	0.2 S	0.2 S	Calibration Date	18/02/2018	10/12/2020
	Primary Meter	Secondary Meter														
Brand/Model	EMH/ LZQJ-XC	EMH/ LZQJ-XC														
Serial Number	7019903	9798710														
Accuracy of meters	0.2 S	0.2 S														
Calibration Date	18/02/2018	10/12/2020														
Monitoring frequency	The electricity is measured continuously and recorded at least monthly.															

QA/QC procedures	A secondary meter is used for crosschecking the accuracy and both meters are calibrated if required. EPIAS records are considered as the main source for the net electricity and the values are crosschecked with the data measured by meters. Net electricity exported is crosschecked with Meter Reading Forms issued by Project owner and approved by governmental officers.
Purpose of data	To measure the electricity produced and supplied to the grid and thus calculation of emission reductions
Additional comment	-

Relevant SDG Indicator/Safeguarding Principle	Safeguarding Principle 3.6.1: Labour Rights
Data / Parameter	Quality of employment
Unit	N/A
Description	Weekly working hours and fair wage
Source of data	Social Security System (SGK) .
Value(s) applied	Due to the law on the protection of personal data, pay scale cannot be shared. Since the 30-working days are seen on the records, it's obvious that the employees are fully paid which means no payment could be done below minimum wage range.
Measurement methods and procedures	Social Security System (SGK) records
Monitoring frequency	Once for each monitoring period
QA/QC procedures	SGK records of employees are provided during each monitoring period.
Purpose of data	SDG 8.5.By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value
Additional comment	-

Relevant SDG Indicator/Safeguarding Principle	Safeguarding Principle 4.3.4: Release of pollutants
Data / Parameter	Air Quality
Unit	SOx and NOx (kg/MWh)
Description	a. The electricity delivered to the grid by the project activity substitutes the same amount of electricity generated from the generation mix of Turkey, which is dominated by fossil fuels. SOx and NOx reduction due to the project activity will be monitored. b. In order to reduce dust emissions during the construction phase, roads were sprinkled with water, loading and unloading of material that could generate dust were done without throwing into air, loads on the hauling vehicles were covered while in transport.
Source of data	a. United States Environmental Protection Agency for SOx and NOx emissions per MWh (Hata! Köprü başvurusu geçerli değil.) —EPIAS records for electricity production b. N/A

Value(s) applied	a.SO_x and NO_x emissions per MWh electricity generation from fossil fuels are as follows: <table><tr><td></td><td>SO_x (kg/MWh)</td><td>NO_x (kg/MWh)</td></tr><tr><td>Natural Gas</td><td>0.45</td><td>7.71</td></tr><tr><td>Coal</td><td>5.89</td><td>2.72</td></tr><tr><td>Oil</td><td>5.44</td><td>1.81</td></tr></table> Electricity delivered to the grid substituting fossil fuel-based electricity generation in the baseline resulting in decreased NO_x and SO_x: <table><tr><td>Vintage</td><td>Electricity delivered to the grid</td><td>Amount of SO_x Emission Reduction (tonnes)</td><td>Amount of NO_x Emission Reduction (tonnes)</td></tr><tr><td>~~01.07.2019-31.12.2019~~</td><td>151,077.15</td><td>67.98</td><td>273.45</td></tr><tr><td>~~01.01.2020-31.12.2020~~</td><td>438,706.62</td><td>197.42</td><td>794.06</td></tr><tr><td>~~01.01.2021-31.07.2021~~</td><td>220,698.49</td><td>99.31</td><td>399.46</td></tr><tr><td>TOTAL</td><td>810,482.26</td><td>370.34</td><td>1,489.57</td></tr></table> Totally 370.34 tons of SO_x and 1,489.57 tons of NO_x have been reduced due to the project activity within this monitoring period. b. Regarding dust emissions, roads were sprinkled with water and appropriate works have been completed.		SO _x (kg/MWh)	NO _x (kg/MWh)	Natural Gas	0.45	7.71	Coal	5.89	2.72	Oil	5.44	1.81	Vintage	Electricity delivered to the grid	Amount of SO _x Emission Reduction (tonnes)	Amount of NO _x Emission Reduction (tonnes)	~~01.07.2019-31.12.2019~~	151,077.15	67.98	273.45	~~01.01.2020-31.12.2020~~	438,706.62	197.42	794.06	~~01.01.2021-31.07.2021~~	220,698.49	99.31	399.46	TOTAL	810,482.26	370.34	1,489.57
	SO _x (kg/MWh)	NO _x (kg/MWh)																															
Natural Gas	0.45	7.71																															
Coal	5.89	2.72																															
Oil	5.44	1.81																															
Vintage	Electricity delivered to the grid	Amount of SO _x Emission Reduction (tonnes)	Amount of NO _x Emission Reduction (tonnes)																														
~~01.07.2019-31.12.2019~~	151,077.15	67.98	273.45																														
~~01.01.2020-31.12.2020~~	438,706.62	197.42	794.06																														
~~01.01.2021-31.07.2021~~	220,698.49	99.31	399.46																														
TOTAL	810,482.26	370.34	1,489.57																														
Measurement methods and procedures	a. EPIAS For simplicity and conservativeness it is assumed that the electricity delivered to the grid by the project activity will result in 0.45kg/MWh SO_x and 1.81kg/MWh NO_x emission reductions b. Visual inspection (such as pictures of water sprinklers used during the construction)																																

Monitoring frequency	a. Once for each monitoring period b. During first verification
QA/QC procedures	a. A power secondary meter is used for crosschecking the accuracy and both meters are calibrated if required. EPIAS records are considered as the main source for the net electricity and the values are crosschecked with the data measured by meters. Net electricity exported is crosschecked with Meter Reading Forms issued by Project owner and approved by governmental officers b. In order to reduce dust emissions during the construction phase, roads were sprinkled with water, loading and unloading of material that could generate dust were done without throwing into air, loads on the hauling vehicles were covered while in transport.
Purpose of data	To monitor compliance to Safeguarding Principle 4.3.4 (Release of pollutants)

Relevant SDG Indicator/Safeguarding Principle	Safeguarding Principle 4.3.4: Release of pollutants
Data / Parameter	Noise
Unit	N/A
Description	During the validation on-site visit, this issue has been asked to the stakeholders and has been validated by the validating DOE that there is no complaint regarding the project activity. No significant increase in the noise level. Although no negative impact is expected, noise impact of project activity has been included to the monitoring plan and monitored during the first monitoring period to ensure the validity of the appraisalment.
Source of data	Interviews with stakeholders
Value(s) applied	There were no complaints regarding noise of turbines.
Measurement methods and procedures	Interviews during the first verification or validation on-site visit with the DOE. Considering the capacity increase, first verification after the design change

Monitoring frequency	During validation or first verification Considering the capacity increase, first verification after the design change
QA/QC procedures	N/A
Purpose of data	To monitor compliance to Safeguarding Principle 4.3.4 (Release of pollutants)
Additional comment	-

Relevant SDG Indicator/Safeguarding Principle	8.8.1. Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status		
Data / Parameter	Number of trainings and availability of protection equipment.		
Unit	Number		
Description	Number of training sessions held		
Source of data	Training certificates or training attendance lists. - Personal protection equipment distribution records are available to the VVB.		
Value(s) applied	Training certificates and training attendance lists are available to the VVB.		
	No	Date	Training
	1	25/07/2019	Health and Safety
	2	28/11/2019	Health and Safety
	3	11-12/02/2020	Health and Safety
	4	12/05/2020	Health and Safety
	5	16/07/2020	Health and Safety/COVID 19 Precautions
	6	18-22/05/2020	Health and Safety
	7	17/06/2020	Health and Safety/COVID 19 Precautions
8	16/10/2020	Fire Training	
Measurement methods and procedures	Training certificates or training attendance lists		
Monitoring frequency	Once for each monitoring period		
QA/QC procedures	Training certificates or training attendance lists are provided during each monitoring period.		

Purpose of data	Monitoring the trainings to justify contribution to SDG 8.8. Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment
Additional comment	-

Relevant SDG Indicator/Safeguarding Principle	8.5.2. Unemployment rate, by sex, age and persons with disabilities
Data / Parameter	Number of employment
Unit	Number
Description	Number of people permanently working for the operation of the project
Source of data	Social Security System (SGK)
Value(s) applied	44
Measurement methods and procedures	Social Security System (SGK) records
Monitoring frequency	Once for each monitoring period
QA/QC procedures	SGK records of employees are provided during each monitoring period.
Purpose of data	SDG 8.5.By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value
Additional comment	There are 44 employees working for Project Owner at the site. So, there is a shared human resource in both projects. Since both the Project Activity and Soma - Polat Wind Farm Project,Turkey (GS 398) are under the same company it is not possible to identify which employee is working for the project activity. However, taking into account that both projects are GS registered projects with the same parameter, the benefit is linked.

~~Relevant SDG Indicator/Safeguarding Principle~~	~~Safeguarding Principle 4.3.10: High Conservation Value Areas and Critical Habitats~~
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Data / Parameter	Biodiversity
Unit	N/A
Description	Impact on bird/bat carcasses and nests
Source of data	Monitorings of Project Participant's appointed personnel
Value(s) applied	There are no bird/bat carcasses and nests Site personnel appointed by the Project Owner monitors bird/bat carcasses and nests in site. In case of any case, he reports to the management in his weekly reports.
Measurement methods and procedures	Bird/bat carcasses and nests are monitored.
Monitoring frequency	Once for each monitoring period
QA/QC procedures	N/A
Purpose of data	To monitor compliance to Safeguarding Principle 4.3.10: High Conservation Value Areas and Critical Habitats
Additional comment	-

Relevant SDG Indicator/Safeguarding Principle	Safeguarding Principle 4.3.5: Hazardous and Non-hazardous Waste
Data / Parameter	a)Waste water b)Waste oil
Unit	N/A
Description	a) Domestic wastewater during construction and operation will be collected in the leakage proof septic tank and will be periodically transferred by municipality b) The Project Participant shall ensure that the waste oil is transferred and disposed in line with the regulations
Source of data	a) Wastewater disposal invoice ⁴ or through evidence of disposal b) Through visual inspection or through evidence of disposal

⁴-Wastewater disposal invoice

~~Value(s) applied~~	~~a) During the monitoring period, wastewater was transferred two times, as 24/12/2019 and 24/07/2020.~~ ~~b)a) No waste oil has been transferred during the monitoring period.⁵~~
~~Measurement methods and procedures~~	N/A
~~Monitoring frequency~~	~~Once for each monitoring period~~
~~QA/QC procedures~~	N/A
~~Purpose of data~~	~~To monitor compliance to Safeguarding Principle 4.3.5 (Hazardous and Non-hazardous Waste)~~
~~Additional comment~~	=

Relevant SDG Indicator/Safeguarding Principle	13.3.2. Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions
Data / Parameter	ER _y
Unit	tCO ₂ /y
Description	Emission reductions by the project activity in year y (t CO₂/yr) In accordance with ACM002, baseline emissions include CO₂ from electricity generation in powerplants that are displaced due to the project activity. And baseline emissions correspond to emission reductions and are calculated as the net electricity generated by the project activity, multiplied with combined margin CO₂ emission factor for grid connected power generation in year y.
Source of data	Both measured and calculated Emission reductions will be calculated as considering the EPIAS records for the net electricity generated and the emission factor for the grid, 0.596 tCO₂/MWh, calculated using the TEIAS annual data

⁵ ~~Waste Oil Declarations to the Ministry System~~

Value(s) applied	483,046tCO ₂
Measurement methods and procedures	Detailed in the registered PDD. Please check the sections, B.6.2- B.6.4 and B.7.3 for more detailed description of the monitoring plan.
Monitoring frequency	Once for each year of operation
QA/QC procedures	Please check section B.7.3 in the registered PDD for the monitoring plan.
Purpose of data	Calculation of combined margin CO ₂ emission factor and thus the baseline emissions-to demonstrate contribution to SDG Target 13.3.: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
Additional comment	-

D.3. Comparison of monitored parameters with last monitoring period

Since the project is not community service project, this section is non-applicable.

D.4. Implementation of sampling plan

N/A

SECTION E. CALCULATION OF SDG IMPACTS

E.1. Calculation of baseline value or estimation of baseline situation of each SDG Impact

SDG 13

According to the methodology baseline emissions include only CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are calculated as follows:

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

Where:

BE _y	Baseline emissions in year y (tCO ₂ /year)
EG _{PJ,y}	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)
EF _{grid,CM}	Combined margin CO ₂ emission factor for grid connected power generation calculated using the latest version of the "Tool to calculate the emission factor for an electricity system". The combined margin is calculated ex-post and has been fixed for the first crediting period.

Two turbines, T171 and T179, are connected to Soma-Polat Wind Farm Project, Turkey meters. To obtain the net generation of the project activity, generation values of the turbines, T171 and T179, through scada system are summed up with TR-2 values. The baseline emissions are calculated as follows:

$$\text{Net electricity supplied to the grid} = \text{EG}_{PJ,y} (\text{TR-2}) + \text{SCADA Generation (T171+T179)}$$

TEMPLATE

The baseline emissions during the monitoring period as follows:

Table 6- Baseline Emissions

	TR-2 Power Meters			SCADA Generation				
Month	(A) Electricity supplied to the grid [MWh]	(B) Electricity consumption from the grid [MWh]	(C) = (A) - (B) EG (ID 8) Net electricity supplied to the grid [MWh]	T179 [MWh]	T171 [MWh]	Net electricity supplied to the grid by The Project Activity [MWh]	EF [tCO ₂ /MWh]	Baseline emission: ER = EG * EF [t CO ₂ -eq]
Jul-19	26,650.32	3.64	26,646.68			26,646.68	0.596	15,881
Aug-19	41,800.04	0.24	41,799.80			41,799.80	0.596	24,913
Sep-19	31,124.36	7.59	31,116.77			31,116.77	0.596	18,546
Oct-19	15,610.53	20.23	15,590.30			15,590.30	0.596	9,292
Nov-19	12,157.04	15.23	12,141.82			12,141.82	0.596	7,237
Dec-19	23,797.88	16.09	23,781.79			23,781.79	0.596	14,174
Jan-20	34,927.55	17.26	34,910.29			34,910.29	0.596	20,807
Feb-20	29,130.89	5.37	29,125.51			29,125.51	0.596	17,359
Mar-20	26,441.82	6.40	26,435.42	259.67	66.92	26,762.01	0.596	15,950
Apr-20	34,928.65	10.41	34,918.25	1,122.15	823.08	36,863.48	0.596	21,971
May-20	20,385.96	18.70	20,367.26	570.87	390.55	21,328.68	0.596	12,712
Jun-20	17,418.67	19.26	17,399.41	522.78	533.03	18,455.22	0.596	10,999
Jul-20	56,400.08	1.20	56,398.88	1,494.38	1,753.72	59,646.98	0.596	35,550
Aug-20	50,705.55	2.03	50,703.53	1,387.34	1,271.59	53,362.45	0.596	31,804
Sep-20	43,647.18	19.00	43,628.18	1,110.46	1,570.74	46,309.38	0.596	27,600
Oct-20	17,245.94	33.22	17,212.73	516.52	534.28	18,263.53	0.596	10,885
Nov-20	47,041.94	6.07	47,035.88	1,274.87	1,583.99	49,894.74	0.596	29,737
Dec-20	41,212.85	7.15	41,205.70	1,333.74	1,244.92	43,784.36	0.596	26,095
Jan-21	48,571.50	7.86	48,563.64	1,510.86	1,254.50	51,329.00	0.596	30,592
Feb-21	36,274.51	19.20	36,255.31	1,011.04	1,112.80	38,379.16	0.596	22,874
Mar-21	39,225.44	10.56	39,214.87	1,155.01	1,236.20	41,606.08	0.596	24,797
Apr-21	38,402.63	11.89	38,390.74	1,233.50	1,110.68	40,734.92	0.596	24,278
May-21	26,076.06	14.00	26,062.06	754.34	975.75	27,792.15	0.596	16,564
Jun-21	19,262.95	11.06	19,251.89	652.14	953.16	20,857.19	0.596	12,431
2019 Vintage (01.07.2019- 31.12.2019)	151,140.17	63.02	151,077.15	0.00	0.00	151,077.15	0.596	90,041
2020 Vintage (01.01.2020- 31.12.2020)	419,487.08	146.06	419,341.02	9,592.78	9,772.82	438,706.62	0.596	261,469
2021 Vintage (01.01.2021- 30.06.2021)	207,813.08	74.57	207,738.51	6,316.89	6,643.09	220,698.49	0.596	131,536
Total	778,440.33	283.65	778,156.7	15,909.7	16,415.91	810,482.26	0.596	483,046

The emission factor (EF_{grid,CM}) is taken as 0.596 tCO₂eq/MWh for the first crediting period as per the registered PDD.

SDG 7

The baseline value for renewable energy generation is 0. In the absence of the project activity, there wouldn't be renewable energy generation.

SDG 8

The baseline value for number of employment and training is 0. In the absence of the project activity, there wouldn't be employment of new staff.

The positions at the wind farm require skilled workers, which is achieved by adequate training. The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments.

E.2. Calculation of project value or estimation of project situation of each SDG Impact

SDG 13

In accordance with the methodology ACM0002 "Grid-connected electricity generation from renewable sources", no project emissions need to be considered. Project emissions apply only for geothermal power plants, solar thermal power plants and for some hydro power plants. Therefore,

$$PE_y = 0$$

SDG 7

The project value for renewable energy generation 810,482.26 MWh.

SDG 8

The project value for employment is 44 and 2 for the kind of trainings; 8 for the number of the trainings regarding this monitoring period.

In total, 44 employees are working for PP at the site. Since both project activities Soma I, II and III are under the same company it is not possible to identify which employee is working for Soma III.

During the monitoring period, trainings were given in three areas, "Health and Safety", "Health and Safety/COVID 19 Precautions" and "Fire Protection".

E.3. Calculation of leakage

In line with the requirements of ACM0002 "Grid-connected electricity generation from renewable sources", no leakage emissions are considered. The main emissions potentially giving rise to leakage in context of electric sector projects are emissions arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing and transport). These emission sources are neglected.

LEy = 0

E.4. Calculation of net benefits or direct calculation for each SDG Impact

SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit
13	Climate Action	483,046	0	483,046
7	Affordable and Clean Energy	0	810,482.26	810,482.26
	Decent Work and Economic Growth (Number of employment)	0	44	44
8	Decent Work and Economic Growth (Number of trainings and availability of protection equipment.)	0	2	2 ⁶

E.5. Comparison of actual SDG Impacts with estimates in approved PDD

SDG	Values estimated in ex ante calculation of approved PDD for this monitoring period	Actual values ⁷ achieved during this monitoring period
13	436,832	483,046

⁶ During the monitoring period, 8 trainings were given to the employees. However, seven of the trainings are about Health&Safety; one of them is on Fire Protection.

⁷ Whenever emission reductions are capped, both the original and capped values used for calculations must be transparently reported. Use brackets to denote original values.

7	774,723.62	810,482.26
8	2	44
8	1	2

E.5.1. Explanation of calculation of value estimated ex ante calculation of approved PDD for this monitoring period

SDG13

Estimated emission reduction in ex ante calculation of registered PDD is 239,514tCO₂, which corresponds to 436,832 tCO₂ for 730 days. And actual emission reduction achieved during this monitoring period is 483,046 tCO₂ (for 01/07/2019-30/06/2021, 730 days).

SDG 7

Estimated electricity generation in ex ante calculation of registered PDD is 429,828 MWh, which corresponds to 774,723.62 MWh for 730 days. And net electricity generation achieved during this monitoring period is 810,482.26MWh (for 01/07/2019-30/06/2021, 730 days).

SDG8

The baseline value for number of employment is 0. In the absence of the project activity, there wouldn't be employment of new staff. For the project activity, 2 employees were expected to be employed, however 44 employees have been hired.

E.6. Remarks on increase in achieved SDG Impacts from estimated value in approved PDD

SDG 7

the monitoring period is. The difference between achieved electricity generation and amount estimated ex ante %4.6 during the monitoring period. This marginal spread from the estimation is probably due from weather conditions.

Table 6- Comparison of electricity generation

Vintage	Period	Total Days	Amount achieved during this monitoring period (MWh)	Amount estimated ex ante (MWh)	Difference (MWh)	Difference (%)
2019	(01.07.2019-31.12.2019)	184	151,077.15	131,748	19,329	14.7%
2020	(01.01.2020-31.12.2020)	365	438,706.62	429,828	8,879	2.1%
2021	2021 Vintage (01.01.2021-30.06.2021)	181	220,698.49	213,148	7,551	3.5%
Total		730	810,482.26	774,723.62	35,758.65	4.6%

SDG13

The difference between achieved electricity generation and amount estimated ex ante %10.6 during the monitoring period. This marginal spread from the estimation is probably due from weather conditions.

Table 7- Comparison of emission reductions

Vintage	Period	Total Days	Amount achieved during this monitoring period (tCO2e)	Amount estimated ex ante (tCO2e)	Difference (tCO2e)	Difference (%)
2019	2019 Vintage (01.07.2019-31.12.2019)	184	90,041	78,545	11,496	14.6%
2020	2020 Vintage (01.01.2020-31.12.2020)	365	261,469	239,514	21,955	9.2%
2021	2021 Vintage (01.01.2021-30.06.2021)	181	131,536	118,773	12,763	10.7%
Total		730	483,046	436,832	46,214	10.6%

SDG 8

If the project hadn't been realized, there wouldn't be employment opportunity for employees. Therefore, achieved impact for this SDG is 44.

There are 44 employees working for Project Owner at the site. So, there is a shared human resource in both projects. Since both the Project Activity and Soma - Polat Wind Farm Project, Turkey (GS 398) are under the same company it is not possible to identify which employee is working for the project activity. However, taking into account that both projects are GS registered projects with the same parameter, the benefit is linked. -

SECTION F. SAFEGUARDS REPORTING

~~Please see section D.2.~~

<u>Relevant SDG Indicator/Safeguarding Principle</u>	Safeguarding Principle 4.3.4: Release of pollutants
<u>Data / Parameter</u>	Air Quality
<u>Unit</u>	SOx and NOx (kg/MWh)
<u>Description</u>	a. The electricity delivered to the grid by the project activity substitutes the same amount of electricity generated from the generation mix of Turkey, which is dominated by fossil fuels. SOx and NOx reduction due to the project activity will be monitored. b. In order to reduce dust emissions during the construction phase, roads were sprinkled with water, loading and unloading of material that could generate dust were done without throwing into air, loads on the hauling vehicles were covered while in transport.
<u>Source of data</u>	a.- United States Environmental Protection Agency for SOx and NOx emissions per MWh (http://www.epa.gov/cleanenergy/energy-and-you/affect/air-emissions.html) - EPIAS records for electricity production b. N/A

<u>Value(s) applied</u>	<u>a.SO_x and NO_x emissions per MWh electricity generation from fossil fuels are as follows:</u>		
		<u>SO_x (kg/MWh)</u>	<u>NO_x (kg/MWh)</u>
	<u>Natural Gas</u>	<u>0.45</u>	<u>7.71</u>
	<u>Coal</u>	<u>5.89</u>	<u>2.72</u>
	<u>Oil</u>	<u>5.44</u>	<u>1.81</u>
	<u>Electricity delivered to the grid substituting fossil fuel-based electricity generation in the baseline resulting in decreased NO_x and SO_x:</u>		
	<u>Vintage</u>	<u>Electricity delivered to the grid</u>	<u>Amount of SO_x Emission Reduction (tonnes)</u>
			<u>Amount of NO_x Emission Reduction (tonnes)</u>
	<u>01.07.2019-31.12.2019</u>	<u>151,077.15</u>	<u>67.0</u>
	<u>01.01.2020-31.12.2020</u>	<u>438,706.62</u>	<u>197.0</u>
	<u>01.01.2021-31.07.2021</u>	<u>220,698.49</u>	<u>99.0</u>
	<u>TOTAL</u>	<u>810,482.26</u>	<u>363</u>
<u>Totally 363 tons of SO_x and 1,466.00 tons of NO_x have been reduced due to the project activity within this monitoring period.</u>			
<u>b. Regarding dust emissions, roads were sprinkled with water and appropriate works have been completed.</u>			

<u>Measurement methods and procedures</u>	a. <u>EPIAS</u> <u>For simplicity and conservativeness it is assumed that the electricity delivered to the grid by the project activity will result in 0.45kg/MWh SOx and 1.81kg/MWh NOx emission reductions</u> b. <u>Visual inspection (such as pictures of water sprinklers used during the construction)</u>
<u>Monitoring frequency</u>	a. <u>Once for each monitoring period</u> b. <u>During first verification</u>
<u>QA/QC procedures</u>	a. <u>A power secondary meter is used for crosschecking the accuracy and both meters are calibrated if required. EPIAS records are considered as the main source for the net electricity and the values are crosschecked with the data measured by meters. Net electricity exported is crosschecked with Meter Reading Forms issued by Project owner and approved by governmental officers</u> b. <u>In order to reduce dust emissions during the construction phase, roads were sprinkled with water, loading and unloading of material that could generate dust were done without throwing into air, loads on the hauling vehicles were covered while in transport.</u>
<u>Purpose of data</u>	<u>To monitor compliance to Safeguarding Principle 4.3.4 (Release of pollutants)</u>

<u>Relevant SDG Indicator/Safeguarding Principle</u>	<u>Safeguarding Principle 4.3.4: Release of pollutants</u>
<u>Data / Parameter</u>	<u>Noise</u>
<u>Unit</u>	<u>N/A</u>

<u>Description</u>	<u>During the validation on site visit, this issue has been asked to the stakeholders and has been validated by the validating DOE that there is no complaint regarding the project activity.</u> <u>No significant increase in the noise level. Although no negative impact is expected, noise impact of project activity has been included to the monitoring plan and monitored during the first monitoring period to ensure the validity of the appraisalment.</u>
<u>Source of data</u>	<u>Interviews with stakeholders</u>
<u>Value(s) applied</u>	<u>The capacity addition of 12 turbines has new advanced technologies so the noise levels to be expected for these turbines are significantly lower than the existing ones. During the environmental and social impact assessment studies conducted in compliance with international finance institutions, baseline noise measurements were conducted for the 3 nearest settlements. When the sensitive structures closest to the plant were examined, no damage was detected in the current situation.</u> <u>There were no complaints regarding noise of turbines. There hasn't been any grievance or input regarding the noise.</u>
<u>Measurement methods and procedures</u>	<u>Interviews during the first verification or validation on site visit with the DOE.</u> <u>Considering the capacity increase, first verification after the design change</u>
<u>Monitoring frequency</u>	<u>During validation or first verification</u> <u>Considering the capacity increase, first verification after the design change</u>
<u>QA/QC procedures</u>	<u>N/A</u>
<u>Purpose of data</u>	<u>To monitor compliance to Safeguarding Principle 4.3.4 (Release of pollutants)</u>
<u>Additional comment</u>	<u>=</u>

<u>Relevant SDG Indicator/Safeguarding Principle</u>	<u>Safeguarding Principle 4.3.10: High Conservation Value Areas and Critical Habitats</u>
<u>Data / Parameter</u>	<u>Biodiversity</u>
<u>Unit</u>	<u>N/A</u>
<u>Description</u>	<u>Impact on bird/bat carcasses and nests</u>
<u>Source of data</u>	<u>Monitorings of Project Participant's appointed personnel</u>
<u>Value(s) applied</u>	<u>There are no bird/bat carcasses and nests</u> <u>Site personnel appointed by the Project Owner monitors bird/bat carcasses and nests in site. In case of any case, he reports to the management in his weekly reports.</u>
<u>Measurement methods and procedures</u>	<u>Bird/bat carcasses and nests are monitored.</u>
<u>Monitoring frequency</u>	<u>Once for each monitoring period</u>
<u>QA/QC procedures</u>	<u>N/A</u>
<u>Purpose of data</u>	<u>To monitor compliance to Safeguarding Principle 4.3.10: High Conservation Value Areas and Critical Habitats</u>
<u>Additional comment</u>	<u>=</u>

<u>Relevant SDG Indicator/Safeguarding Principle</u>	<u>Safeguarding Principle 4.3.5: Hazardous and Non-hazardous Waste</u>
<u>Data / Parameter</u>	<u>a)Waste water</u> <u>b)Waste oil</u>
<u>Unit</u>	<u>N/A</u>
<u>Description</u>	<u>a) Domestic wastewater during construction and operation will be collected in the leakage-proof septic tank and will be periodically transferred by municipality</u> <u>b) The Project Participant shall ensure that the waste oil is transferred and disposed in line with the regulations</u>

<u>Source of data</u>	<u>a) Wastewater disposal invoice ⁸ or through evidence of disposal</u> <u>b) Through visual inspection or through evidence of disposal</u>
<u>Value(s) applied</u>	<u>a) During the monitoring period, wastewater was transferred two times, as 24/12/2019 and 24/07/2020.</u> <u>b) No waste oil has been transferred during the monitoring period.⁹</u>
<u>Measurement methods and procedures</u>	<u>N/A</u>
<u>Monitoring frequency</u>	<u>Once for each monitoring period</u>
<u>QA/QC procedures</u>	<u>N/A</u>
<u>Purpose of data</u>	<u>To monitor compliance to Safeguarding Principle 4.3.5 (Hazardous and Non-hazardous Waste)</u>
<u>Additional comment</u>	<u>=</u>

SECTION G. STAKEHOLDER INPUTS AND LEGAL DISPUTES

G.1. List all Inputs and Grievances which have been received via the Continuous Input and Grievance Mechanism together with their respective responses/mitigations.

Table 7- Grievance Mechanism Inputs¹⁰

No.	Date	Grievance	Village	Response/Mitigation
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⁸ [Wastewater disposal invoice](#)

⁹ [Waste Oil Declarations to the Ministry System](#)

¹⁰ All records are available to the VVB.

1	1.07.2019	Request for the maintenance of the mosque	Çevircek, Tabanlar	Financial aid (The minutes dated on 16/12/2019)
2	1.07.2019	The village road reparation	Halkaavlu	The village road reparation. (The minutes dated on 25/12/2019)
3	20.07.2019	A duck was harmed by the vehicle car of the subcontractor	Hamidiye	Warnings have been done and financial aid for the loss (The minutes dated on 21/07/2019)
4	18.07.2019	Water pipeline was damaged	Kayrakaltı	Pipeline was repaired. (The minutes dated on 23/12/2019)
5	1.08.2019	Request for the security of the region was requested	Hıdırbalı, Yazören, Yukarıkaraçam	Monitor system has been established. (The minutes dated on 12/08/2019)
6	5.08.2019	Dust complaint for due to the car traffic.	Çerkez Sultaniye, Halkaavlu, Hıdırbalı, Kayrakaltı	Regular watering has been provided. (The minutes and monitoring records)
7	9.08.2019	Request for the reparation of the well and construction of the irrigation pond	Halkaavlu	The well has been repaired and irrigation pond was built. The minutes dated on (14/09/2019)
8	16.08.2019	Request for the irrigation pond	Hamidiye	The Irrigation pond was built (The minutes dated on 20/12/2019)

G.2. Report on any stakeholder mitigations that were agreed to be monitored.

All requests/complaints received from stakeholders, have been solved. Since there is no request or complaint from the stakeholders, no mitigation is monitored specially.

G.3. Provide details of any legal contest that has arisen with the project during the monitoring period

No legal contest or dispute has arisen with the project during the monitoring period.