



Gold Standard[®]
for the Global Goals

TEMPLATE

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

0 - Description of project

0 - Implementation of project

0 - Description of monitoring system applied by the project

0 - Data and parameters

0 - Calculation of SDG Impacts

0 - Safeguards Reporting

0 - Stakeholder inputs and legal disputes

KEY PROJECT INFORMATION

Key Project Information

GS ID (s) of Project (s)	7800
Title of the project (s) covered by monitoring report	Antalya Solar Power Plant
Version number of the PDD/VPA-DD (s) applicable to this monitoring report	05
Version number of the monitoring report	07
Completion date of the monitoring report	06/11/2025
Date of project design certification	31/03/2023
Date of Last Annual Report	30/12/2024
Monitoring period number	1 st Monitoring Period of the 1 st Crediting Period
Duration of this monitoring period	24/05/2022 – 23/05/2024
Project Representative	GTE Karbon Sürdürülebilir Enerji Eğitim Danışmanlık ve Ticaret A.Ş. (Project developer) Gün Güneş Enerjisi Elektrik Üretim Sanayi ve Ticaret A.Ş. (Project owner)
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 21.0
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
13 Climate Action (mandatory)	Reduction in GHGs emissions	68,699	tCO ₂ e (GS VERs)
7 Affordable and Clean Energy	Renewable energy generation	112,388.70	MWh
8 Decent Work and Economic Growth	Increased employment opportunities	9 ¹	Number of recruited staff

Table 2 – Product Vintages

		Amount Achieved		
Start Dates	End Dates	VER	Renewable energy generation	Employment Opportunities
24/05/2022	31/12/2022	21,209	36,790.21	9
01/01/2023	31/12/2023	34,871	56,144.64	9
01/01/2024	23/05/2024	12,619	19,453.89	9

¹ The number of recruited staff which is 9 is shown for the whole monitoring period.

SECTION A. DESCRIPTION OF PROJECT

A.1. General description of project

Antalya SPP was developed by Gün Güneş Enerjisi Elektrik Üretim Sanayi ve Ticaret A.Ş. The project is reducing national energy deficit and development of local industries as it allows the use of local sources for energy generation to meet the increasing demands.

The purpose of the project is to generate clean energy by harnessing the solar power and providing the energy to the Turkish national grid. By implementing the project, investors also aim to reduce dependency to the fossil fuels thereby reducing the sources of environmental pollution.

In this scope, Gün Güneş Enerjisi Elektrik Üretim Sanayi ve Ticaret A.Ş. installed PV panels having a module area of 182,153 m² in Akseki District of Antalya with the purpose of contributing to the national economy the meeting the increased electricity demand². Total output of the plant is limited at 23.40 MWe as per the capacity allowed in generation license with the help of software installation.

The project activity generates greenhouse gas (GHG) emission reductions by avoiding CO₂ emissions from electricity generation by fossil fuel power plants connected to Turkish National Power Grid. The electricity generation value is 112,388.70 MWh for whole monitoring period. The emission reduction is 68,699 tCO₂e for whole monitoring period.

Main goals of the Antalya SPP include:

- Utilization of the solar potential of Turkey to meet increasing electricity demand and maintain energy security. In total, the solar energy capacity of Turkey is lower than 7% of the total installed capacity.
- Reduction of GHG emissions through increasing share of renewable resources.
- Contribution to economic development by creating direct and indirect job opportunities during construction and operation phases.

² Antalya SPP Yield Report

- Reduction of import dependency on fossil fuel weighed electricity sector and diversify generation mix through use of local resources.
- Contribution to sustainable development through supporting local community and local economy. In terms of local benefits, the project mainly contributes to the reduction of local air pollutants and local employment.

Table 3. Milestones for Antalya SPP

Milestone	Date
Preliminary License	03/11/2016
EIA Stakeholder Meeting	02/2017
Environmental Impact Assessment (Final)	10/2017
Environmental Impact Assessment Approval	29/10/2017
Preliminary Project Approval	31/12/2018
Connection Agreement	21/04/2020
EPC Contract for Phase I Works *	12/10/2020
Construction Start Date	12/10/2020
PV Module Agreement	16/12/2020
First Index Protocol	21/12/2020
Provisional Acceptance No. 1 **	31/12/2020
Main Meter Change Protocol	05/04/2021
EPC Contract Phase II	13/04/2021
System Usage Agreement	25/08/2021
Revised Connection Agreement	27/08/2021
Provisional Acceptance No. 2	03/09/2021
First Submission to GS	24/09/2021
Provisional Acceptance No. 3	15/10/2021
Provisional Acceptance No. 4	26/11/2021
Provisional Acceptance No. 5	24/12/2021
First Crediting Period	24/05/2022 – 23/05/2027

*Project Start Date

**Project Commissioning date

A.2. Location of project

A.2.1 Host Country

Türkiye

A.2.2 Region/State/Province etc.

Antalya

A.2.3 City/Town/Community etc.

Akseki district

A.2.4 Physical/Geographical location

The proposed project is located in Büyükalan Neighbourhood in Akseki district of Antalya province in Turkey. The total area of the project is 370,686.94 m².³

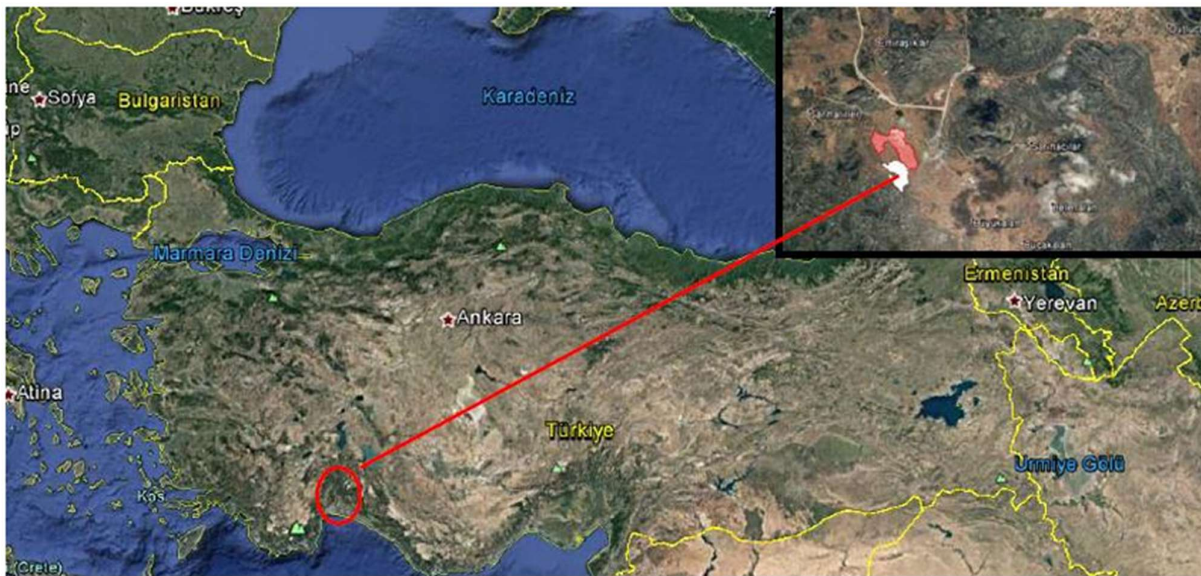


Figure 1.

³ Antalya SPP EIA, page xi

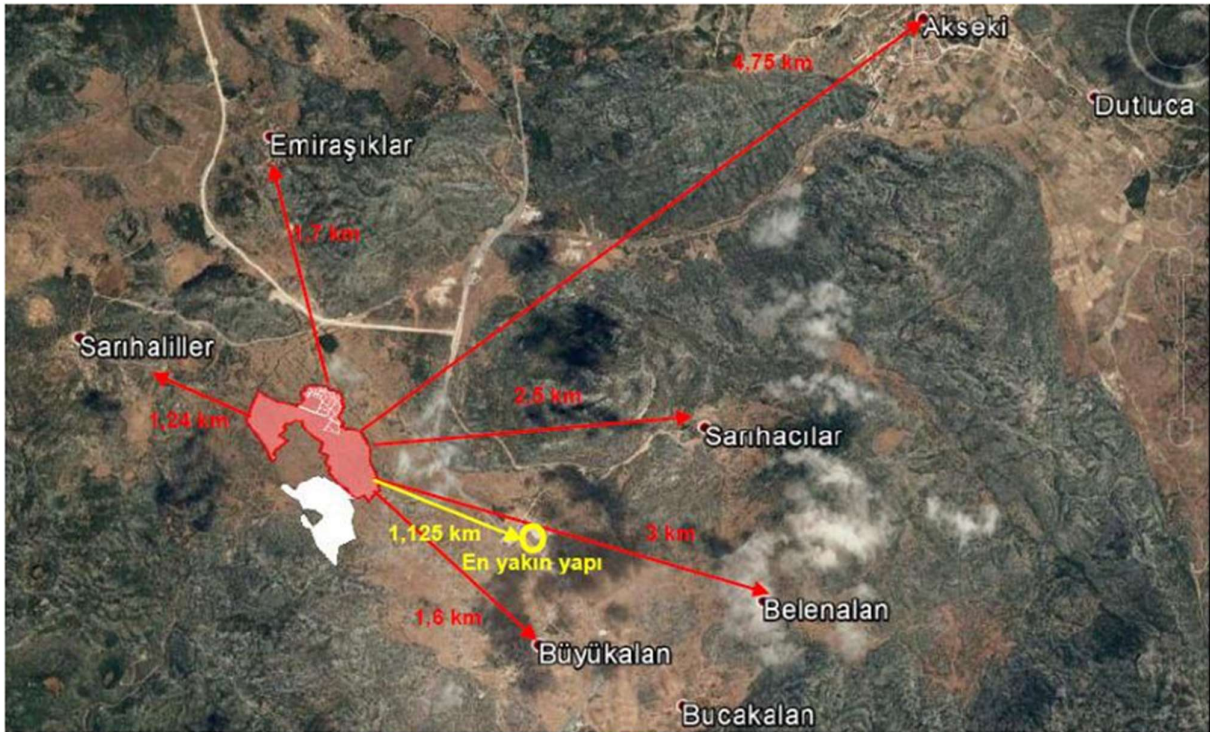


Figure 2. Closest settlements to the project area

	E	N		E	N
K1	387352,43	4098160,676	K49	388237,885	4097513,637
K2	387469,573	4098076,073	K50	388261,163	4097444,053
K3	387490,349	4098068,814	K51	388263,416	4097385,481
K4	387533,151	4098059,552	K52	388210,484	4097347,205
K5	387566,066	4098054,546	K53	388195,24	4097318,347
K6	387642,158	4098029,516	K54	388178,506	4097290,828
K7	387645,35	4098035,47	K55	388168,63	4097308,721
K8	387658,325	4098056,701	K56	388145,54	4097354,942
K9	387667,531	4098049,014	K57	388090,702	4097325,664
K10	387696,15	4098092,337	K58	388028,497	4097378,693
K11	387677,977	4098115,398	K59	388023,888	4097401,424
K12	387680,906	4098153,453	K60	388007,625	4097412,349
K13	387706,076	4098147,475	K61	387963,323	4097437,829
K14	387706,505	4098176,024	K62	387936,213	4097456,162
K15	387760,264	4098188,888	K63	387918,91	4097474,324
K16	387807,465	4098183,99	K64	387898,609	4097495,266
K17	387800,318	4098190,818	K65	387884,514	4097517,937
K18	387867,743	4098177,334	K66	387875,118	4097536,52
K19	387893,8	4098152,633	K67	387886,114	4097540,858
K20	387906,505	4098158,651	K68	387889,402	4097559,26
K21	387913,882	4098148,595	K69	387852,957	4097597,765
K22	387929,676	4098153,053	K70	387874,778	4097657,151
K23	387951,947	4098129,922	K71	387861,763	4097668,597
K24	387965,362	4098144,996	K72	387830,886	4097676,903
K25	388006,445	4098081,182	K73	387811,903	4097689,458
K26	387993,802	4098073,092	K74	387830,296	4097721,066
K27	387985,364	4098067,727	K75	387836,293	4097750,174
K28	387990,729	4098059,288	K76	387828,806	4097758,861
K29	387995,96	4098041,537	K77	387729,816	4097832,531
K30	387991,101	4098035,87	K78	387676,357	4097891,408
K31	388004,606	4098020,226	K79	387680,516	4097920,346
K32	387997,779	4098005,542	K80	387665,712	4097923,775
K33	387995,34	4097993,027	K81	387636,004	4097928,923
K34	387971,679	4097969,616	K82	387586,154	4097906,561
K35	387952,057	4097946,426	K83	387559,264	4097911,689
K36	387964,632	4097936,04	K84	387539,122	4097881,022
K37	388003,567	4097902,923	K85	387556,335	4097858,781
K38	387982,809	4097881,77	K86	387504,086	4097811,18
K39	387979,069	4097876,83	K87	387566,271	4097772,465
K40	388012,61	4097855,304	K88	387493,81	4097714,148
K41	388044,399	4097853,051	K89	387482,475	4097721,206
K42	388116,236	4097838,283	K90	387450,398	4097678,933
K43	388141,267	4097790,475	K91	387466,351	4097662,829
K44	388172,305	4097731,403	K92	387476,457	4097651,434
K45	388194,332	4097712,379	K93	387444,253	4097625,818
K46	388197,586	4097656,811	K94	387398,499	4097726,154
K47	388192,58	4097615,261	K95	387258,515	4097934,58
K48	388206,847	4097577,214			

Figure 3. Corner Coordinates of the Plant⁴

⁴ Generation License

A.3. Reference of applied methodology

The United Nations approved consolidated baseline methodology applicable to this project is ACM0002 "Large-scale Consolidated Methodology: Grid-connected electricity generation from renewable sources" Version -21⁵.

ACM0002 refers to the following tools:

- Tool 1: "Tool for the demonstration and assessment of additionality", Version 7⁶ and,
- Tool 7: "Tool to calculate the emission factor for an electricity system", Version 7⁷.

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

- Antalya SPP is a large-scale solar power type, greenfield, grid connected renewable electricity generation project.
- The project does not involve switching from fossil fuel use to renewable energy at the site of the project activity.
- The geographic and system boundaries for the relevant electricity grid can be clearly identified and information on the characteristics of the grid is available.

A.4. Crediting period of project

Start date of crediting period:

First crediting period is between 24/05/2022 and 23/05/2027.

Total length of crediting period:

⁵ <https://cdm.unfccc.int/UserManagement/FileStorage/ZPFJL01OU2RYC6N3HASIXV7K84QBG9>

⁶ <https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-01-v7.0.0.pdf>

⁷ <https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-07-v7.0.0.pdf>

Crediting period is valid for 5 years and renewed twice. Thus, total length of crediting period will be 15 years.

SECTION B. IMPLEMENTATION OF PROJECT

B.1. Description of implemented project

Project activity involves construction of a 23.40 MWe solar power plant for electricity generation. Project is categorized as “Renewable Energy Supply” according to GS definition whereas it is included in the sectoral scope 1 “Energy Industry – Renewable Sources” according to the UNFCCC definition. Project type is retroactive as per the GS rules. Project has been completely implemented and the detailed table for the milestones achieved has been provided in section A.1.

Project is not registered and also does not benefit from other certification schemes or renewable energy labelling standards.

HT72-156M-BF-400 Bifacial with Transparent Backsheet type PV modules are used in the project. Total number of panels that are installed in the scope of this project is 82,484. Technical properties of the modules are represented below:

• Electrical Characteristics

Module	HT72-156M / HT72-156M(V)				
Maximum Power at STC(Pmax)	380W	385W	390W	395W	400W
Open-Circuit Voltage(Voc)	48.3V	48.4V	48.5V	48.6V	48.7V
Short-Circuit Current(Isc)	10.34A	10.47A	10.55A	10.67A	10.79A
Optimum Operating Voltage (Vmp)	39.9V	40.1V	40.3V	40.5V	40.7V
Optimum Operating Current(Imp)	9.53A	9.61A	9.68A	9.76A	9.84A
Module Efficiency	18.9%	19.1%	19.3%	19.6%	19.9%
Power Tolerance	0 ~ +5W				
Maximum System Voltage	1000V / 1500V DC(UL/IEC)				
Maximum Series Fuse Rating	15/20A				
Operating Temperature	-40 °C to + 85 °C				

• Mechanical Characteristics

Solar Cells	Monocrystalline 158.75 × 158.75mm
No. of Cells	72 (6 × 12)
Dimensions	2008mm×1002mm×35mm
Weight	21.8kg
Front Glass	High transmission tempered glass
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm ² (UL/IEC) Length: 1200mm
Connectors	MC4 Compatible
Packaging Configuration	30pcs / box, 715pcs / 40'HQ Container

The project is connected to the National Grid by 154 kV transmission line via Akseki Substation⁸. In addition, plant load factor is the ratio between the actual energy generated by the plant to the maximum possible energy that can be generated with the plant working at its rated power.

$$27.33 \% = 100 \times \frac{56,039.34 \text{ MWh / year}}{23.40 \text{ MWe}} \times \frac{1}{365 \times 24 \text{ hours}}$$

B.1.1 Forward Action Requests

FAR#1: SFR to be conducted during the first verification.

Response: An LSC Meeting Meeting has been conducted on December 10, 2024. The necessary procedure has been applied. An invitation mail has been sent to the required places. During the LSC Meeting, stakeholders have been informed about the Antalya SPP Project and their comments have been asked. Therefore, stakeholders have filled out the project evaluation form.



⁸ Antalya SPP EIA, page xi

B.2. Post-Design Certification changes

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

N/A

B.2.2. Corrections

N/A

B.2.3. Changes to start date of crediting period

The start date of the first crediting period is 24/05/2022 and the end date is 23/05/2027. The registered crediting period of the project has been postponed 1 year 4 months and 24 days (total 509 days) (Between 1-2 year, as per Table 1 – Requirements for change from design certified crediting period (CP) start date) than that indicated in the design certified PDD, according to Design Change Requirements, V2.0.

There had been no impacts on the baseline scenario of the project. Also, substantive progress has been made by the project developer to start the project activity, which are represented in Table 3 of this MR and the table below. During this time, Gold Standard was also contacted many times to assure continuance of the project.

Milestone	Date
Preliminary License	03/11/2016
EIA Stakeholder Meeting	02/2017
Environmental Impact Assessment (Final)	10/2017
Environmental Impact Assessment Approval	29/10/2017
Preliminary Project Approval	31/12/2018
EPC Contract for Phase I Works *	12/10/2020
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Provisional Acceptance No. 3	15/10/2021
Provisional Acceptance No. 4	26/11/2021
Provisional Acceptance No. 5	24/12/2021
First Crediting Period	24/05/2022 – 23/05/2027

*Project Start Date

**Project Commissioning date

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

N/A

B.2.5. Changes to project design of approved project

N/A

SECTION C. DESCRIPTION OF MONITORING SYSTEM APPLIED BY THE PROJECT

Monitoring is a key procedure to verify the real and measurable emission reductions from the proposed project. To guarantee the proposed project's real, measurable, and long-term GHG emission reductions, the monitoring plan is established.

Net electricity generation is measured and recorded via meters sealed by Akdeniz CK for billing purposes therefore no new additional protocol is needed for monitoring emission reduction. Power Plant Manager is responsible for the electricity generated, gathering all relevant data, and keeping the records.

Generation data collected during crediting period is submitted to GTE who is responsible for calculating the emission reduction subject to verification. Generation data are used to prepare monitoring reports which was used to determine the vintage from the project activity. These reports are submitted to the duly authorized and appointed Validation Verification Body 'VVB' before each verification period.

Plant Manager: Responsible for running the plant and compliance with VER monitoring plan.

Accounting Manager: Responsible for keeping data about generation and consumption.

GTE: Responsible for emission reduction calculations, preparing monitoring report and periodical verification process.

Installation of meter and data monitoring are carried out according to the regulations by Akdeniz CK Elektrik. Two metering devices (one of them used as spare) are used for monitoring the electricity generated by the power plant. Readings are done using main metering devices and spare metering device is used for comparison only. Data from metering devices are recorded by Akdeniz CK Elektrik monthly (through remote reading). In addition to the two metering devices, generation of the plant can be cross checked from EPIAS web site (<https://www.epias.com.tr/>) which is accessible using a password provided to electricity generation companies. EPIAS records are used as a main source for emission reduction calculations.

Main meter with serial number 42595584 was replaced by new meter with serial number 80269583 on 05/04/2021. However, spare meter was not replaced since there was not bi-directional meter in stock at that moment. Properties of metering devices are given in the table below.

Table 4 – Properties of metering devices

	Removed Meters		Placed Meters	
	Main Meter	Spare Meter	Main Meter	Spare Meter
Serial number	42595584	-	80269583	42595585
Brand	Landis	-	MAKEL	Landis
Type	ZMG405	-	C520.AMT.2 556	ZMG405CR4
Accuracy Class	0.05-5(10)	-	0.5	0.5-5(10)
First Index Protocol	-	-	05/04/2021	21/12/2020
Test reports	-	-	09/02/2022	09/02/2022

All data is kept for at least two years after the crediting period for QA/QC purposes.

The calibration and maintenance of the meters is carried out in line with the by law on Metering and Metering Devices⁹.

⁹ <https://www.mevzuat.gov.tr/anasayfa/MevzuatFihristDetayIframe?MevzuatTur=7&MevzuatNo=6381&MevzuatTertip=5>

SECTION D. DATA AND PARAMETERS

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

SDG 13

Data/parameter	EF _{CM, y}
Unit	tCO ₂ /MWh
Description	Combined margin emission factor
Source of data	Tool 07 Tool to calculate the emission factor for an electricity system
Value(s) applied	0.6488
Choice of data or measurement methods and procedures	Emission factor for the baseline scenario which was calculated by the Ministry of Energy and Natural Resources has been used. ⁹
Purpose of data	To calculate baseline emission
Additional comment	-

D.2 Data and parameters monitored

SDG 7

Data/parameter	EG _{facility, y}
Unit	GWh
Description	Net electricity generated and delivered to the grid by the proposed project in year

⁹

https://enerji.gov.tr/Media/Dizin/EVCED/tr/%C3%87evreVe%C4%B0klim/%C4%B0klimDe%C4%9Fi%C5%9Fikli%C4%9Fi/TUESEmisyonFktr/Belgeler/2020_Sebeke_EF.pdf

Source of data	Metering devices used in power plants & monthly generation records. EPIAS records were the main source of data and OSF forms were used for cross-check.										
Value(s) applied	Annual generation forming the basis for emission reduction calculation is 56,194.37 MWh 112,388.70 MWh for whole monitoring period (24/05/2022 – 23/05/2024) <table border="1"> <tr> <td>2022 (24/05/2022 – 31/12/2022)</td><td>36,790.21</td></tr> <tr> <td>2023 (01/01/2023 – 31/12/2023)</td><td>56,144.64</td></tr> <tr> <td>2024 (01/01/2024 – 23/05/2024)</td><td>19,453.85</td></tr> <tr> <td>Total for this MP</td><td>112,388.70</td></tr> <tr> <td>Annual for this MP</td><td>56,194.35</td></tr> </table>	2022 (24/05/2022 – 31/12/2022)	36,790.21	2023 (01/01/2023 – 31/12/2023)	56,144.64	2024 (01/01/2024 – 23/05/2024)	19,453.85	Total for this MP	112,388.70	Annual for this MP	56,194.35
2022 (24/05/2022 – 31/12/2022)	36,790.21										
2023 (01/01/2023 – 31/12/2023)	56,144.64										
2024 (01/01/2024 – 23/05/2024)	19,453.85										
Total for this MP	112,388.70										
Annual for this MP	56,194.35										
Measurement methods and procedures	Generation data is recorded by two metering devices continuously. These records provide the data for the monthly invoicing Akdeniz Elektrik. Generation is recorded via remote reading system. Main meter with serial number 42595584 was replaced by new meter with serial number 80269583 on 05/04/2021. However, spare meter was not replaced since there was not bi-directional meter in stock at that moment. The quantity of electricity supplied by the project plant/unit to the grid (ISVM) and the quantity of electricity delivered to the project plant/unit from the grid (EUCM) are measured. Net generation is calculated via subtracting energy delivered by the project activity to the grid for internal consumption from electricity fed to the grid. Properties of the meters are given in the table below.										

	<table><tr><td>Removed Main Meter</td><td>Removed Spare Meter</td></tr><tr><td>42595584</td><td>-</td></tr><tr><td>Landis</td><td>-</td></tr><tr><td>ZMG405</td><td>-</td></tr><tr><td>0.05-5(10)</td><td>-</td></tr></table>		Removed Main Meter	Removed Spare Meter	42595584	-	Landis	-	ZMG405	-	0.05-5(10)	-											
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Class	0.5	0.5-5(10)																					
First Index Date	05/04/2021	21/12/2020																					
Test Date	09/02/2022	09/02/2022																					
Monitoring frequency		Continuous measuring, monthly recording																					
QA/QC procedures		Two calibrated meters backup each other. Calibration frequency is 10 years. Maintenance and calibration of the metering devices are made by Akdeniz Elektrik Dağıtım A.Ş. If there is a significant difference between the readings of two devices, maintenance and tests of the metering devices and the associated equipment are done before waiting for the periodical maintenance. The meters should comply with EPDK regulations which define the accuracy class of the meters as 0.2 or 0.5 depending on the capacity of the circuit as given in document in link. Generation of the plant is cross checked from Akdeniz Elektrik Dağıtım A.Ş. which is accessible using a password provided to electricity generation companies. ISVM (Electricity fed to the grid) and UECM (Electricity consumed from the grid) data given in Akdeniz Elektrik Dağıtım A.Ş. records are used for emission reduction calculations.																					
Purpose of data		Emission reduction calculations																					
Additional comment		-																					

SDG 8

Data/parameter	Quantitative employment and income generation
Unit	Number of locally recruited staff and their social security records
Description	Ensuring that the staff receives their full salaries on time.
Source of data	Social Security Records to be provided by the Project Owner
Value(s) applied	The project created job opportunity for 9 people for the monitoring period 2022 – 9 2023 - 9 2024 - 9 ¹⁰
Measurement methods and procedures	The project owner is committed to ensuring that the staff receives their full salaries on time. Number of employees and the evidence for their wages being paid checked from the social security records, which was provided by the Project Owner.
Monitoring frequency	Annually
QA/QC procedures	-
Purpose of data	To monitor the contribution to SDG 8 and Principle 3.6.1.
Additional comment	-

SDG 13

Data/parameter	Emissions Reductions in tCO₂e
Unit	tCO ₂ e
Description	Reduction of CO ₂ e emissions due to implementation of project activity
Source of data	Electricity generated by Antalya Solar Power Plant and calculated combined margin (CM) emission factor is used as

¹⁰ The number of recruited staff which is 9 is shown for the whole monitoring period.

	reference in calculation of the emission reduction. EPIAS records are the main source of electricity generation data and OSF forms were used for cross-check.										
Value(s) applied	Annual emission reduction is 34,919 tonnes of CO₂e. The applied OM & BM for the project are: Operating Margin: 0.7424 tCO₂e/MWh Build Margin: 0.3680 tCO₂e/MWh. Therefore, the applied Combined margin for the project is 0.6488 tCO₂e/MWh. 68,699 tonnes of CO₂e for whole monitoring period. <table border="1"> <tr> <td>24/05/2022 31/12/2022</td><td>21,209</td></tr> <tr> <td>01/01/2023 – 31/12/2023</td><td>34,871</td></tr> <tr> <td>01/01/2024 – 23/05/2024</td><td>12,619</td></tr> <tr> <td>Total for this MP</td><td>68,699</td></tr> <tr> <td>Annual for this MP</td><td>34,349</td></tr> </table>	24/05/2022 31/12/2022	21,209	01/01/2023 – 31/12/2023	34,871	01/01/2024 – 23/05/2024	12,619	Total for this MP	68,699	Annual for this MP	34,349
24/05/2022 31/12/2022	21,209										
01/01/2023 – 31/12/2023	34,871										
01/01/2024 – 23/05/2024	12,619										
Total for this MP	68,699										
Annual for this MP	34,349										
Measurement methods and procedures	The net electricity supplied by the Project is continuously measured and recorded by EPIAS; and is kept by the Project Proponent. In addition to the EPIAS meters which is used for billing purposes, records taken by meters using at project site were used for comparison.										
Monitoring frequency	Once every monitoring period										
QA/QC procedures	-										
Purpose of data	To monitor the contribution to SDG 13 (Take urgent action to combat climate change and its impacts)										
Additional comment	-										

Data/parameter	Quality of Employment
Unit	Number of personnel certified/trained during operation phase
Description	Contribution to quality of employment by ensuring that the staff is trained and certified for the required positions
Source of data	Training Records (including H&S) & Other Certificates required by certain professions, if necessary

Value(s) applied	HSE Training (4 people have been trained on 20-21-22 March 2023) HSE Training (8 people have been trained on 7 – 8 March 2024) EKAT Training – Working ability under high voltage (7 people have been trained)
Measurement methods and procedures	All employees attended training on first aid and health & safety. For positions that require specific skills (such as high voltage equipment) staff was either trained, or certified staff was recruited.
Monitoring frequency	Annually
QA/QC procedures	The training programmes help increase the efficiency of the workforce and provides employees skilled at their job. This not only helps the company but to self-improvement of individual employees.
Purpose of data	To monitor the contribution to SDG 8 and Principle 3.6.1.
Additional comment	-

Data/parameter	Principle 9.4 Release of Pollutants - Water Quality and Quantity
Unit	-

Description	Appropriate disposal of wastewater as required by the Law on Water Pollution Control ¹¹
Source of data	Assessing collection methods during site visits and checking wastewater disposal records.
Value(s) applied	No wastewater has been generated.
Measurement methods and procedures	Domestic wastewater generated at the project site is handled according to the national regulations on handling domestic waste
Monitoring frequency	Annually
QA/QC procedures	Operation is in line with national regulations
Purpose of data	To monitor the contribution to Principle 9.4.
Additional comment	-

Data/parameter	Principle 9.11 Endangered Species - Biodiversity
Unit	-
Description	Ensuring that the project creates no disturbance to the regional habitat
Source of data	Assessments during site visits and ecosystem report
Value(s) applied	No disturbance to the regional habitat Based on the information taken from the Ecosystem part of EIA Report, it states that the closest forestry areas to the plant is 400 m away from the plant and it is classified as degraded forest area.
Measurement methods and procedures	Ecosystem part of EIA Report
Monitoring frequency	Annually
QA/QC procedures	-
Purpose of data	To contribute to Principle 9.11.

¹¹ Law on Water Pollution Control. Official Gazette Date & No.: 31/12/2004 & 25687.

<https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=7221&MevzuatTur=7&MevzuatTertip=5>

Additional comment	-
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Data/parameter	Principle 9.5 Hazardous and Non-hazardous Waste - Waste Oil
Unit	-
Description	Proper management of waste oil
Source of data	Assessing disposal methods during site visits and checking waste oil disposal records.
Value(s) applied	No waste oil during this monitoring time
Measurement methods and procedures	Project owner committed to proper collection of waste oil from equipment in line with regulation # 26952 on control of waste oils. There is no waste oil generated so far.
Monitoring frequency	Annually
QA/QC procedures	-
Purpose of data	To contribute to the Principle 9.5.
Additional comment	-

Data/parameter	Principle 4.2.2 Climate and Energy – Soil Condition
Unit	-
Description	Control of erosion
Source of data	Assessing soil condition during site visits
Value(s) applied	N/A
Measurement methods and procedures	Soils resistance to erosion has improved. Soils permeability, water pressure formation and seepage were monitored.
Monitoring frequency	Annually
QA/QC procedures	-
Purpose of data	To contribute to the Principle 4.2.2.
Additional comment	-

Data/parameter	Principle 4.3.4 Release of pollutants – Soil Condition
Unit	-
Description	Proper management of solid wastes
Source of data	Assessing disposal methods during site visits
Value(s) applied	N/A
Measurement methods and procedures	Domestic solid wastes are collected and handled according to the Solid Waste Control Regulation.
Monitoring frequency	Once every monitoring period
QA/QC procedures	-
Purpose of data	To contribute to the Principle 4.3.4.
Additional comment	-

Data/parameter	Principle 3.4.3 Cultural Heritage, Indigenous Peoples, Displacement and Resettlement - Expropriation of the project site
Unit	-
Description	Land acquisition
Source of data	Permit documents
Value(s) applied	No expropriation during baseline situation
Measurement methods and procedures	Some parcels of the project area belong to Treasury while others are the lands owned by individuals. Permission documents of the project site to be used for purposes other than agriculture. Land acquisition was done according to the Turkish Expropriation Laws and Electricity Market Law (4628).
Monitoring frequency	Once in the first verification
QA/QC procedures	-
Purpose of data	To contribute to the Principle 3.4.3
Additional comment	-

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

This is not a community service project; thus this section is N/A.

Data/Parameter	Value obtained in this monitoring period	Value obtained last monitoring period

D.4. Implementation of sampling plan

No sampling plan is necessary.

SECTION E. CALCULATION OF SDG IMPACTS

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

Ex-ante emission reductions (ER_y) are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y$$

Where:

ER_y = Emission reductions in year y (tCO₂)

BE_y = Baseline emissions in year y (tCO₂)

PE_y = Project Emissions in year y (tCO₂)

LE_y = Leakage emissions in year y (tCO₂)

Baseline emission is calculated according to the formula:

$$BE_y = EG_y \times EF_y$$

Where:

EG_y = Net electricity delivered to the grid by the project activity in year y excluding transmission losses of the grid

EF_y = Emission factor calculated according to selected methodology (Combined margin value was calculated by using nationally accepted emission factors. Republic of Turkey Ministry of Energy and Natural Resources released them on 20/09/2022)¹²

Combined margin is calculated as follows:

$$CM = (OM \times 0.75) + (BM \times 0.25)$$

$$(0.7424 \times 0.75) + (0.3680 \times 0.25) = 0.6488 \text{ tCO}_2/\text{MWh}$$

$$BE_{2022} = 36,790.21 \text{ MWh} \times 0.6488 \text{ tCO}_2\text{e/MWh} = 21,209 \text{ tCO}_2\text{e (capped at 15\%, please see ER Sheet)}$$

$$BE_{2023} = 56,144.64 \text{ MWh} \times 0.6488 \text{ tCO}_2\text{e/MWh} = 34,871 \text{ tCO}_2\text{e (capped at 15\%, please see ER Sheet)}$$

$$BE_{2024} = 19,453.89 \text{ MWh} \times 0.6488 \text{ tCO}_2\text{e/MWh} = 12,619 \text{ tCO}_2\text{e}$$

¹²https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%B0klim/%C4%B0klimDe%C4%9Fi%C5%9Fikli%C4%9Fi/TUESEmi syonFktr/Belgeler/2020_Sebeke_EF.pdf

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

Since the project is classified as a renewable energy project, parameter PE_y is neglected.

Therefore:

$$PE_y = 0$$

E.3. Calculation of leakage

The energy generating equipment is not transferred from or to another activity.

Therefore, leakage is also considered as "0".

$$LE_y = 0$$

As a result, Total Emission Reduction is:

$$ER_y = BE_y$$

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

SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit
13	CO ₂ emission reduction	68,699 tCO ₂	0 tCO ₂	68,699 tCO ₂
7	Production of clean energy	0 MWh	112,388.70 MWh	112,388.70 MWh
8	Creating employment opportunities	No employment	9 employments	9 employments

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 ¹² achieved during this monitoring period
13	60,729 tCO ₂	68,699 tCO ₂
7	93,602.05 MWh	112,388.70 MWh
8	10 employments	9 employments

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

Average yearly emission reductions have been calculated by proportioning expected annual generation to the days included by this monitoring period. Average yearly emission reduction has been multiplied by monitoring period (in days) to calculate estimated emission reduction.

(Annual generation x emission factor) x (days included / 365)

112,388.70 MWh x 0.6488 tCO₂/MWh = 68,699 tCO₂

(68,699 tCO₂ / 731) x 365 = 34,349 tCO₂/year

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

The project has been expected to generate 46,737 MWh/year and 93,602.05 MWh for the whole monitoring period (details of calculation is present in verification calculation excel sheet). For actual values, the project generated 56,194.35 MWh of clean energy per annum and 112,388.70 MWh for the whole monitoring period. In the registered PDD, project expected to create at least 10 employments while employments achieved during this monitoring period were recorded as 9.

¹² Whenever emission reductions are capped, both the original and capped values used for calculations must be transparently reported. Use brackets to denote original values.

% difference in EG: $[(112,388.70 \text{ MWh} - 93,602.05 \text{ MWh}) / 93,602.05 \text{ MWh}] \times 100 = 20.1\%$ which means the project generated 20.1% more electricity than expected.

% difference in ER: $[(68,699 \text{ tCO}_2 - 60,729.01 \text{ tCO}_2) / 60,729.01 \text{ tCO}_2] \times 100 = 13.1\%$ which means the project decreased CO₂ by 13.1 % more than expected.

Solar power is believed to be very consistent in the long term but might show little deviations in the monthly figures. Seasonal effects directly affect generated electricity. Since solar is always shaped by atmospheric events that have a highly variable data set, the actual electricity generation exceeds the estimated electricity generation.

GS VERs have been capped at 15% as per the upper boundary of sensitivity analysis applied in the Validation and IRR and para 2.1.4 of Rule Clarification - Treatment of Projects Overachieving Emission Reductions Ver 2.0)¹³. ER Sheet has been revised. As per the comment coming from Gold Standard, remaining emission reduction values will be claimed and issued in the next verification. The ER Sheet compares the project's ex-post electricity generation and emission reductions for 2022–2024 with the ex-ante estimates used during Validation and demonstrates that the project has over-performed by approximately 20.1% in both electricity generation and emission reductions. In accordance with Para 2.1.4 of the Gold Standard Rule Clarification "Treatment of Projects Overachieving Emission Reductions" (v2.0) and the upper boundary of the sensitivity analysis applied in the IRR assessment (+15%), annual ERs have been capped at 15% above the ex-ante values. As a result, the actual ER values have been replaced with capped ER values of 21,209 tCO₂ for 2022, 34,871 tCO₂ for 2023, and 12,619 tCO₂ for 2024, leading to a total eligible ER of 68,699 tCO₂ for this monitoring period. The remaining ERs beyond the 15% threshold will be claimed in the next verification in line with Gold Standard requirements.

¹³ https://globalgoals.goldstandard.org/standards/RC-2025-v.1.1_Assessment-approach-for-reporting-higher-ex-post-emission-reductions.pdf

SECTION F. SAFEGUARDS REPORTING

Principles	Mitigation Measures added to the Monitoring Plan
Principle 4.3.4: Release of pollutants Water Quality and Quantity	Collection methods and waste disposal records were checked during site visit. Appropriate disposal of wastewater is done as required by the Law on Water Pollution Control. Parameter is checked annually. No mitigation measure is needed.
Principle 4.3.11: Endangered Species Biodiversity	No disturbance to the regional habitat by the project is ensured. Assessments during site visits has been done and ecosystem reports has been checked. Parameter is checked annually. No mitigation measure is needed.
Principle 4.3.5: Hazardous and Non-hazardous Waste Other Pollutants (Waste oil)	Waste oil from equipment is collected properly in line with the relevant regulation and disposed via accredited abatement companies. Waste oil is disposed in line with regulation # 26952 on control of waste oils No mitigation measure is needed. (Regulation: Atık Yağların Kontrolü Yönetmeliği, numbered 26952, dated 30.07.2008)
Principle 4.2.2 Climate and Energy Soil Condition	Erosion control is set by intensifying local characteristics. Soils resistance to erosion is improved. Soils permeability, water pressure formation and seepage are monitored. Site observations are done during site visit. This parameter is checked annually. No mitigation measure is needed.
Principle 4.3.4 Release of pollutants Soil Condition	Domestic solid wastes are collected and handled according to the Solid Waste Control Regulation. They are collected

	and transferred to the municipality's solid waste storage facility, periodically. Domestic wastewater generated is collected in a cesspool and then conveyed to the closest wastewater treatment system. Appropriate disposal of solids waste as required by the Law on Solid Waste Management ¹⁶ . No mitigation measure is needed.
Principle 3.4.3 Cultural Heritage, Indigenous Peoples, Displacement and Resettlement Expropriation of the project site	Some parcels of the project area belong to Treasury while others are the lands owned by individuals. ¹⁷ Permission documents of the project site to be used for purposes other than agriculture. Land acquisition has been done according to the Turkish Expropriation Laws and Electricity Market Law (4628). This parameter is checked for once in the first verification. No mitigation measure is needed.

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.

Two comments were written in the logbook during this monitoring period. One comment is about the stakeholder's expectation from the Project Owner to feed various plants near the site. The other comment is about the road toward the site.

The roads are quite tidy and Project Owner respects the stakeholders' opinions to create better environment near the site.

Method	Include all details of Chosen Method (s) so that they may be understood and, where relevant, used by readers.
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Continuous Input / Grievance Expression Process Book (mandatory)	A grievance notebook is placed at Mukhtar's in the Village. They can fill in whenever there is a complaint or a request which is regularly checked by the project manager. Stakeholders are also welcomed to directly contact the power plant staff in case they have an input. Gün Güneş Enerjisi Elektrik Üretim Sanayi ve Ticaret A.Ş Tel: +90 212 267 42 06 E-mail: alpay.beyla@boydakenerji.com
GS Contact (mandatory)	help@goldstandard.org
Other	

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

No such demand was made in this monitoring period.

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

No legal contest had arisen with the project in this monitoring period.

Revision History

Version	Date	Remarks
1.1	14 October 2020	Hyperlinked section summary to enable quick access to key sections Improved clarity on Key Project Information Section for POA monitoring Forward action request section Improved Clarity on SDG contribution/SDG Impact term used throughout Clarity on safeguard reporting Clarity on design changes Leakage section added for VER/CER projects Addition of Comparison of monitored parameters with last monitoring period Provision of an accompanying Guide to help the user understand detailed rules and requirements
1.0	10 July 2017	Initial adoption