CEVİZLİK RUN-OF-RIVER HEPP

Document Prepared by GAIA Climate

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1 PROJECT DETAILS

1.1 Summary Description of the Project

The Cevizlik Run-Of River Hydroelectric Power Plant (Cevizlik HEPP) is a registered Project under Verra Registry with ID Number 753. The Cevizlik Hydroelectric Project consists of the construction of a Greenfield 92.96 MW_m run-of-river hydroelectric power plant located in the Iyidere river basin, in Turkey's Eastern Blacksea Region. The generation licence was granted by EMRA (Energy Market Regulatory Authority) on 27/06/2007. The Project includes the installation of two Francis turbines each with an installed capacity of 46.48 MW_m Cevizlik HEPP is constructed underground without any upstream reservoir lake.

Conditions prior to the project activity is the continuation of the current situation, which is the continuation of energy supply by grid-connected units which are mainly fossil fired power plants. Therefore, the main purpose of the project is to generate approximately 330 GWh/year of electricity to supply the national grid using a renewable resource and tap the significant hydropower potential in the region. The project activity reduces greenhouse gases (GHGs) emissions that would have otherwise occurred in the absence of the project activity by avoiding electricity generation from fossil fuel sources. The average annual emission reductions of the proposed Project during its second crediting period are estimated to be 162,665 tons of CO2e (tCO2e). The Cevizlik HEPP reduces greenhouse gas emissions that would have otherwise occurred in the absence of the project activity by avoiding electricity generation from fossil fuel sources both in the operating margin and build margin of the system. The average annual emission reductions of the proposed Project are estimated to be 162,665 tons of CO2e (tCO2e) and a total of 1,626,652 tCO2e over 10 years of the second crediting period.

1.2 Sectoral Scope and Project Type

The Project fits in;

Sectoral Scope Number:1

Sectoral Scope: Energy Industries- Renewable Energy

Cevizlik HEPP is not a grouped project.

1.3 Project Eligibility

1. The Project is developed as per ACM0002 Version 20.0, which is an approved methodology under Verra.
2. Cevizlik HEPP is a hydropower plant; thus is an eligible Project type as per Eligible Project Types & Scope under Renewable Energy Activity Requirements.
3. The project displaces the same amount of electricity generated by fossil-fired power plants; thereby helping reduce the weight of electricity generation by fossil-fired power plants in the national grid. This means the Project is eligible under VCS Program.

4. The Project meets the General Eligibility Criteria under Renewable Energy Activity Requirements as described below:
5. Project Type: Hydro, as discussed above, the project type is eligible.
6. Project Location: The project is in Rize province of Turkey. Thus, the project is eligible.
7. Project scale: The project activity is a 92.96 MW hydropower plant and thus qualifies under large-scale projects.
8. The Project is not registered under different standards or I-REC; therefore, no double-counting is made.

1.4 Project Design

This is the project's second crediting period and there is no design change. This is not a grouped project. The project includes a single location and installation only.

Eligibility Criteria

N/A

1.5 Project Proponent

The name of the project proponent in the registered PDD is Akım Enerji Üretimi Sanayi Ve Ticaret A.S. On 10/10/2012, the name of the project proponent had been changed to Sanko Enerji Sanayi ve Ticaret A.Ş, which is the parent company of Akım Enerji Üretimi Sanayi ve Ticaret A.Ş. [1] Hence, there is no change in the ownership of the project activity.

Organization name	Sanko Enerji Sanayi ve Ticaret A.Ş.
Contact person	Muhsin Dervişoğulları
Title	Project Development Manager
Address	15 Temmuz Mah. Gülbahar Cad. No: 43 K: 6-7 34212 Güneşli / İstanbul
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1.6 Other Entities Involved in the Project

[1] The generation license with all the amendments will be presented to the DOE during revalidation.

Organization name	Gaia Finansal Danışmanlık Hizmetleri Ticaret Limited Şirketi (Gaia Climate)
Role in the project	Consultant
Contact person	Gediz Kaya
Title	Manager
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1.7 Ownership

The legal ownership of the plant and the products generated by the project activity is Sanko Enerji Sanayi ve Ticaret A.Ş.

Gaia Climate acts as the Consultant to the Project.

1.8 Project Start Date

The start date of the project activity is 29-05-2010 which is the date when the project is commissioned, and the electricity was first supplied to the grid.

1.9 Project Crediting Period

The first crediting period was from 29-05-2010 until 28-05-2020 with two times renewable crediting period of 10 years. The second crediting period is between 29-05-2020 and 28-05-2030.

1.10 Project Scale and Estimated GHG Emission Reductions or Removals

Project Scale	
Project	X
Large project	

Year	Estimated GHG emission reductions or removals (tCO_2e)
From 29th May to 31st December 2020	96,262
2021	162,665
2022	162,665
2023	162,665
2024	162,665
2025	162,665
2026	162,665
2027	162,665
2028	162,665
2029	162,665
From January 1 st to 28th May 2030	66,403
Total estimated ERs	1,626,652
Total number of crediting years	10
Average annual ERs	162,665

1.11 Description of the Project Activity

The plant has been designed to generate electricity by utilizing the 230 m of the head between the tailwater level of the upstream existing Ikizdere HEPP and the Kalkandere HEPP project. The Project includes the installation of two Francis turbines each with an installed capacity of 46.48 MW_m Cevizlik HEPP is constructed underground without any upstream reservoir lake.

The purpose of the project is to produce renewable electricity and to contribute to Turkey's growing electricity demand through sustainable and low-carbon technology. The project displaces the same amount of electricity generated by fossil-fired power plants; thereby helping reduce the weight of electricity generation by fossil-fired power plants in the national grid.

In addition, the project has positive environmental and economic contributions as the following;

1. By means of low carbon technology, environmental pollution and GHG emissions are significantly reduced,
2. Contributing to the economic development of the country by providing sustainable energy,
3. Increasing the income and local standard of living by providing job opportunities for the local people.

With respect to the Project technologies, please see below the full detail of the project's technical specifications:

Property	Unit	Amount
Catchment Area	km^2	790
Annual Average Precipitation	mm	1100
Average Discharge	m^3/s	26,46
Design Discharge	m^3/s	50
Type	-	Ogee shaped concrete gravity
Crest Length	m	60
Crest Elevation	m	456
Thalweg Elevation	m	450
Foundation Elevation	m	444
Height above Thalweg	m	6
Height above Foundation	m	12
Flood Water Level	m	457.95
Q100	m3/s	557
Q500	m3/s	719.52
Flushing Gate		
Crest Elevation	m	450
Foundation Elevation	m	444
Crest Length	m	17
Number of Gates		3
Gate Size	m x m x m	3 x 2.50 x 4.00
Intake Structure Total Width	m	14
Settling Basin		
Length	m	64
Width	m	4 X 7
Settled Particular Size	mm	0.60
Regulation Pond Surface Area	m^2	14091
Regulating Pond Capacity Active Volume	m^3 m^3	200000 173000
Headrace Tunnel		
Type		Horseshoe, concrete lined
Inner Diameter	m	4.00
Thickness of Concrete	m	0,40
Tunnel Capacity	m3/s	50,00
Headrace Tunnel Length	m	7981,485
Access Tunnel 1 Length	m	410
Access Tunnel 2 Length	m	545
Access Tunnel 3 Length	m	960
Access Tunnel 4 Length	m	250
Access Tunnel 5 Length	m	113,50
Surge Tank		
Type		Varying Cross Section
Top Elevation	m	476
Bottom Elevation	m	412,40
Max. Water Level	m	470.10
Minimum Water Level	m	420.39
Inner Diameter	m	12.00 (412,40~430.00 between elevation) 16.00 (430.00~476.00 between elevation)
Penstock		
Inner Diameter	m	3.40
Excavation Diameter	m	4.60
Average Steel Thickness	m	20
Length	m	348,63

Table 1: Project Technologies of Cevizlik HEPP

The key parameters about the turbines used in the project have been listed below in Table 2: Key parameters of the turbines

Component	Property
Turbine type	Francis
Turbine firm	Alstom
Rotation	300 r / min
Production year	2007
Average flow rate	25 m^3 / s
Number of turbines	2
Serial numbers of the turbines	2060 & 2061
Installed capacity of each turbine	46,48 MWm / 45,70 MWe

Table 2: Key parameters of the turbines

Key parameters of the turbines detailed above have been in line with the provisional acceptance of the power plant. It has been ensured with the recent photographs of the labels on the equipment that key parameters of the turbines are still same with of the first crediting period. Plant load factor has been calculated specifically for the project as 0.40 in the baseline excel sheet. Operational lifetime of the powerplant is 49 years as stated in the generation license. As for the lifetime of the hydro equipment, "many hydro hardware manufacturers quote design lives of 25 years though in many cases the same manufacturers have the turbines out in the field that are over 50 years old and still operating reliably and efficiently." [2] In one other research paper regarding the evaluation of the lifetime of Francis turbines, the residual lifetime is about 60 years. [3] And last of all, another research center for hydro power technology, HydroCen has indicated that the average lifetime of Francis turbines are 40 years.[4] Therefore, the

[2] https://www.renewablesfirst.co.uk/hydropower/hydropower-learning-centre/how-long-will-hydropower-systems-last/

[3] https://hal.archives-ouvertes.fr/hal-01516837/document

[4] https://www.ntnu.edu/documents/1270500170/1278311537/Lifetime+estimation+of+Francis+turbines.pdf/b13f8fb4-7b5a-70a6-9265-469fdf93b2d3?t=1592318756762

operational lifetime of the powerplant as indicated as 49 years in the generation license has been found appropriate for the identification of the lifetime of the equipment.

1.12 Project Location

The Cevizlik Run-of-River Hydroelectric Power Plant has been located on İyidere River in Rize city of Turkey. The Project site is in Turkey, in the Eastern Black Sea, in the boundaries of Rize province; the Underground powerhouse is located between 40°50' 37" north latitudes and 40°28' 31" east longitudes.

Please see below the project's location:

Figure 1: Location of the Project

1.13 Conditions Prior to Project Initiation

The Cevizlik Hydroelectric Power Plant reduces greenhouse gas emissions that would have otherwise occurred in the absence of the project activity by avoiding electricity generation from fossil fuel sources both in the operating margin and build margin of the system. The average annual emission reductions of the proposed project are estimated to be, 162,665 tonnes of CO_2e (tCO_2e).

1.14 Compliance with Laws, Statutes and Other Regulatory Frameworks

The applicable mandatory laws that have been applied for the project are:

1. Electricity Market Law No:6446[5]: This Law aims to ensure the development of a financially sound and transparent electricity market operating in a competitive environment under the provisions of civil law. It also underlines the need to produce sufficient, high quality, low cost, and environmentally friendly electricity to consumers. The text also provides guidelines to structure the autonomous regulation and the supervision of the market.
2. Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy[6]: The purpose of this law is to expand the utilization of renewable energy sources for generating electric energy, to benefit from these resources in a secure, economic, and qualified manner, to increase the diversification of energy resources, to reduce greenhouse gas emissions, to assess waste products, to protect the environment and to develop the related manufacturing industries for realizing these objectives.
3. Environmental Law[7]: This law came into force in 1983, it considers the environment as a single domain, aiming not only to prevent and eliminate environmental pollution but also to allow the management of land and natural resources in an integrated manner. According to its basic principles, and as also stated in the Constitution, citizens as well as the State bear responsibility for environmental protection.

The project complies with all aforementioned laws as its activity aims at generating electricity by using a renewable resource: hydroelectric power; in a sufficient, low-cost, and environmentally friendly manner, using the latest technology available on the market. Moreover, an Environmental Impact Assessment (EIA) had been carried out and the results of this study concluded that the project activity has no significant impacts on the environment.

Additionally, according to the letter from the Trabzon Regional Forestry Directorate Forest Operation Management, dated March 27th, 2006, the project activity would supply added values and employment, and consider the negative impact on the forest and its vicinities.

Furthermore, in the official letter from the Ministry of Culture and Tourism, Trabzon Regional Council of Protection of Cultural and Natural Assets, dated May 26th, 2005, it was declared that there are not any cultural or historical assets in the Project site as defined within the scope of the Laws No: 3386, 5226 and 2863.

[5] https://www.resmigazete.gov.tr/eskiler/2013/03/20130330-14.htm

[6] https://www.mevzuat.gov.tr/mevzuatmetin/1.5.5346.pdf

[7] https://www.jeofizik.org.tr/resimler/ekler/cbbc409ec990f19_ek.pdf

1.15 Participation under Other GHG Programs

1.15.1 Projects Registered (or seeking registration) under Other GHG Program(s)

Cevizlik HEPP has not been registered under any other GHG programs

1.15.2 Projects Rejected by Other GHG Programs

As Cevizlik HEPP has not been registered under any other GHG programs, it has also not been rejected by any other GHG programs.

1.16 Other Forms of Credit

1.16.1 Emissions Trading Programs and Other Binding Limits

Cevizlik HEPP is neither included in an emissions trading program or any other mechanism that includes GHG allowance trading.

1.16.2 Other Forms of Environmental Credit

Cevizlik HEPP is neither included in an emissions trading program or any other mechanism that includes GHG allowance trading.

1.17 Sustainable Development Contributions

• Sustainable Development Goals Targeted	• Most relevant SDG Target	• Indicator
• 13 Climate Action (mandatory)	• Improve • education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	• 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
• 7 Affordable and Clean Energy	• By 2030, increase substantially the share of renewable energy in the global energy mix	• Renewable energy share in the total final energy consumption
8 Decent Work and Economic Growth	By 2030, achieve full and productive employment and decent work for all women and men	Unemployment rate, by sex, age and people with disabilities

Table 3: Impacted SDGs

SDG 7: Affordable and Clean Energy

The baseline scenario for the project is no project, thus leading to generation into the relevant grid which is dominated by fossil fuel. The clean energy generated by the project is calculated based on the amount of electricity generated by the project per annum. The project is expected to generate 330 GW of clean energy per annum. The net generation has been calculated as below: Net Generation (MWh) = Electricity Supplied to the Grid (MWh)– Electricity Consumption from the Grid (MWh)

Both electricity supplied to the grid and electricity consumption from the grid has been identified and approved by EPIAS. By means of electricity generation through hydropower, Cevizlik HEPP contributes to the following target 7.2 “By 2030, increase substantially the share of renewable energy in the global energy mix”.

SDG 8: Decent Work and Economic Growth

The project has been creating employment opportunities for 28 people (25 local employment, 2 women) during the operation phase thereby contributing to the following indicators 8.5.2 “Unemployment rate, by sex, age and persons with disabilities” and following target: “8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value”

SDG13: Climate Action:

The project leads to an emission reduction of 162,665 tCO2 per annum. The project contributes to the following indicator 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 to the following target 13.3 “Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning”

1.18 Additional Information Relevant to the Project

Leakage Management

Potential leakage emissions in the context of power sector projects are emissions that arise from the project activities such as power plant construction, fuel handling, and land inundation. According to ACM0002 / Version 20.0, such emissions do not need to be considered.

Commercially Sensitive Information

None.

2 SAFEGUARDS

2.1 No Net Harm

Throughout its construction and operational phase during its first crediting period, Cevizlik HEPP has not created any harm neither environmentally nor socio-economically; on the contrary, the project contributed to the socio-economical development in the project area significantly as:

1. The roads of Soguksu Village have been improved which helps the villagers access surrounding markets easily,
2. The project owner has donated almost 500,000 Euros to social and economic development projects in the region of the project activity. Donations were made to Rize and Trabzon, the two nearest cities to the project area, Government Offices for renovations of Court Houses and some other public buildings. Some schools in the project area were provided with stationery supplies as well as food and milk to improve the nutritional conditions for the students.
3. Local people in the project area use mechanical cable cars for transportation. Maintenance supply is provided to the cable cars in the project area to improve safety conditions.
4. The project owner made its machinery and equipment available for construction and improvement of public buildings and infrastructure in the project area,
5. The project owner assisted the stakeholders to build better housing and create more efficient economic activities for themselves after evacuating the project mainly by compensating them with amounts of funds significantly higher than those set by the arbitration court.

With respect to the second crediting period,

6. Fish passages are regularly controlled by DSI, Nature Conservation, and Provincial Environment Directorate officials. In 2021, there was no inspection due to the pandemic.
7. Streambed downstream and upstream water analyses are taken every 6 months and monitoring studies are carried out.

2.2 Local Stakeholder Consultation

Article 9 of the EIA Regulation[8] stipulates a public participation process to provide participation of the communities in the EIA process, to inform the communities about the proposed facility, and to gather their opinions. On March 16th,2006 the LSC meeting took place in the conference room of the culture-building in İkizdere District of Rize Province. Details regarding the

[8] https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=20235&MevzuatTur=7&MevzuatTertip=5

preparations, the meeting, and the suggestions/ comments that came afterward had been all provided in the PD of the first crediting period.

As for the second crediting period, an LSC Meeting is not required; however, it has to be ensured that ongoing communication with the local stakeholders is in place. Detailed information regarding the ongoing grievance mechanism and the results has been presented in 2.4

2.3 Environmental Impact

According to the Turkish Laws, a comprehensive EIA report is required for the projects which have a 25 MW or more installed capacity. By its dimension, Cevizlik falls under the EIA requirement zone. Hence, an EIA report has been carried out and it has concluded that the project activity will not lead to significant negative impacts. Furthermore, it will contribute to improving the environmental situation in the region and in the country. Avoiding fossil fuel-based electricity will enhance the air quality and help to reduce the adverse effects on the climate. Renewable technologies for electricity generation will be introduced and sustainable development will be promoted.

During the construction phase of the project activity, all precautions had been taken. Cevizlik's civil contractor was certified under ISO 9001:2000 which ensured that a quality management system had been applied to all activities that were realized during the construction phase and possible environmental impacts were minimized by training the personnel, periodical maintenance and control of the vehicles, periodic measurements e.g., air pollution.

The EIA Report has also presented a monitoring plan to be implemented during its operational life. Regular monitoring forms have been presented to the Ministry as required.

Impacts on the aquatic life

The impact on aquatic life has been managed by the installation of a fish passage to provide an upstream and downstream movement.

Impacts on the landscape

To prevent erosion in the slopes and to form a security band, reforestation works were carried out under the control of the Environment and Forestry Directorate and Operational Directorates. The species that were used are local species.

Noise impacts

The noise is negligible as the Cevizlik Power Plant will be constructed under the ground. However, to decrease the effect of noise, floor tile having vibration and sound absorbent properties was used in the power station building. As per EIA Report, noise impact had been analysed by a third party during construction phase. It had been found out all findings were below national requirements. It has been ensured by Cevizlik HEPP that it complies with national requirements.

2.4 Public Comments

There is an active grievance mechanism. In summary, the mechanism works as follows. In addition, a digital platform was created for demands and requests. All requests are tracked digitally. With the hierarchy of Operations Manager, Corporate Communications Officer, CFO, CEO, Coordinator, demands are evaluated in the digital environment, and solutions are sought.

- There is a "Public Relations Team" that will act as a bridge between the project and those affected by the project (regional people, non-governmental organizations, national and

local organizations, and authorities, other parties related to the project, etc.). The team will work throughout the business to create a positive relationship based on open communication and mutual respect.

- The Public Relations team will consist of a team of 2 people, namely the Public Relations Officer and the Operations Manager.
- Obtaining information, requests, and complaints will be handled and examined within a maximum of 7 working days.
- As a result of the review of the requests, the corrective actions to be taken, if applicable, will be notified to the requesters by the Public Relations Officer.
- Requests other than those related to infrastructure will be finalized within 30 days.
- Complaints about the infrastructure will be finalized as soon as possible so that they do not cause problems in the daily lives of the people of the region.
- For each request received, the Information, Request, and Complaint Form will be filled out. After the form is filled out by the Public Relations Officer, the Operations Manager will be informed to take the necessary action.
- After the applicable action is finalized as a result of the request/complaint, the Information Acquisition, Request, and Complaint Closing Form will be filled and the relevant person will be informed.

No negative comments has been received regarding the project until now and the grievance mechanism continues to work and will continue throughout the crediting period.

2.5 AFOLU-Specific Safeguards

N/A

3 APPLICATION OF METHODOLOGY

3.1 Title and Reference of Methodology

The approved baseline and monitoring methodology selected for the proposed project activity is: ACM0002 version 20.0 “Grid connected electricity generation from renewable sources” The methodology also refers to the latest approved versions of the following tools, which are applied by the project:

TOOL01: “Tool for the demonstration and assessment of additionality”, Version 7.0

TOOL07: "Tool to calculate the emission factor for an electricity system” version 7.0

TOOL11: "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period" version 03.0.1.

3.2 Applicability of Methodology

The choice of the ACM0002 methodology is accurate since the proposed project activity respects all the applicability conditions required.

ACM0002 version 20 applicability conditions	Project activity applicability
This methodology is applicable to grid-connected renewable energy power generation project activities that: (a) Install a Greenfield power plant; (b) Involve a capacity addition to (an) existing plant(s); (c) Involve a retrofit of (an) existing operating plants/units; (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) Involve a replacement of (an) existing plant(s)/unit(s).	The project activity is a Greenfield grid connected run-of-river hydropower project.
The project activity may include renewable energy power plant/unit of one of the following types: hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit;	The project activity includes hydro power plant without reservoir and hence the methodology is applicable
In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.	The project activity does not involve any capacity additions, retrofits, rehabilitations or replacements
In case of hydro power plants, one of the following conditions shall apply: (a) The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or (b) The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density calculated using equation (3) of	This condition is not applicable to the project activity as it does not result in a new reservoir. However, the project activity involves the construction of a regulation pond with a surface area of 14 091 m^2. The power density (PD) for this regulation pond is calculated as follows: PD = 92 960 000 W/14 091 m^2 PD = 6 597 W/m^2 PD > 4 W/m^2

the methodology ACM0002, is greater than 4 W/m^2; or (c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (3) of the methodology ACM0002, is greater than 4 W/m^2; or (d) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (3) of the methodology ACM0002, is lower than or equal to 4 W/m^2, all of the following conditions shall apply: (i) The power density calculated using the total installed capacity of the integrated project, as per equation (4) of the methodology ACM0002, is greater than 4 W/m^2 ; (ii) Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity; (iii) Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m^2 shall be: a.)Lower than or equal to 15 MW; and b.) Less than 10 percent of the total installed capacity of integrated hydro power project.	PD > 10 W/m^2, therefore, according to the methodology, there will be no emissions from the regulation pond.
In the case of integrated hydro power projects, the project proponent shall: (a) Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute the generation capacity of the integrated hydro power project; or (b) Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of a specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore this water balance will	Not applicable as the proposed project activity does not involves integrated hydro power projects

take into account seasonal flows from river, tributaries (if any), and rainfall for a minimum five years prior to implementation of CDM project activity.	
The methodology is not applicable to: (a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case, the baseline may be the continued use of fossil fuels at the site; (b)Biomass fired power plants/units.	This condition is not applicable to the project activity as it does not involve switching from fossil fuel to renewable energy at the site of the project activity, nor biomass fired power plants/units.
In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, that is to use the power generation equipment that was already in use.	The project activity does not involve capacity additions, retrofits, rehabilitations or replacements
In addition, the applicability conditions included in the tools referred to below apply.	Applicability conditions of the applied tools are justified

Table 4: Applicability Conditions

From the above, it is concluded that the project activity meets all the applicability conditions of the methodology ACM0002 version 20 .0 "Grid connected electricity generation from renewable sources".

The total installed capacity of project activity is 92.96 MW which is applicable as per large-scale project activities methodology and the capacity will remain the same hence the project activity will always be large-scale activities throughout the crediting period and thereafter.

Selected methodology has been applied together with the "tool to calculate the emission factor for an electricity system, version 7.0" and "tool for assessment and demonstration of additionality, version 7.0" and tool 11 , "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period", version 03.0.1

Tool 01 "Tool for the demonstration and assessment of additionality": The project uses relevant tool together with ACM0002 methodology. No new methodology is used. Since the tool is included in ACM0002, its application is mandatory.

According to the methodology baseline scenario has been identified as "the electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources".

Tool 07 "Tool to calculate the emission factor for an electricity system": This tool is used for the calculation of OM, BM and CM and applicable since the project activity includes grid power plants and supplies electricity to the grid and the project is not a CDM project but a voluntary project following CDM rules. CO2 emission factor for the displacement of electricity generated by power

plants in an electricity system is determined by Ministry of Energy and Natural Resources Turkey, OM & BM values.

Tool 11 "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period": This tool is used to determine the validity of the current baseline and in the case of invalid baseline for the next crediting period, the tool provides an approach to update the baseline as required by paragraph 49 (a) of the modalities and procedures of the clean development mechanism.

3.3 Project Boundary

The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system.

Please see below the diagram which delineates the project boundary:

Source		Gas	Included?	Justification/Explanation
Baseline	CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity	CO_2	Yes	*Main emission source:* Fossil fuels fired for electricity generation cause CO_2 emissions. It is included to baseline calculation to find the displaced amount by the project activity.
		CH_4	No	*Minor emission sources:* Even though there may be some CH_4 and N_2O emissions during electricity generation, these emissions are negligible and not included in baseline calculation to be conservative.
		N_2O	No	
		Other	No	
Project	Emissions during construction and operation of the project activity	CO_2	No	Minor emission source
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source

Table 5: Emission Sources Included in the Project Boundary

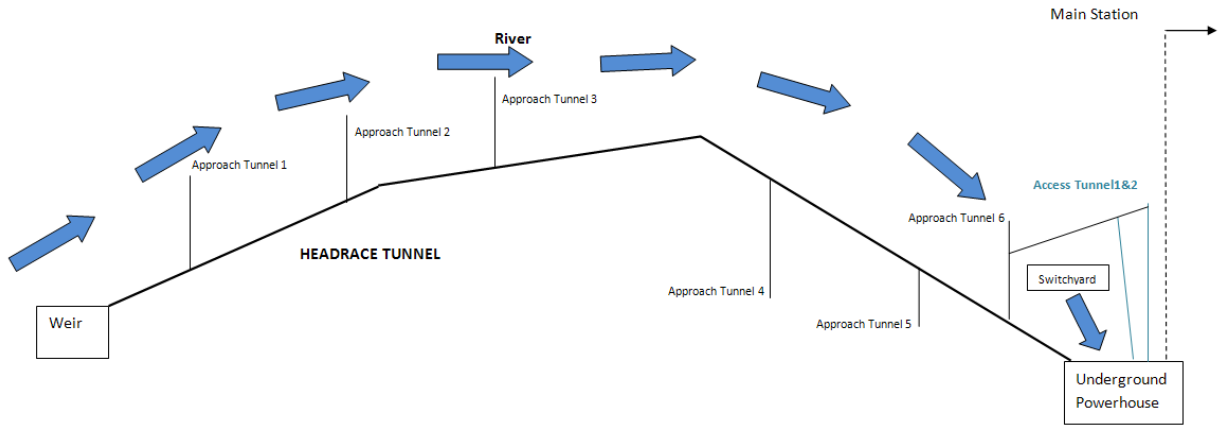


Figure 2: Cevizlik Hydroelectric Power Plant Operation Diagram

3.4 Baseline Scenario

The project applies for a renewal of the crediting period under the requirements of The Gold Standard Foundation; therefore the Methodological Tool "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period", Version 03.0.1 has been applied to demonstrate that the baseline of the project is still valid.

The Tool proceeds as follows:

Step:1 The "Procedures for the renewal of the crediting period of a registered CDM project activity" approved by the CDM Executive Board require assessing the impact of new relevant national and/or sectoral policies and circumstances on the baseline. The validity of the current baseline is assessed using the following Sub-steps:

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

The Project baseline is the "grid-connected electricity generation from renewable sources". The Project is still in compliance with Electricity Market Law with Number 4628 and dated 03/03/2001, with the recent Electricity Market Law numbered 6446 dated 14/03/2013[9] and Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy with Number 5346 and dated 18/05/2005.[10] There are no changes or revisions of these laws and legislation.

The conclusion is that the baseline of the project activity complies and will continue to comply with the laws and regulations in the sector for the next crediting period.

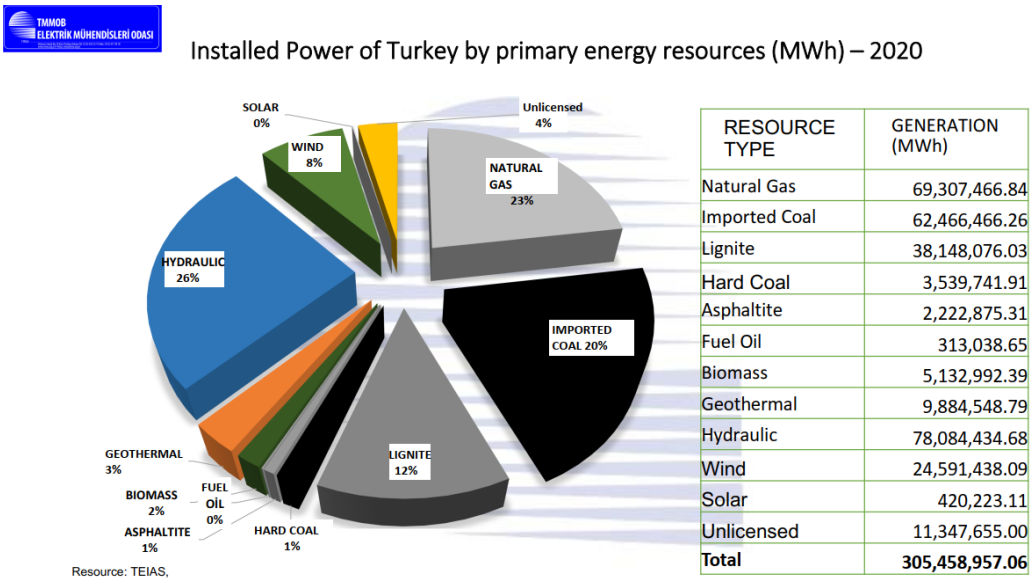
Step 1.2: Assess the impact of circumstances

The electricity generation is predominantly composed by fossil fuel fired power plants in Turkey. Please see below the diagram delineating Turkey's total installed power by primary energy sources.[11]

9 https://www.resmigazete.gov.tr/eskiler/2013/03/20130330-14.htm

10 http://eski.jmo.org.tr/mevzuat/mevzuat_detay.php?kod=131

11 https://www.emo.org.tr/ekler/095e69ae7d0338f_ek.pdf?tipi=41&turu=X&sube=0



RESOURCE TYPE	GENERATION (MWh)
Natural Gas	69,307,466.84
Imported Coal	62,466,466.26
Lignite	38,148,076.03
Hard Coal	3,539,741.91
Asphaltite	2,222,875.31
Fuel Oil	313,038.65
Biomass	5,132,992.39
Geothermal	9,884,548.79
Hydraulic	78,084,434.68
Wind	24,591,438.09
Solar	420,223.11
Unlicensed	11,347,655.00
Total	**305,458,957.06**

Figure 3: Installed power of Turkey by primary energy sources in 2020

In addition, as stated in the 5-year projection of TEIAS (Turkish Electricity Transmission Company), it is obvious that fossil fuels would continue to be the main source for electricity generation (approximately 62% in 2024). High growth rate of energy demand is forecasted to continue over coming decade. The report justifies that fossil fuels will be dominant in the electricity generation mix, with an expected share of 62% in 2024. Wind energy will only have a limited share of 7.6 % by 2024. Please see below the Figure 3 illustrating the capacity projection of Turkey for years 2019-2024.[12]

12 https://webapi.teias.gov.tr/file/abeac87d-3abc-4532-9cf4-d6f3a9d34c17?download

(%)

YILLAR	2019	2020	2021	2022	2023	2024
LİNYİT	14,0	13,6	13,2	12,7	12,3	11,8
T.KÖMÜR+ASFALTİT	1,8	1,7	1,7	1,6	1,6	1,7
İTHAL KÖMÜR	12,8	12,5	12,0	13,4	13,0	12,6
DOĞAL GAZ	39,2	38,1	37,0	35,6	34,4	33,2
FUEL OIL	0,5	0,5	0,4	0,4	0,4	0,4
MOTORİN	0,0	0,0	0,0	0,0	0,0	0,0
URANYUM	0,0	0,0	0,0	0,0	1,6	3,1
DİĞER	0,2	0,3	0,3	0,4	0,4	0,5
BİYOKÜTLE*	1,7	1,7	2,3	2,4	2,6	2,6
HİDROLİK	19,0	19,6	20,1	19,5	18,9	18,7
RÜZGAR	5,1	5,7	6,2	6,6	7,1	7,6
JEOTERMAL	2,5	2,6	2,6	2,8	2,8	2,8
GÜNEŞ	3,2	3,8	4,2	4,5	4,9	5,0
TOPLAM	**100**	**100**	**100**	**100**	**100**	**100**

(İşletmede, Lisans/ön lisans almış Kamu, ve YEKA Projesi kapsamındaki Üretim Tesisleri, Lisanssız Üretim Tesisleri ve Lisans/ön lisans almış Öngörülen Tarihlerde Devreye Girmesi Beklenen Lisans/ön lisans almış Özel Sektör Santralleriyle)
(*)Atık Isı ve Endüstriyel Atık Dahil

Figure 4: Capacity projection of Turkey for years 2019-2024

In conclusion, the conditions that were used to determine the baseline emissions in the first crediting period are still valid; therefore, Step 1.2 is justified.

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

The baseline scenario identified at the validation of the project activity during the first crediting period was the continuation of grid-connected electricity generation from renewable sources. As for Cevizilic HPP, the same circumstances are still valid. No investment from the project's proponent or a third party (or parties) has been envisioned later specifically for the project. Thus, this step is not applicable. There is no change with respect to the technology of Cevizilik HPP.

Since there are neither changes with regard to the investment nor changes in its technology, the validity of the baseline scenario during the first crediting period has been justified; therefore Step 1.3 has been justified.

Step 1.4: Assessment of the validity of the data and parameters

As per the methodology ACM0002 version 20.0, the baseline scenario has been identified as "the electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources". Therefore the emissions reduction calculations are based on two main parameters: the energy generation and the grid emission factor.

As for the continuation of the baseline scenario during the second crediting period, only the grid emission factor should be updated for the purpose of the crediting period renewal and the new grid emission factor shall be multiplied by the energy generation that has always been monitored.

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

Step 2.1: Update the current baseline

As justified above, the project baseline for the next crediting period is the use of electricity from the national grid, and the latest version of the approved applicable methodology ACM0002 version 20.0, "Large-scale Consolidated baseline methodology for grid-connected electricity generation from renewable sources" has been followed.

Step 2.2: Update the data and parameters

The emission factor of the grid has been updated as per the Tool, "Tool to calculate the emission factor for an electricity system" version 07.0.

According to the Tool 07, three options have been provided in paragraph 17 (a). For Cevizlik HEPP, Option 1 for national EF by the Turkish Republic Ministry of Energy as 0.492925 tCO_2/MWh has been selected.[13] Combined margin (CM) emissions factor calculation with national values of operating margin (OM) and build margin (BM) is shown below under baseline emissions part.

3.5 Additionality

The additionality analysis carried out in the PDD of the first crediting period proves that the project activity is additional.

As per Tool 11 "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period" Version 3.0.1, demonstration of additionality is not required unless Step 1 is justified.

In respect to the regulatory surplus requirement as part of the additionality assessment at renewal of crediting period, please see below the following applicable mandatory laws and regulations:

-Electricity Market Law: This Law aims to ensure the development of a financially sound and transparent electricity market operating in a competitive environment under the provisions of the civil law. It also underlines the needs to produce a sufficient, high quality, low cost and environmentally friendly electricity to consumers.

-

13https://enerji.gov.tr//Media/Dizin/EVCED/tr/%C3%87evreVe%C4%B0klim/%C4%B0klimDe%C4%9Fi%C5%9Fikli%C4%9Fi/T%C3%BCrkiyeUlusalElektrik%C5%9EebekesiEmisyonFakt%C3%B6r%C3%BC/Belgeler/EK-2.pdf

-Environmental Law, considers the environment as a single domain, aiming not only to prevent and eliminate environmental pollution, but also to allow the management of land andnatural resources in an integrated manner.

-Regulation on procedures and principles of signing the agreement of water resources utilization to generate electricity for the electricity market,

-Regulation on Environmental Impact Assessment,

During the second crediting period, the Project Proponent acknowledges and ensures that the project complies with all aforementioned laws as its activity aims at generating electricity by using a renewable resource: hydroelectric power; in a sufficient, low-cost and environmentally- friendly manner, using the latest technology available on the market.

3.6 Methodology Deviations

No deviation occurred from the related methodology used in this project.

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

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

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y} \quad (1)$$

Where:

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

Calculation of $\mathbf{EF_{grid,CM,y}}$ Based on pre-calculated values by Turkish Government, Ministry of Energy and Natural Resources, document "TURKEY NATIONAL ELECTRICITY NETWORK EMISSION FACTOR INFORMATION FORM", the applicable grid emission factor value to calculate the emission reductions of the Hydro power plant project(other renewables) is 0.492925 tCO_2/MWh.

Since the BM , OM and CM values are calculated by Turkish Ministry of Energy and Natural Resources, those factors are calculated and updated regularly.

For Build margin factor calculation, Chronological order of power generation plants from TEİAŞ Load Dispatch Department with commissioning dates, plant names, fuel types, installed power values, electricity generation for the calculated year were used as input data. Consequently, Turkish Ministry of Energy and Natural Resources calculated ; EF,grid,BM,y : 0.4153

For Operating margin factor calculation, Chronological order of power generation plants from TEİAŞ Load Dispatch Department with, fuel types, electricity generation for the calculated year were used as input data. By using all the data which were mentioned above, Turkish Ministry of Energy and Natural Resources calculated; EF,grid,OM,y : 0.7258

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

$$EF_{grid,CM,y} = EF_{grid,OM,y} * w_{OM} + EF_{grid,BM,y} * w_{BM} \quad \textbf{(2)}$$

BE_y	=	Baseline emissions in year *y* (t CO_2)
$EG_{facility,y}$	=	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)
$EF_{grid,y}$	=	Combined margin CO_2 emission factor for grid connected power generation in year *y* calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (t CO_2/MWh)

According to the Tool for hydro power generation project activities for the second crediting period: wOM = 0.25 and wBM = 0.75

CM (OM*0.25 + BM*0.75)	**0.492925**
(0.7258 * 0.25)+(0.4153 * 0.75)	

4.2 Project Emissions

Project emissions are calculated as follows:

$$PEy=PEFF,y+PEGP,y+PEHP,y \quad \textbf{(3)}$$

Where:

PE_y	=	Project emissions in year *y* (t CO_2e/yr)
$PE_{FF,y}$	=	Project emissions from fossil fuel consumption in year *y* (t CO_2/yr)
$PE_{GP,y}$	=	Project emissions from the operation of dry, flash steam or binary geothermal power plants in year *y* (t CO_2e/yr)
$PE_{HP,y}$	=	Project emissions from water reservoirs of hydro power plants in year *y* (t CO_2e/yr)

Fossil fuel consumption ($PE_{FF,y}$)

The project's internal consumption is approximately 500 kVA, which can be considered negligible. This consumption will be satisfied from the electricity generation when the plant is in operation or from the grid when the plant is not in operation. Eventually, if there is no electricity available in the grid and the plant is not in operation the internal consumption will be satisfied from a diesel generator, but this could rarely occur. If diesel engines would be used, emissions associated would be calculated according to the "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion" and considered as project emissions. Therefore:

$PE_{FF,y} = 0$

Emissions of non-condensable gases from the operation of geothermal power plants ($PE_{GP,y}$)

Since the project activity does not involve the operation of a geothermal power plant,

$PE_{GP,y} = 0$

Emissions from water reservoirs of hydropower plants ($PE_{HP,y}$)

The project activity is a Greenfield run-of-river hydropower project. The water is diverted using a diversion wall structure to the power canal and then to the powerhouse. The water will be fed back to the river through the tailrace canal. The diversion structure results in a regulation pond with a surface area of 14 091 m^2, which does not affect in any way the volumes of existing reservoirs downstream of the project.

The power density (PD) for this regulation pond is calculated as follows:

PD = 92 960 000 W/14 091 m^2

PD = 6 597 W/m^2

PD > 10 W/m2

Therefore, $PE_{HP,y}=0$

Hence, $PE_y = 0$

4.3 Leakage

As per ACM0002 Version 20.0, leakage emissions do not need to be considered.

4.4 Net GHG Emission Reductions and Removals

$$ER_y = BE_y - PE_y \quad (4)$$

Where:

ER_y = Emission reductions in year *y* (t CO_2e/yr)

BE_y = Baseline emissions in year *y* (t CO_2/yr)

PE_y = Project emissions in year *y* (t CO_2e/yr)

As per the tool, the PE_y equals to zero. Thus, the project emissions are equal to the baseline emissions.

Total installed capacity = 92.96 MW

Net electricity delivered to grid ($EG_{PJ,y}$) = 330 GWh / yr

Grid emission factor ($EF_{grid,CM,y}$) = 0.492925

Baseline emissions(BE_y) = Emission reductions (ER_y), since Project emissions (PE_y) is zero.

$BE_y = EG_{PJ,y} \cdot EF_{grid,CM,y}$ = 330,000 * 0.492925 = 162,665.25 tCO_2e

Year	Estimated baseline emissions or removals (tCO_2e)	Estimated project emissions or removals (tCO_2e)	Estimated leakage emissions (tCO_2e)	Estimated net GHG emission reductions or removals (tCO_2e)
2020 (29/05/2020-31/12/2020)	96,262.2	0	0	96,262.2
2021	162,665.25	0	0	162,665.25
2022	162,665.25	0	0	162,665.25

2023	162,665.25	0	0	162,665.25
2024	162,665.25	0	0	162,665.25
2025	162,665.25	0	0	162,665.25
2026	162,665.25	0	0	162,665.25
2027	162,665.25	0	0	162,665.25
2028	162,665.25	0	0	162,665.25
2029	162,665.25	0	0	162,665.25
2030 (01/01/2030-28/05/2030)	66,403.07	0	0	66,403.07
Total	**1,626,652.5**	**0**	**0**	**1,626,652.5**

5 MONITORING

5.1 Data and Parameters Available at Validation

Data / Parameter	$EF_{grid,CM,y}$
Data unit	tCO_2/MWh
Description	Combined margin CO_2 emission factor for grid-connected power generation in year y

Source of data	Turkish Government Ministry of Energy and Natural Resources (https://enerji.gov.tr/evced-cevre-ve-iklim-turkiye-ulusal-elektrik-sebekesi-emisyon-faktoru)
Value applied	0.492925
Justification of choice of data or description of measurement methods and procedures applied	$EF_{grid,CM,y}$ was calculated by the Turkish Ministry of Energy and Natural Resources using Version 06.0 of TOOL 7: "Tool to calculate the emission factor for an electricity system" and published in "TURKEY NATIONAL ELECTRICITY NETWORK EMISSION FACTOR INFORMATION FORM".
Purpose of Data	Calculation of baseline emissions
Comments	-

5.2 Data and Parameters Monitored

Data / Parameter	$EG_{PJ,y}$
Data unit	MWh/year
Description	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y
Source of data	PMUM (Market Financial Settlement Center) records (Meter reading records of main meters are cross-checked)
Description of measurement methods and procedures to be applied	Continuous measurements are to be made by two sets (one main and one reserve) of meters. These meters are sealed by TEIAS and intervention by the project proponent is not possible. Measurements will be used for the calculation of the net electricity generation supplied by the project to the grid.
Frequency of monitoring/recording	Continuous measurement, monthly recording
Value applied	330 000
Monitoring equipment	The model of the electricity meters is Itron SL761X071 and the serial numbers of the main meters are 84260531 and 84260533, and control (check) meters are 84260532 and 84260534.
QA/QC procedures to be applied	Cross-check measurements results with records for sold electricity
Purpose of data	Calculation of baseline emissions

Calculation method	N/A
Comments	Estimated net electricity generation was taken from Generation License.

5.3 Monitoring Plan

The purpose of the monitoring plan is to ensure that the monitoring and calculation of emission reductions of the proposed Project within the crediting period are complete, consistent, clear, and accurate.

Data and parameters that are listed below as well as in Section 5.2., will be monitored in accordance with ACM0002 – "Consolidated baseline methodology for grid-connected electricity generation from renewable sources":

i. Quantity of net electricity generation supplied by the project plant to the grid ($EG_{Facility,y}$),

Data will be recorded for each crediting period and maintained at least 2 years after its end. The company will establish a dedicated maintenance system to ensure data availability for the required period.

The project is operated by Sanko Enerji which ensures the overall site management in accordance with Turkish Laws and technology providers' guidelines.

The monitoring will be performed in-house by the project proponent:

1. Electrical Engineers will undertake the specific actions required by the monitoring plan, i.e. they will measure the electricity generation, will make calibration according to procedures, the electricity supplied to the Turkish grid by the power plant, the electricity imports, and the amount of fuel consumed, if fuel is consumed.

2. Mechanical Engineers will ensure that all the instrumentations and devices to perform the monitoring are working properly.

3. Accounting Manager will be in charge of providing the electricity sales receipts to the Operations Manager of the plant.

4. Operations Manager will be the VER coordinator. They will be in charge of:

    a. Ensuring that instrumentations and devices are available and properly suited to perform efficiently the monitoring.

    b. Communicating and coordinating the monitoring tasks of all business units.

    c. Developing, executing, analyzing, and improving the VER Monitoring/Reporting Procedures. This includes the cross-checking and consolidation (with multiple sources whenever possible) of the data obtained from the electrical engineers

and the accounting manager. They will also record this operation properly to be able to provide it to the DOE during the verification process.

d. Calculating and reporting the emission reductions, and

e. Organizing in-house seminars to inform and train the company staff on the monitoring procedures.

The organizational chart of the facility is given in the figure below.

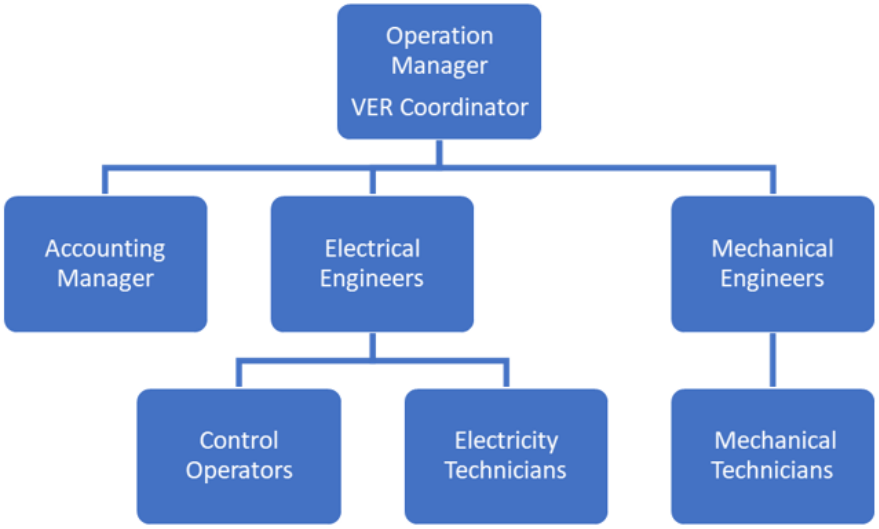


Figure 5: Organizational Chart

The monitoring report will be submitted at the end of every year for the verification of DOE. The report will cover the monitoring of grid-connected power generation, check report, report on calculation of the emission reductions and records of monitoring instrument repair and calibration, etc.

The Electrical Engineers will obtain the readings from the meters, will report them in the spreadsheet for measurement control, and will store the data discharged from the meters electronically.

The meter (ACE SL7000 series developed for Turkey) which will be used in the powerhouse is produced by Itron and is in line with the EMRA requirements for electricity meters. (Please find the information on the technical specifications of the meter and its declaration of conformity on the product website.)[14]

Also, the Itron meter fully conforms to or exceeds all relevant IEC standards for electronic metering equipment(IEC 62052 and IEC 62053)[15]. Re-calibration periods are defined by national

[14] https://www.itron.com/na/solutions/product-catalog/ace-sl7000

[15] https://www.itron.com/-/media/feature/products/documents/brochure/ace-sl7000-en-web.pdf

metrology institutes country by country and in Turkey, this period is defined as 10 years according to the Regulation of Metering and Testing of Metering Systems paragraph b) of Article 9. The article states that “Periodic tests of meters of electricity, water, coal gas, natural gas and current, and voltage transformers are done every 10 years.”.

Besides, in order to measure the electricity production figure of the plant accurately, there will be two sets of meters in the powerhouse. One is the main meter for measuring and the other is the check meter for control. Both of these meters are metering the energy in two directions (consumption and production). If there is a measuring difference between these two meters and one of the parties (TEIAS or the company) requests for calibration of the meters, in this case, the meters will be calibrated without waiting for the periodic calibration date. This calibration process is done by another third party under the control of TEIAS. The company is not responsible for the calibration of the meters in Turkey according to the local standards.

Information related to the electricity meters can be found in the table given below.

Brand	Type	Class	Serial Number
Itron	SL761X071	C-2	84260531
			84260532
			84260533
			84260534

Table 6: Electricity Meter Information

On the other hand, the emission reductions will be calculated according to the measurements of the main electricity meter since the electricity production invoices are made out based on this meter. During each monitoring period, the invoices will be presented to the DOE, together with the calculation details.

The Electrical Engineers will receive sufficient and continuous training in terms of monitoring and verification on aspects such as meter's reading and calibration and reading's recording, adjustment, and reporting. If new personnel is hired, they will have to follow up a training program and will be trained in the specific skills required to carry out the Monitoring Plan.