



Gold Standard[®]
for the Global Goals

TEMPLATE

KEY PROJECT INFORMATION & PROJECT DESIGN DOCUMENT (PDD)

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VERSION **v. 1.2**

RELATED SUPPORT

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Key Project Information

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KEY PROJECT INFORMATION

GS ID of Project	GS 2475
Title of Project	Icdas Biga Wind Farm Project
Time of First Submission Date	13/03/2024
Date of Design Certification	11/01/2017
Version number of the PDD	08
Completion date of version	16/09/2024
Project Developer	İçdaş Çelik Enerji Tersane ve Ulaşım San. A.Ş.
Project Representative	GTE
Project Participants and any communities involved	İçdaş Çelik Enerji Tersane ve Ulaşım San. A.Ş. (project owner) GTE (Project consultant)
Host Country (ies)	Turkey
Activity Requirements applied	☐ Community Services Activities ☒ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A
Scale of the project activity	☐ Micro scale ☐ Small Scale ☒ Large Scale
Other Requirements applied	RE Activity Requirements (GS4GG), Version 1.4
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
Project Cycle:	☒ Regular ☐ Retroactive

Table 1 – Estimated Sustainable Development Contributions

Sustainable Development Goals Targeted	SDG Impact (defined in B.6.)	Estimated Annual Average	Units or Products
4 Quality Education	4 monthly scholarship and local teenagers trained at İCDAŞ sailing and swimming school	8	local students given scholarship
		40	local teenagers trained
7 Affordable and Clean Energy	MWh of renewable energy generated	169,512.49 ¹	MWh/year
8 Decent Work and Economic Growth	Employee	13	workers for operation
13 Climate Action	Emissions Reductions	109,877	tCO ₂ /year

SECTION A. DESCRIPTION OF PROJECT

A.1 Purpose and general description of project

The project aims to generate electricity from wind, reduce the need of fossil fuel and import needs, and increase the diversity in energy generation. The project corresponds to the İçdaş Biga Wind Power Plant of İçdaş Çelik Enerji Tersane ve Ulaşım San. A.Ş. The firm capacity of the plant was 60 MW and consisted of 19 turbines with 3.2 MW capacity. The brand of wind turbines is GE and the model is 3.2-103. The first set of turbines was commissioned on 16.10.2015, which is the start date of operations. The average annual electricity generation between years 2016 and 2021 is 153.674 GWh to be fed to the national grid. The greenhouse gas emission-free electricity generated by the project enables the grid mix to lower its carbon intensity. The project's contribution to reduce emissions was approximately 85,228 tonnes of CO₂ per year and 596,595 tonnes of CO₂ for the first crediting period. For the second crediting period, 99,611 tCO₂/year annual reduction was expected for a total of 657,982 tCO₂ for 6 years and 9 months before the extension.

¹ Micrositing Study Conducted by İçdaş

Second crediting period is not 7 years due to the foregone period until the crediting renewal. As per the Gold Standard Principles and Requirements, Version 1.2, Article 5.1.46, "Delay in the completion of re-validation beyond the last date of current certification cycle shall result in a reduction of any issuance of Certified Products and/or Impact Statements available during following certification cycle (for example, a delay of 1 year beyond the first cycle shall mean that no Certified Impact Statements shall be issued for the period of delay)." Thus, the crediting period is revised as 10.03.2023 – 16.10.2029 (both days included) making a total length of 6 years and 9 months. Calculations are conducted considering the delayed and foregone period.

The number of wind turbine units has been changed due to the capacity extension described below. In February 2022 and June 2022, Energy Market Regulatory Authority (EMRA) has allowed extension of capacity and addition of auxiliary generation units for better utilization of renewable energy potential in Turkey. Thus, Icdas Biga Wind Farm has been allowed to install a new wind turbine generator with a capacity of 7 MWm/3.8 MWe and the generation license has been revised as 67.8 MWm/63.8 MWe with the amendment dated 04.04.2023. The total number of wind turbines after the extension became 20. Additional turbine is Nordex brand, Delta4000 series, N163/6.x model. After extension, electricity generation capacity has the configuration of 16 x (3.2 MWm/3.2 MWe) + 2 x (3.2 MWm/2.93 MWe) + 1 x (3.2 MWm/2.94 MWe) + 1 x (7 MWm/3.8 MWe). Annual electricity generation is estimated as 174,609.00 MWh/year as per the micro siting studies. Estimated generation corresponds to 113,181 tCO₂ avoided annually. Thus, estimated annual average electricity generation over the second crediting period has been calculated as 169,512.49 MWh and emission reduction as 109,877 tCO₂ after the extension. The difference arises from the commissioning date of the additional wind turbine. The extension unit is expected to be commissioned in October 2024 as per the generation license. Details are provided in the ER Calculation Sheet.

The design change involved only addition of one new turbine and did not involve extension of the project boundaries into new sites.

According to ACM0002, the spatial extent of the project boundary includes the project power plant/unit and all power plants/units connected physically to the electricity system, which the Turkish electricity grid, that the VER project power plant is connected to. Icdas Biga Wind Farm is connected to the Turkish grid via 154 kV Karabiga TM.

The main sources for energy generation in Turkey are fossil fuels. The greenhouse gas emissions (GHG) resulting from the generation of electricity from fossil fuels accumulate

into the atmosphere, indirectly provoking climate change. This project contributes to mitigate the emission of greenhouse gases.

The area where the turbines and switchyard are going to be installed was forest land. The building and equipment covers only 5% of the total project area and it is possible to continue forestation activities within the area. The nearest residential areas are Değirmencik, Örtülüçe, Çakırlı, Kemer and Aksaz villages and Karabiga town.

The project helps Turkey in many aspects of sustainable development path. By increasing the renewable energy share in Turkey's energy mix, both the pollutant (e.g NO_x, SO₂) and GHG emissions from fossil fuel combustion are reduced. The project is compatible with local environmental as well as regional and national regulations. It has also been approved by the Çanakkale Provincial Directorate of Environment and Forestry that the project does not require EIA on 07.04.2009.

The project also has economical positive impacts. The construction of the project was done by hiring people from surrounding localities and hence contributing to the local economy.

Moreover, as a part of the project activities, some physical support for local schools are being provided, for example, construction of new classes, granting computers and projectors. Scholarships for high school and university students are provided and young people are educated at the yachting and swimming clubs of the company. All these activities have been helping to increase the Human and institutional capacity of the local people.

Milestones of the Project activity is given in the below table.

Table 2 - Schedule of the Project activities²

Date	Activity
07.04.2009	EIA not required decision
22.04.2011	Bidding Invitation from TEİAŞ for the electricity generation license. Issuance of the initial license
11.01.2012	Issuance of Electricity Generation License
07.02.2012	Investment decision date (Board decision on consideration of carbon finance)

² All reference documents had been submitted during the approval of the PDD for the first crediting period. Please see the approved PDD for the first crediting period.

11.01.2012	Issuance of Electricity Generation License
24.05.2013	Date of Local Stakeholder Meeting
10.07.2013	Remark of Directorate of Nature Conservation And National Parks on the cancellation of the six turbines and precautions on bird migration routes.
23.08.2013	First submission of Local Stakeholder Consultation Report to Gold Standard.
9.12.2014	Turbine Agreement*
10.12.2014	Completion of the Energy Assessment Report
15.12.2014	1 st Loan Agreement
27.01.2015	Revision of the Electricity Generation Licence according to the new turbine capacities.
27.03.2015	2 nd Loan Agreement
25.03.2015	Construction Agreement
18.09.2015	System usage agreement
16.10.2015	Commissioning of T15-T16-T17-T18-T19
02.12.2015	Commissioning of T8-T9-T10-T11-T12-T13-T14
31.12.2015	Commissioning of T1-T2-T3-T7
22.01.2016	Commissioning of T4-T5-T6
01.08.2016	Start of Stakeholder Feedback Round (SFR) (the project documents were publicly available on the project owner's website)
08.08.2016	Live SFR meeting at Örtülüce Village
15.06.2022	License Amendment for Additional Turbine
29.03.2023	Turbine Agreement** (Capacity Extension)
04.04.2023	License Amendment for Capacity Change
06.04.2023	EIA Exemption for Capacity Extension
16.10.2015 - 16.10.2022	1 st Crediting Period
17.10.2015 - 31.10.2016	1 st Monitoring Period of 1 st Crediting Period
22.04.2018 – 20.04.2021	2 nd Monitoring Period of 1 st Crediting Period
21.04.2021 – 16.10.2022	3 rd Monitoring Period of 1 st Crediting Period
10.03.2023 – 16.10.2029	2 nd Crediting Period

*Project Start Date

**Start Date of New Technology

A.1.1. Eligibility of the project under Gold Standard

Project is eligible as per section 3.1.1 of GS4GG Principles & Requirements and meets the criteria as follows.

- Project follows the methodology ACM0002 Version 21.0, that is an approved methodology under Gold Standard.
- Project is a wind type which is an eligible project type in accordance with the Eligible Project Types & Scope under Renewable Energy Activity Requirements.

- Project activity results in displacement of electricity from thermal power stations while contributing to sustainable development of Turkey. Thus, it supports the Gold Standard vision and mission.
- Project is not registered with any other voluntary or compliance schemes.
- There is no potential for double counting of impacts since the Project is not registered under another programme of a similar nature.
- Project meets the General Eligibility criteria as depicted below.

Type of project: Wind

Location: Turkey, Çanakkale

Project Area, Project Boundary and Scale: Project area and boundaries are explained in detail in this document. Project is Large Scale.

Host Country Requirements: Project meets the legal regulations in Turkey.

Contact Details: It is provided in this document.

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

İçdaş Çelik Enerji Tersane ve Ulaşım San. A.Ş.

A.2 Location of project

The project is located on the hills around Canakkale in Turkey. This project shall be implemented at location of Keçibayırı Tepe-Muhittin Tepe, Zeytin Tepe-Boz Tepe, Hacidede Tepe-Güllüdere Tepe, Küçükalan Tepe- Üçyollar around Biga District, which is the largest district of Çanakkale Province, around 90km from the city centre.

The district is surrounded by Gönen in the east, by Lapseki in the west, by Çan in the South and by Sea of Marmara in the north. Total population of the district is 80,849 and total population of the central district is 36,542. The coordinates of the turbines installed at the project activity are listed in Table 3 and Figure 1.

Table 3 - Coordinates of the location of the planned wind turbines

	East	North		East	North
T1	512085	4474369	T11	515729	4471836
T2	512372	4474171	T12	516038	4471648
T3	513246	4474221	T13	515958	4471222
T4	513341	4473807	T14	516529	4471091
T5	513650	4473663	T15	519248	4477433
T6	513460	4472973	T16	519483	4477183
T7	513717	4472675	T17	520077	4477458

T8	513631	4471981	T18	521462	4478454
T9	514500	4472930	T19	521819	4478189
T10	514607	4472437	T20	520883	4478232

Source: Çanakkale Governorship, Directorate of Cadastre



Figure 1 - Project Location

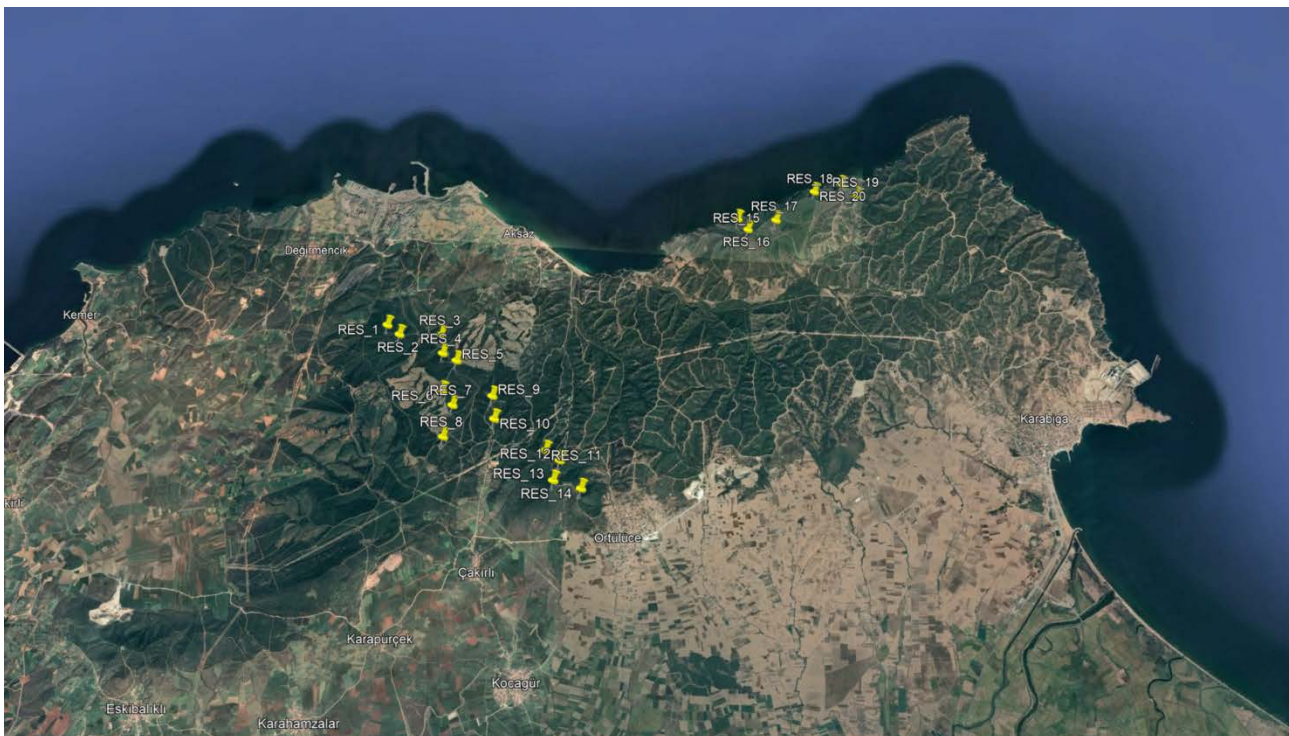


Figure 2 - Project Location after Capacity Extension (RES_20 as T20)

A.3 Technologies and /or measures

Wind power is a well-established technology that, once built and in operation, has no carbon emissions and has no fuel costs. It has the advantage of quick installation but the disadvantage of supply-demand mismatch, due to the variability of wind. Nevertheless, there is great potential for wind power in Turkey. According to the Turkish Wind Potential Atlas developed in 2007, the country has minimum wind energy potential of 5,000 MW in regions with annual wind speeds of 8.5 m/s and higher and 48,000 MW in areas with speeds higher than 7.0 m/s. (Tunç & Pak, 2012)

The Icdas Biga Wind Power Plant initially had a capacity of 60MW with 19 wind turbines which generated on average 153,674 MWh/year between years 2016-2021. The project was initially planned to include 19 wind turbines before the extension with rated power of 3.2 MW and rotor diameter of 103 m. It is firstly designed to be carried out with a production capacity of 106 MW. However, since the installed power is limited to a production capacity of 60 MW, which is the transformer power in that location, it is revised as 60 MW. The project started to generate electricity on 16.10.2015 with 5 turbines. On 02.12.2015, 7 of the remaining turbines started to operate and on 31.12.2015 4 more turbines started to operate. On 22.01.2016, the remaining 3 turbines started to generate electricity and the project reached full capacity.

After the capacity extension, 1 turbine with a capacity of 3.8 MW will be installed and the total number of turbines will be increased to 20 with a total capacity of 67.8 MWm/63.8 MWe. Additional turbine is Nordex Delta4000-N163/6x.

The installed 19 wind turbines are purchased from the General Electric Company. The wind turbine employs a doubly-fed induction generator with a power converter interfacing the rotor to the grid. The wind turbine is capable of supplying/drawing reactive power to/from the grid thus contributing to grid voltage support. 3.2 is a three-bladed horizontal axis upwind wind turbine with rated power of 2000kW and rotor diameter of 103m. The SL3000/113 Normal Temperature Type is applicable to areas in normal environmental temperature with survival ambient temperature of -20°C ~ +50°C and operational ambient temperature of -15°C~+30°C. It consists of rotor, blades, blade pitch control system, hub, gearbox, bearings, brake system, generator, gearbox/generator coupling, yaw system, tower, nacelle, wind sensor and lightning rod, lightning protection, control system, power converter and medium voltage transformer and switch gear. The rotor is connected to the gearbox flange via a hub spacer which is fitted in the inner ring of main bearing. The outer ring of the main bearing is bolted to

the main frame. The rotor load transmits to the main frame via main bearing. The main frame is connected to the tower top flange via yaw bearing. Inside the nacelle there employs a maintenance crane to perform maintenance, overhaul, and exchange for gearbox, generator, and rotor blades.

Table 4 - Initial Turbine Specifications

Design Data	
Rated Power	3.2 MW
Rotor Blade Diameter	103 m
Tower Hub Height	85m
Life Time	20 years*
Rotor Blade	
Number of rotor blades	8,332 m ²
Swept Area	7389.8 m ²
Rated Speed	14 rpm
Rotating Speed Range	9.2-14.8 rpm
Rotation	Clockwise
Number of Rotor Blades	3
Lightning Detector	
Signal	Ultrasonic
Generator	
Type	Double-fed induction generator
Gear Box	
Stages	multi-stage planetary/helical design

Reference: Project Design Document for the first crediting period

*The life time of the equipment is gathered from the Design Evaluation Conformity Statement by Tüv Nord.

Table 5 - Additional Turbine Specifications of Nordex Delta4000 – N163

N163 / 6.x	
Operating data	
Rated power	7,000 kW
Cut-in wind speed	3 m/s
Cut-out wind speed	26 m/s
Hub Height	118 m
Rotor	
Diameter	163 m
Swept area	20,867 m ²
Nominal power / area	326 W/m ²

Gearbox	
Type	Multi-stage planetary gear + spur gear stage
Gear ratio	50 Hz: $i = 122.4$ 60 Hz: $i = 146.9$

İçdaş wind farm is connected to the grid via Turkish Electricity Transmission Company's (TEİAŞ) 154 kV Karabiga TM. The connection point and the location of the electricity metering equipment are demonstrated in the single line diagram. **(Figure 3)** The plant load factor is 32%. This figure is derived from operating practices. It is calculated via dividing the total amount of energy the plant produced during a period of time by the amount of energy the plant would have produced at full capacity.

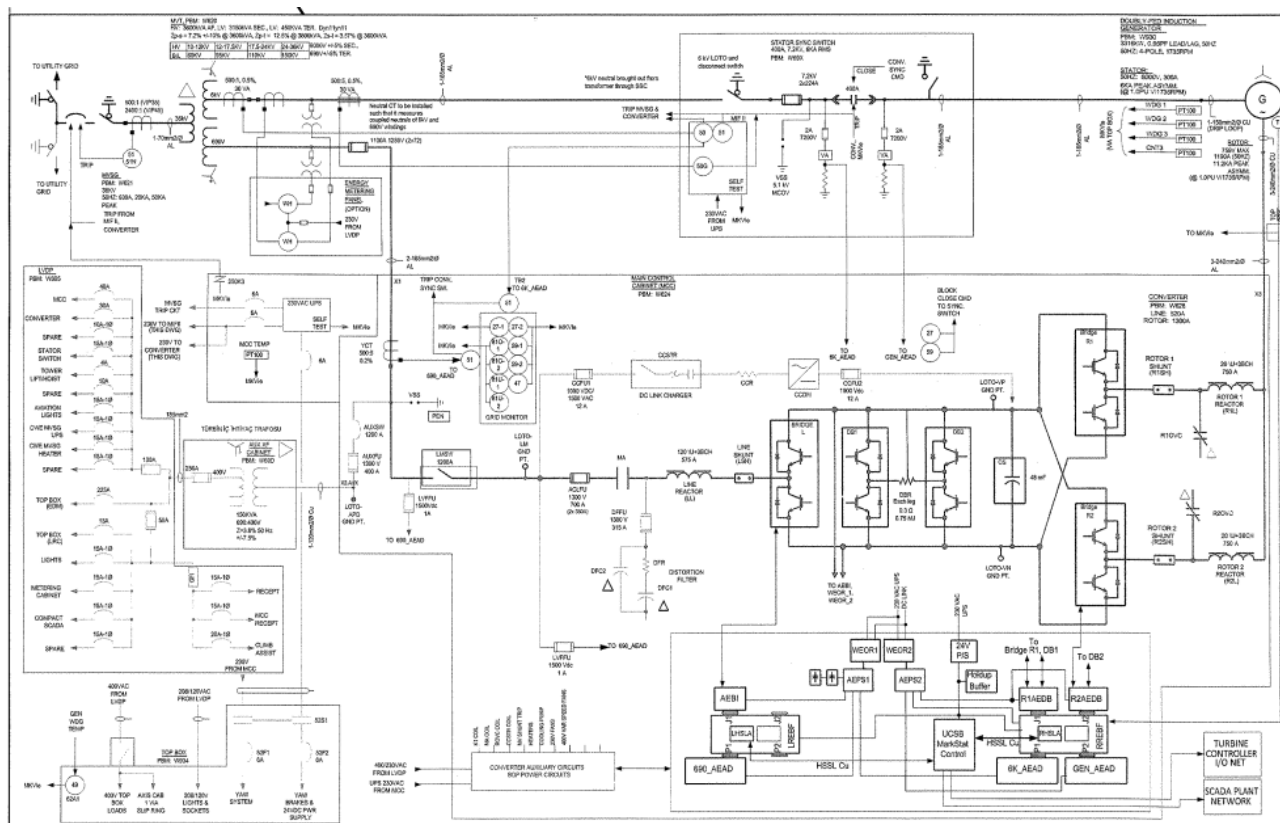


Figure 3 - Single Line Diagram of the Power Plant

In the absence of the project activity, the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources. Technical details of meters are provided below. Calibration date of the meters is 25/05/2022.

Table 6 - Technical Information on Electricity Meters

	Main Meter	Control Meter
Serial No.	10879418	10879419
Brand	EMH	EMH
Type	LZQJ-XC	LZQJ-XC
Class	0.2S (active) 0.5S (reactive)	0.2S (active) 0.5S (reactive)
First index date	25/05/2022	25/05/2022
Status	Calibrated	Calibrated

A.4 Scale of the project

Large scale

A.5 Funding sources of project

No public funding is used for the project activity. Also, no public funding is used for design change component. Funding source is project owner's own funds.

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

B.1. Reference of approved methodology (ies)

The approved methodology applied to the project is ACM0002, “Large-scale Consolidated Methodology: Grid-connected electricity generation from renewable sources”, version 21.0³. The following methodological tools in line with the methodology are used:

- Tool01: “Tool for the demonstration and assessment of additionality”, Version 07.0⁴
- Tool02: “Combined tool to identify the baseline scenario and demonstrate additionality”, Version 07.0⁵
- Tool07 “Tool to calculate the emission factor for an electricity system”, Version 07.0⁶
- Tool10: “Tool to determine the remaining lifetime of equipment”, Version 01⁷
- Tool11: “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period” Version 3.0.1⁸

B.2. Applicability of methodology (ies)

According to UNFCCC (paragraph 28, decision 1/CMP.2), a renewable energy project activity can be classified as small-scale CDM project if the project activity has a maximum output capacity of 15 MW. The project output capacity is 63.8 MWe, so, the project activity is identified as large-scale and a large-scale methodology, ACM0002, is applied. ACM0002 applies to project activities that include retrofitting, rehabilitation (or refurbishment), replacement or capacity addition of an existing power plant or construction and operation of a Greenfield power plant. Since, the project activity

³ <https://cdm.unfccc.int/UserManagement/FileStorage/ZPFJL01OU2RYC6N3HASIXV7K84QBG9>

⁴ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>

⁵ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-02-v7.0.pdf>

⁶ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

⁷ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-10-v1.pdf>

⁸ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf>

includes construction of a Greenfield wind power project, this methodology is applicable. The other applicability criteria and their justifications are listed at the table below.

Table 7 - ACM0002 Applicability Conditions

Applicability conditions	Justification
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 proposed project activity involves the installation of a new power plant⁹ for renewable electricity generation that is delivered to the grid.
In case the project activity involves the integration of a BESS, the methodology is applicable to grid-connected renewable energy power generation project activities that: (a) Integrate BESS with a Greenfield power plant; (b) Integrate a BESS together with implementing a capacity addition to (an) existing solar photovoltaic¹ or wind power plant(s) / unit(s); (c) Integrate a BESS to (an) existing solar photovoltaic or wind power plant(s) / unit(s) without implementing any other changes to the existing plant(s); (d) Integrate a BESS together with implementing a retrofit of (an) existing solar photovoltaic or wind power plant(s) / unit(s).	The project activity does not involve the integration of a BESS. Hence, this condition is N/A.
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 consists in the installation of a wind power plant¹⁰; therefore, the project activity complies with the activity condition and type of plant/unit.
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	The project is a green field power plant; thus, this criterion is not applicable.

⁹ The Project site is a forest land prior to the Project activity, so the project is green field project. (Project Description Document)

¹⁰ The electricity generation license.

Applicability conditions	Justification
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	
In case of Greenfield project activities applicable under paragraph 5 (a) above, the project participants shall demonstrate that the BESS was an integral part of the design of the renewable energy project activity (e.g. by referring to feasibility studies or investment decision documents);	The project activity is not applicable under paragraph 5 (a), which is given in Article 2 (a) in this table, since the project activity does not involve the integration of a BESS. Hence, this condition is N/A.
The BESS should be charged with electricity generated from the associated renewable energy power plant(s). Only during exigencies may the BESS be charged with electricity from the grid or a fossil fuel electricity generator. In such cases, the corresponding GHG emissions shall be accounted for as project emissions following the requirements under section 5.4.4. The charging using the grid or using fossil fuel electricity generator should not amount to more than 2 per cent of the electricity generated by the project renewable energy plant during a monitoring period. During the time periods (e.g. week(s), months(s)) when the BESS consumes more than 2 per cent of the electricity for charging, the project participant shall not be entitled to issuance of the certified emission reductions for the concerned periods of the monitoring period.	The project does not involve a BESS. Hence, this condition is N/A.
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), is greater than 4 W / m²; or (c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (3), is greater than 4 W / m²; or (d) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (3), is lower than or equal to 4 W / m², all of the following conditions shall apply: (i) The power density calculated using the total installed capacity of the integrated project, as per equation (4), is greater than 4 W / m²;	The project activity is not a hydropower plant. The criteria are not assessed.

Applicability conditions	Justification
(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 / m² shall be: a. Lower than or equal to 15 MW; and b. Less than 10 per cent of the total installed capacity of integrated hydro power project.	
In the case of integrated hydro power projects, project proponent shall: (a) Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or (b) Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore, this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum of five years prior to the implementation of the CDM project activity.	The project is not a integrated hydro power project. Hence, this condition is N/A.
In the case of integrated hydro power projects, project proponent shall: a) Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or b) Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore, this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum of five years prior to the implementation of the CDM project activity.	The project is not an integrated hydro power project. Hence, this condition is N/A.

Applicability conditions	Justification
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	The project does not involve switching from fossil fuels to renewable energy sources and is not a biomass fired power plant.
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 prior to the implementation of the project activity and undertaking business as usual maintenance”.	The project does not involve retrofits, rehabilitations, replacements, and it's not a capacity addition.
In addition, the applicability conditions included in the tools referred to below apply.¹¹	Applicability conditions included in the tools apply.

B.3. Project boundary

According to ACM0002, the spatial extent of the project boundary includes the project power plant/unit and all power plants/units connected physically to the electricity system, which the Turkish electricity grid, that the VER project power plant is connected to. The following diagram describes the project's spatial boundary.

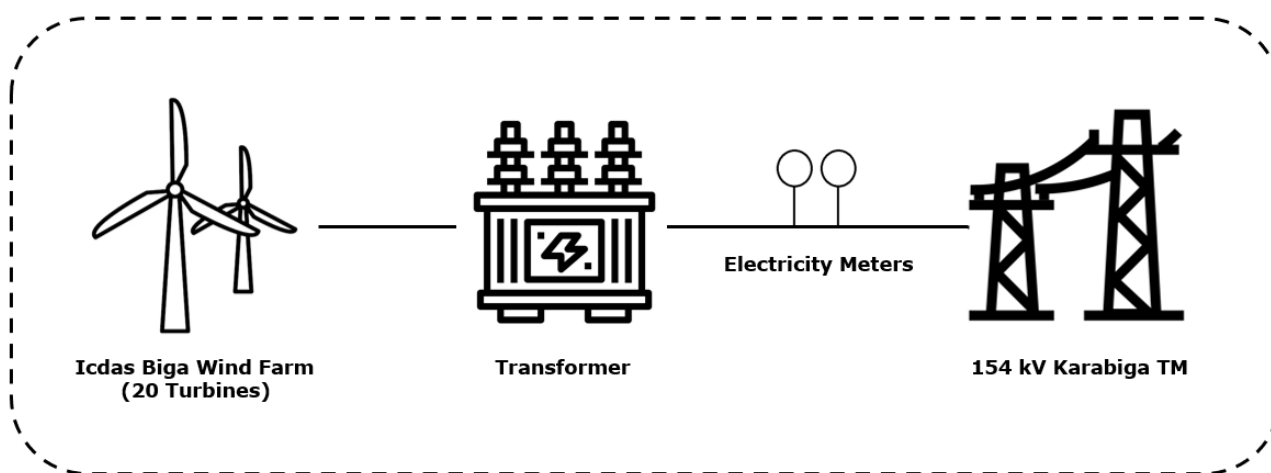


Figure 4 - Project boundary

¹¹ The condition in “TOOL02: Combined tool to identify the baseline scenario and demonstrate additionality” that all potential alternative scenarios to the proposed project activity must be available options to project participants; does not apply to this methodology, as this methodology only refers to some steps of this tool.

The greenhouse gases and emission sources included in or excluded from the project boundary are shown in Table 8.

Table 8 - Emission Sources

Source	GHGs	Included?	Justification / Explanation
Baseline scenario	CO ₂	Yes	According to ACM0002, CO ₂ is included in the project boundary because it is a main emission source
	CH ₄	No	According to ACM0002, CH ₄ is not included in the project boundary because it is a minor emission source
	N ₂ O	No	According to ACM0002, N ₂ O is not included in the project boundary because it is a minor emission source
Project scenario	For geothermal power plants, fugitive emissions of CH ₄ and CO ₂ from non-condensable gases contained in geothermal steam	CO ₂	No
		CH ₄	No
		N ₂ O	No
	CO ₂ emissions from combustion of fossil fuels for electricity generation in solar thermal power plants and geothermal power plants	CO ₂	No
		CH ₄	No
		N ₂ O	No
	For hydro power plants, emissions of CH ₄ from the reservoir	CO ₂	No
		CH ₄	No
		N ₂ O	No
	Emissions from charging of a BESS using power from the grid or from fossil fuel electricity generators.	CO ₂	No
		CH ₄	No
		N ₂ O	No

B.4. Establishment and description of baseline scenario

The proposed project activity includes the installation of 20 wind turbines. The electricity generated is delivered to the grid. Hence, according to the baseline methodology

ACM0002, since the project activity is the installation of a new grid-connected renewable power plant, the baseline scenario is as follows:

“Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the ‘Tool to calculate the emission factor for an electricity system’.”

According to ACM0002 (Version 21), if the project activity is the installation of a new grid connected renewable power plant, the baseline scenario is 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 “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.

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

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 compliant with Electricity Market Law with Number 4628 and dated 03/03/2001 and Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy with Number 5346 and dated 18/05/2005 (current legal framework, all required relevant regulations and laws). The current baseline complies with all relevant mandatory national and/or sectoral policies that came into effect after the submission of the project activity for validation and are still applicable at the time of requesting renewal of the crediting period.

Step 1.2: *Assess the impact of circumstances*

The baseline scenario identified at the validation of the project activity is the continuation of the current practice without any investment, an assessment of the changes in market characteristics at the time of the renewal of the crediting period is depicted as follows.

Turkish electricity generation is mainly composed of thermal power plants and the share of renewable resources; especially hydroelectric power plants have decreased significantly in recent years whereas share of wind power plants is still very low. Since Türkiye is an advanced developing country, there is an increasing demand for electricity which is fully expected to continue in the foreseeable future.

Year	Low Scenario		Base Scenario		High Scenario	
	Demand (GWh)	Growth Rate (%)	Demand (GWh)	Growth Rate (%)	Demand (GWh)	Growth Rate (%)
2022	308,903	3.1%	324,536	3.8%	340,810	7.9%
2023	317,755	2.9%	335,819	3.5%	354,446	4.0%
2024	329,911	3.8%	350,716	4.4%	371,927	4.9%
2025	344,265	4.4%	367,792	4.9%	391,806	5.3%
2026	357,757	3.9%	383,426	4.3%	409,551	4.5%
2027	369,703	3.3%	397,438	3.7%	425,790	4.0%
2028	378,902	2.5%	408,872	2.9%	439,739	3.3%
2029	389,682	2.8%	421,925	3.2%	455,387	3.6%
2030	400,825	2.9%	435,418	3.2%	471,572	3.6%
2031	415,042	3.5%	452,210	3.9%	491,224	4.2%

Figure 5 - Türkiye's electricity demand forecasts by TEİAŞ¹²

The trend in Türkiye to date and given historically slow development of alternative energy resources is to build an increasing number of thermal power plants in the future to satisfy the annual growth in energy consumption demand. Türkiye as an advanced developing nation has looked at dealing with energy security by developing and constructing high-capacity coal and natural gas power plants (Figure 7). The development of thermal power plants has been also encouraged by the large natural resource availability in Türkiye, especially the abundance of economically accessible lignite¹³.

¹² <https://www.pwc.com.tr/tr/sektorler/enerji/overview-of-turkish-electricity-market-2023.pdf>

¹³ General Directorate of Mineral Research and Exploration of Türkiye
<https://www.mta.gov.tr/v3.0/arastirmalar/komur-arama-arastirmalari>

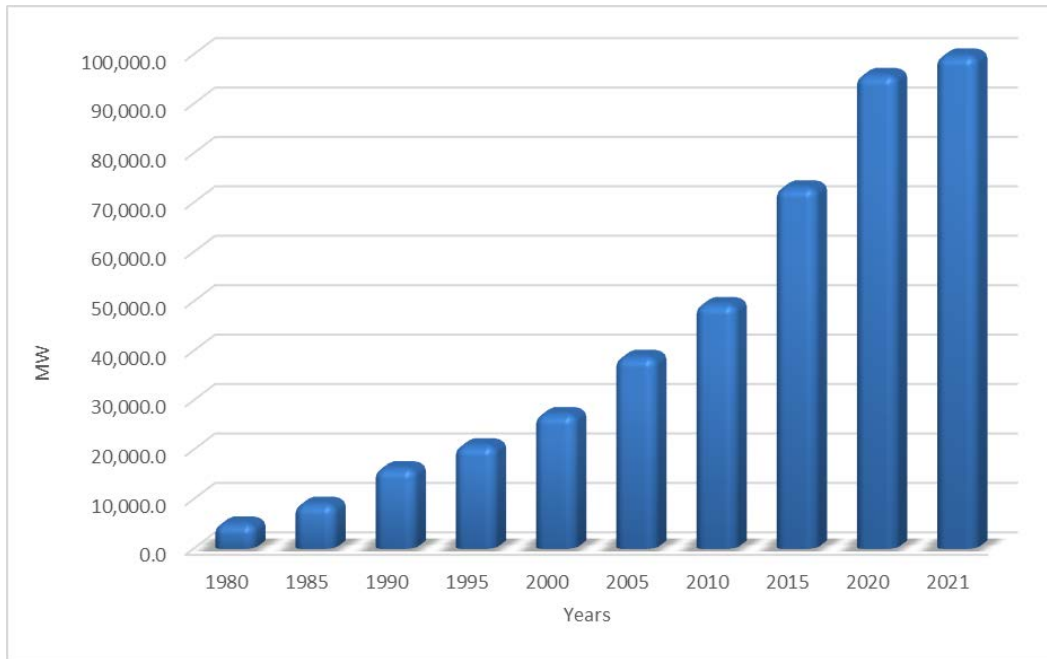


Figure 6 - Development of Türkiye's Installed Capacity¹⁴

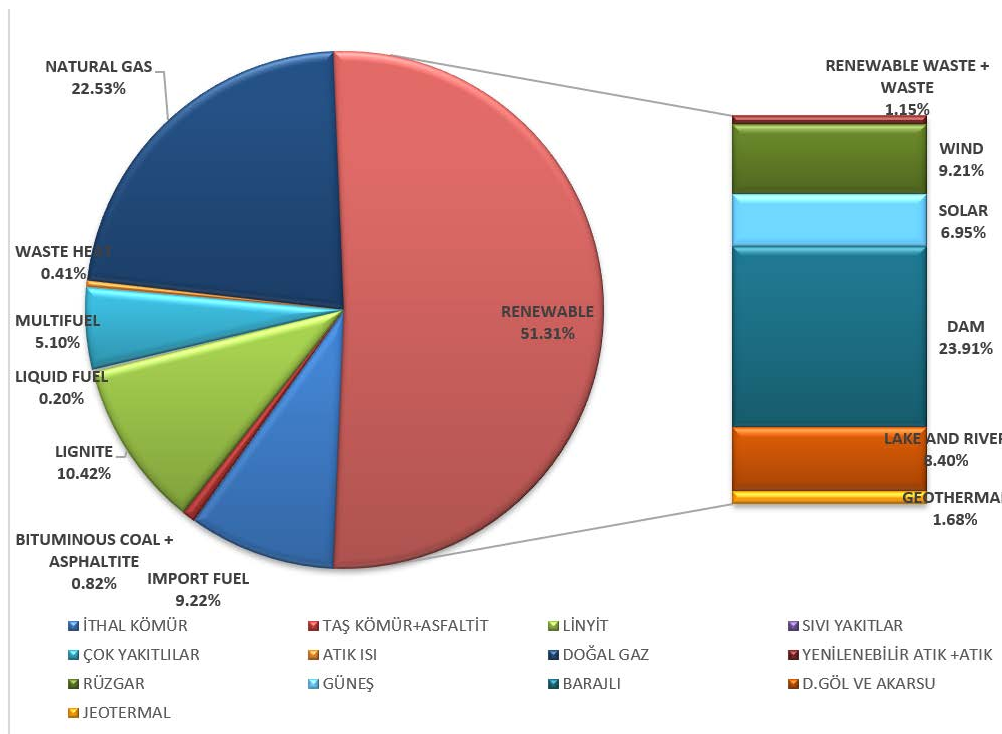


Figure 7 - Distribution of installed capacity by primary energy resources¹⁵

¹⁴ Latest available data provided by TEİAŞ about installed capacity in Turkey <https://webim.teias.gov.tr/file/ec2b6de1-4173-4a49-90fc-40e8a8b8ab9f?download>

¹⁵ <https://webapi.teias.gov.tr/file/39abb292-4b3e-4e70-9e08-914d0ba9bd43?download>

In the absence of the project activity, the same amount of electricity is required to be supplied via either the current power plants or by increasing the number of thermal power plants thus increasing GHG emissions.

According to the TEIAS statistics¹⁶, share of WWP's in total installed capacity of Türkiye is about 9.21% (Figure 7) whereas share of WPP's in total generation is only 8.10%¹⁷. However, when the historical data is examined, it is observed that total installed capacity of thermal power plants has shown a rapid growth (Figure 6) in parallel with the demand for electricity whereas wind power generation has grown at a much slower rate.

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 was the continuation of grid-connected electricity generation from renewable sources. Under this scenario, new investment of an additional wind turbine generator was made.

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

The emissions reduction calculations are based on two main parameters: the energy produced and the grid emission factor. These parameters have been revised in relevant sections of this document.

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

Step 2.1: *Update the current baseline*

The project baseline for the next crediting period is the use of electricity from the national grid. This is in line with the latest version of the approved applicable methodology ACM0002 version 21.0.

Step 2.2: *Update the data and parameters*

The grid emission factor has been updated according to the latest version of "Tool to calculate the emission factor for an electricity system (Version 07.0)". According to this tool, three options has been provided. The PP used Option 1 as the national EF published by the Ministry of Energy and Natural Resources. Detailed explanations are provided in the following sections of this document.

B.5. Demonstration of additionality

Project follows the methodology ACM0002 Version 21.0, that is an approved methodology under Gold Standard. For the demonstration of additionality, "Tool to for the Demonstration and Assessment of Additionality Version 7.0.0" has been used. The

¹⁶

[http://www.teias.gov.tr/T%C3%BCrkiyeElektrik%C4%B0statistikleri/istatistik2010/front%20page%202010%C3%A7i%C3%A7ek%20kitap/kguc\(1-12\)/3.xls](http://www.teias.gov.tr/T%C3%BCrkiyeElektrik%C4%B0statistikleri/istatistik2010/front%20page%202010%C3%A7i%C3%A7ek%20kitap/kguc(1-12)/3.xls)

¹⁷ <https://webim.teias.gov.tr/file/56774b2a-087b-4431-9479-29f1cb5d0d87?download>

additionality had been evaluated during the time of the first validation¹⁸ and that information will be used again during the second crediting period. However, financial analysis has been updated in the scope of design change which involves capacity extension. Details of the assessment have been provided in Appendix 4.

Benchmark determined during registration has been considered. As per “Sub-step 2b Option III. Apply benchmark analysis” in the registered PDD;

“For the benchmark analysis, the IRR is considered the most suitable indicator according to the project type. The equity IRR will be used, since it includes all in and out cash flows.

(...)

The threshold returns are based on comparable investments adjusted for risk and transaction costs that are more difficult to quantify. In Turkey a typical developer of wind expects equity IRRs of 15 percent according to World Bank, - Project Appraisal Document on a IBRD Loan and a Proposed Loan from Clean Technology Fund to TSKB and TKB with the Guarantee of Turkey, May 2009 (page 82, table 11.5)¹⁹“

Before the extension, the firm capacity of the plant was 60 MW and consisted of 19 turbines with 3.2 MW capacity. The average annual electricity generation between years 2016 and 2021 is 153.674 GWh to be fed to the national grid. For the second crediting period, 99,611 tCO₂/year annual reduction was expected for a total of 657,982 tCO₂ for 6 years and 9 months before the extension. After the extension, the project will install a new wind turbine generator with a capacity of 7 MWm/3.8 MWe and the generation license has been revised as 67.8 MWm/63.8 MWe. Annual electricity generation is estimated as 174,609 MWh/year (Annual average on the crediting period 169,512.49 MWh/year) as per the micro siting studies. Estimated generation corresponds to 113,181 tCO₂/year (Annual average on the crediting period 109,877 tCO₂) avoided annually.

Table 9 – Main Financial Parameters Used for Investment Analysis

Parameters	Unit	Data Value
Installed Capacity ²⁰	MWe	63.8
Grid Connected output ²¹	GWh/year	174.6
Capital Investment ²²	Million \$	~72.4
Generation Expenses	Million \$/year	~2.1

¹⁸ Please see the approved PDD from the first crediting period.

¹⁹ Available at: http://www-wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/2009/05/11/000333037_20090511030724/Rendere d/PDF/468080PAD0P112101Official0Use0Only1.pdf

²⁰ Generation License

²¹ Generation Estimation Study

²² Financial Assessment Document prepared by project owner

Period of Assessment ²³	Years	20
Energy Sale Price (average) ²⁴	\$ Cents/kWh	6.75
Expected VERs price ²⁵	\$/ tCO ₂ e	3

Equity IRR during the registration was calculated as 5.0% without the carbon revenue while it is increased to 5.3% after the extension. The equity IRR is below the benchmark after design change. All expenses and revenues were increased as per the capacity extension ratio. 1st Crediting Period is between 16.10.2015 - 16.10.2022 and 2nd Crediting Period is between 10.03.2023 – 16.10.2029. Details are provided in Financial Assessment Excel Sheet.

B.5.1 Prior Consideration

As per the Principles & Requirements Version 1.2, 4.1.49 (c), “A project with a Certified Design requesting to include a new technology/measures shall submit the request for approval of design change to Gold Standard within one year of the start date of the proposed technology/measures (design change component).” The project has been submitted on time on 13/03/2024. Start date for design change is 29/03/2023, date of the turbine supply agreement

B.5.2 Ongoing Financial Need

The revenue from Gold Standard certification is still material to the ongoing sustainability of the project given the low demands for the VERs with even lower prices in Turkey. Although already issued VERs provided support to the ongoing financial sustainability of the Project, the revenue was not high as expected. In 2016, the revenues from the VERs was only around 1% of the total RES revenues for the company. While the revenues from electricity sales were around 165 M USD, the project was only able to achieve VER revenues of 21,000 USD. In addition, the project is not included in the YEKDEM since the beginning of 2023 and no revenue is gained through that. Therefore, it can be said that the Project still needs the financial support that may be beneficial for the Project Owner.

Equity IRR value demonstrates and highlights the ongoing financial need of the project. This IRR value represents the most optimistic scenario in terms of electricity generation whereas electricity tariff is expected to increase due to increasing electricity demand so that the investment becomes attractive. However, expectations have not been realized yet due to the market conditions.

²³ The expected lifetime of the main equipment

²⁴ YEKDEM Energy Prices + estimate

²⁵ <https://www.cbd.int/financial/2017docs/carbonmarket2017.pdf>

Considering that wind energy is always shaped by atmospheric events that have a highly variable data set, the targeted electricity generation amount may not be met as similar to the first crediting period. Thus, carbon revenue has a significant affect in this respect in terms of decreasing the period for return on investment.

The investment and sensitivity analysis shows that the VER revenues improve the financial indicators of the Project remarkably. Considering that figures above are based on a higher price rather than the government guaranteed floor price, optimistic estimations for yearly generation and that those figures do not reflect the risk for investment, role of carbon income is a most significant number to enable the project to proceed.

During the first crediting period, the following VERs has been issued as follows:

Oct 17, 2015 — Dec 31, 2015: 6,057 GS VERs (issued)
 Jan 01, 2016 — Oct 31, 2016: 65,926 GS VERs (issued)
 Apr 22, 2018 — Dec 31, 2018: 58,082 GS VERs (issued)
 Jan 01, 2019 — Dec 31, 2019: 77,073 GS VERs (issued)
 Jan 01, 2020 — Dec 31, 2020: 87,607 GS VERs (issued)
 Jan 01, 2021 — Apr 20, 2021: 23,888 GS VERs (issued)
 Apr 21, 2021 — Dec 31, 2021: 55,632 GS VERs (issued)
 Jan 01, 2022 — Oct 16, 2012: 62,699 GS VERs (issued)

B.6. Sustainable Development Goals (SDG) outcomes

Relevant Target/Indicator for each of the three SDGs

SDG Targeted	Most relevant SDG Target	SDG Impact
		Indicator (Proposed or SDG Indicator)
4 Quality Education	By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and Entrepreneurship By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications	Human and institutional capacity - Number of local primary and high school students who get scholarship - Number of youths educated at the water sport club - Quantity of physical support to the local schools/local communities.

	technology, technical, engineering and scientific programmes, in developed countries and other developing countries	
7 Affordable and Clean Energy	By 2030, increase substantially the share of renewable energy in the global energy mix	Access to affordable and clean energy services: 1. Amount of electricity generated from wind power
8 Decent Work and Economic Growth	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 By 2020, substantially reduce the proportion of youth not in employment, education or training	Quality employment: - Training records of employees during operation period Quantitative employment and income generation: - Number of jobs created during operation period Human and institutional capacity & Technology transfer and technological self-reliance - Number of trainings carried out for employees of the power plant
13 Climate Action	Integrate climate change measures into national policies, strategies and planning	Emission reductions in tCO ₂

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

SDG 4 - Quality Education

The project creates positive impact on **SDG 4 - Quality Education** by improving human capacity, especially for the young people. Scholarships are being provided for successful students to ensure their education. Physical support for local schools is provided. Informative activities are being organised for students on environment. Water sports activities for children and teenagers are being provided at the ICDAŞ sport club. The quantitate indicators for this SDG are the number of local primary and high school students who get scholarship; the number of youths educated at the water sport club and the quantity of physical support to the local schools/local communities. These parameters are monitored by the project owner. **The list of students and the records**

of financial aids are kept at the project owner's financial records. The records will be provided to the DOE for each year during verifications.

Monthly scholarship for at least 8 local students and 40 local teenagers trained at ICDAŞ sailing and swimming school

SDG 7 - Affordable and Clean Energy

The electricity generation from a renewable resource will help Turkey to reduce the dependency on imported fossil fuel for electricity generation. In order to estimate the impact on SDG 7 - Affordable and Clean Energy, **the quantity of electricity generated** is monitored continuously. The data measured via main meter is read every hour by the technicians and recorded on an excel file for the records of the project owner. In addition to company records, the hourly data is saved automatically on TEİAŞ's load dispatch centre's online system via remote reading of the meters. The monthly records of TEİAŞ and project owner are used for emission reduction calculations.

169,512.49 MWh renewable energy annually

SDG 8 - Decent Work and Economic Growth

The project has also a positive impact on the SDG 8 - Decent Work and Economic Growth. The impact is estimated with the indicators of quality of employment and quantitative employment and income generation. The quality of employment is estimated by the **training records provided to the employees of the plant**. To provide a safe and healthy labour environment for the workers the project owner took necessary precautions during the operation phase according to Work Health and Safety Law. During construction and the monitoring period the health and safety activities are managed by the equipment supplier. The equipment supplier has an employee health and safety plan¹⁹ (EHS) and took all the necessary precautions in line with that plan. No severe injury has been recorded during the monitoring period. In addition to the equipment supplier's plan the project owner also has Labour Safety Instructions and Emergency Plan for the wind farm. The project owner holds OHSAS 8001 certification. Every year the training requirements are reviewed, and a training plan is prepared by the occupational safety specialist. The staff of the wind farm plant was trained on working aloft at wind farms (GWO BST) and usage of wind turbine elevators (HAILO). Moreover, the fair wage and working hours conditions are determined by the Ministry of Labour and Social Security in the Labour Law (No: 4857) and the project owner complies with the requirements of this labour law. **The quantitative employment is measured with number of Jobs created due to the project activity**. 13 people are working at the operation of the wind farm. The education level of the operating employees are 2 university graduates, 6 vocational high school graduate, 4 technical high school and a primary school graduate and one of the operation team members is a female electronical engineer. 4 of the employees are graduated from the vocational and technical high schools of Biga, Çanakkale.

SDG 13: Climate Action

In order to estimate the impact on SDG 13: Climate Action, ACM0002, “Large-scale Consolidated Methodology: Grid-connected electricity generation from renewable sources”, version 21.0 is used and the project emissions, baseline emissions, leakage and resulting emission reductions are calculated.

109,877 tCO₂ emission reductions annually

For developing the baseline and calculating the emission reductions for the proposed project activity, “Tool to calculate the emission factor of an electricity system” version 07.0 is used.

The emission reductions are calculated based on the below formula:

$$ER_y = BE_y - PE_y - LE_y$$

Where:

ER_y = Emission reductions in year y (tCO₂/yr)

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

PE_y = Project emissions in year y (tCO₂/yr)

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

Project Emissions

As the proposed project activity is a new grid-connected wind power plant. For this reason, PE_y is considered as “0” in line with ACM0002 Version 21.0

$$PE_y = 0$$

Leakage

Leakage emission (LE_y) is considered as “0” as suggested in ACM0002 Version 21.0

$$LE_y = 0$$

Baseline Emissions

The baseline emissions are calculated as follows:

$$BE_y = EG_{\text{facility},y} * EF_{\text{CO}_2,i,y}$$

Where:

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

$EG_{m,y}$ = Net quantity of electricity generated and delivered to the grid by power unit m in year y (MWh)

$EF_{\text{CO}_2,i,y}$ = CO₂ emission factor of fuel type i in year y (t CO₂/MWh)

Option 1 has been selected according the “Tool to Calculate the Emission Factor for an Electricity System v 07.0.0”. Option 1 allows the use of a national grid EF. The national EF published by the Ministry of Energy and Natural Resources is used as **0.6482 tCO₂/MWh**²⁶.

Then annual estimated impact on SDG 13: Climate Action is;

169,512.49 MWh/year * 0.6482 tCO₂/MWh = 109,877 tCO₂ per annum.

B.6.2 Data and parameters fixed ex ante

SDG13

Data/parameter	EF_{grid,CM,y}
Unit	tCO ₂ /MWh
Description	Combined margin CO ₂ emission factor for the project electricity system in year y
Source of data	Republic of Turkey Ministry of Energy and Natural Resources ²⁶
Value(s) applied	0.6482
Choice of data or Measurement methods and procedures	Official national data
Purpose of data	Baseline emission calculation
Additional comment	13.2: “Integrate climate change measures into national policies, strategies and planning” 13.2.1 Reduction in GHGs emissions

B.6.3 Ex ante estimation of SDG Impact

Emission Reduction

$$ER_y = BE_y - PE_y - LE_y$$

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

Where:

ER_y = Emission reductions in year y (tCO₂/yr)

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

PE_y = Project emissions in year y (tCO₂/yr)

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

Project Emissions

As the proposed project activity is a new grid-connected wind power plant. For this reason, PE_y is considered as “0” in line with ACM0002 Version 21.0

$PE_y = 0$

Leakage

Leakage emission (LE_y) is considered as “0” as suggested in ACM0002 Version 21.0

$LE_y = 0$

Baseline Emissions

The baseline emissions are calculated as follows:

$BE_y = EG_{\text{facility},y} * EF_{\text{CO}_2,i,y}$

Where:

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

$EG_{m,y}$ = Net quantity of electricity generated and delivered to the grid by power unit m in year y (MWh)

$EF_{\text{CO}_2,i,y}$ = CO₂ emission factor of fuel type i in year y (t CO₂/MWh)

The national EF published by the Ministry of Energy and Natural Resources is used as 0.6482 tCO₂/MWh²⁷.

Annual estimated impact on SDG 13: Climate Action is;

169,512.49 MWh/year * 0.6482 tCO₂/MWh = **109,877 tCO₂ per annum.**

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

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

SDG 7

Year	Baseline estimate	Project estimate	Net benefit MWh
2023 (10.03.2023 – 31.12.2023)	0	125,044.32	125,044.32
2024	0	158,907.75	158,907.75
2025	0	174,609.00	174,609.00
2026	0	174,609.00	174,609.00
2027	0	174,609.00	174,609.00
2028	0	174,609.00	174,609.00
2029 (01.01.2029 – 16.10.2029)	0	138,252.06	138,252.06
Total	0	1,120,640.13	1,120,640.13
Total number of crediting years	6 years 7 months (2413 days)		
Annual average over the crediting period	0	169,512.49	169,512.49

SDG 13

Year	Estimation of baseline emissions in tons of CO ₂ e	Estimation of project emissions in tons of CO ₂ e	Estimation of leakage emissions in tons of CO ₂ e	Estimation emission reductions in tons of CO ₂ e
2023 (10.03.2023 – 31.12.2023)	81,053	0	0	81,053
2024	103,004	0	0	103,004
2025	113,181	0	0	113,181
2026	113,181	0	0	113,181
2027	113,181	0	0	113,181
2028	113,181	0	0	113,181
2029 (01.01.2029 – 16.10.2029)	89,614	0	0	89,614
Total	726,395	0	0	726,395
Total number of crediting years	6 years 7 months (2413 days)			

Annual average over the crediting period	109,877	0	0	109,877
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SDG 8

Year	Baseline estimate (worker)	Project estimate (worker)	Net benefit (worker)
2023 (10.03.2023 – 31.12.2023)	0	13	13
2024	0	13	13
2025	0	13	13
2026	0	13	13
2027	0	13	13
2028	0	13	13
2029 (01.01.2029 – 16.10.2029)	0	13	13
Total	0	13	13
Total number of crediting years	6 years 7 months (2413 days)		
Annual average over the crediting period	0	13	13

B.7. Monitoring plan

B.7.1 Data and parameters to be monitored

SDG 13

Data / Parameter	<i>ER_y</i>
Unit	tCO ₂ /yr
Description	Emission reduction achieved in year y
Source of data	Measurement, official national EF data and calculation

Value(s) applied	Approximately 109,877 tCO ₂ per annum
Measurement methods and procedures	ACM0002, “Large-scale Consolidated Methodology: Grid-connected electricity generation from renewable sources”, version 21.0 was used and the project emissions, baseline emissions, leakage and resulting emission reductions are calculated. The formulas are as follows; $ER_y = BE_y - PE_y$ Since y $PE_y = 0$ and $LE_y = 0$ Then $ER_y = BE_y$ $BE_y = EF_y * EG_{facility,y}$
Monitoring frequency	Continuous measuring, monthly recording
QA/QC procedures	The emission reduction calculations are based on two parameters EF_y and $EG_{facility,y}$. EF_y is fixed for the first crediting period and officially published by the MoENR. The QA/QC procedures for $EG_{facility,y}$ is provided in the next table.
Purpose of data	To monitor the contribution of the project to SDG 13: Climate Action through baseline calculation
Additional comment	The details of emission reduction calculations are provided at section B.6.3.

SDG 7

Data / Parameter	$EG_{pj,grid,y}$				
Unit	MWh/yr				
Description	Quantity of net electricity generation supplied by the project to the grid in year y				
Source of data	Main source: Meter readings Cross-check method: EPIAS screenshots				
Value(s) applied	Approximately 169,512.49 MWh/year				
Measurement methods and procedures	The electricity generation is measured via a three-phase electricity meter and a standby meter in case of failures of the main meter, which are in control of TEİAŞ. The meters were replaced with the new ones and calibrated on 25/05/2022. <table border="1"> <tr> <td></td><td>Main Meter</td><td>Control Meter</td></tr> </table>			Main Meter	Control Meter
	Main Meter	Control Meter			

	Serial No.	10879418	10879419
	Brand	EMH	EMH
	Type	LZQJ-XC	LZQJ-XC
	Class	0.2S (active) 0.5S (reactive)	0.2S (active) 0.5S (reactive)
	First index date	25/05/2022	25/05/2022
	Status	Calibrated	Calibrated
Monitoring frequency	The data is measured continuously and recorded hourly and monthly		
QA/QC procedures	The data measured via main meter is read every hour by the technicians and recorded on an excel file for the records of the project owner. In addition to company records, the electricity generation of the plant is calculated based on meter readings and crosschecked with EPIAS records that are the basis of sold electricity. The quality assurance of the meters are meters by annual periodic inspections, which includes; - Testing of the meters to confirm that the measurement accuracy within the allowed range. - Controlling of the measurement equipment - Physical control of the equipment The meters will be renewed every 10 years. The requirements of periodic inspections are gathered from the system usage agreement between TEİAŞ and project owner. Both meters are subject to national metrological control legislation and calibrated before installation. The sanity tests are applied every year.		
Purpose of data	Baseline emission calculations		
Additional comment	7.2: "By 2030, increase substantially the share of renewable energy in the global energy mix." 7.2.1 Renewable energy generation		

Safeguarding Principle 9.10 - High Conservation Value Areas and Critical Habitats

Data / Parameter	Biodiversity / Number of affected birds and mammals
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Unit	-
Description	Number of affected birds and mammals Progress of commitments in the commitment letter.
Source of data	The monitoring records carried out by expert academicians and the biologist working for the project owner Assessment reviews of the DNCNP on the monitoring process.
Value(s) applied	Estimated to be zero (0)
Measurement methods and procedures	-Carry out monitoring activities the bird migrations and mammal species -Employment of a bird watcher or biologist to monitor the bird migrations -Shut down the turbines during the bird migrations -Carry out any required mitigation measures upon the request of DNCNP other than the measures stated in the commitment letter of the project owner to the DNCNP on 10.02.2015.
Monitoring frequency	The monitoring activities are carried every migration period (spring and fall) by full day observations for at least 15 days.
QA/QC procedures	During the bird immigration periods the number of birds affected by the turbines are monitored for two years and a report are sent to DNCNP every six months. The DNCNP assessed the monitoring reports and provided feedback about the monitoring.
Purpose of data	Maintain the current habitat and avoid harming birds on migration.
Additional comment	-

SDG 4

Data / Parameter	Human and institutional capacity / Number students provided scholarship, sports training and quantity of support provided.
Unit	Number of person/people or TL value of support
Description	The project owner provides scholarships and sport trainings at İçdaş Sport Club for local students and physical support for local schools and villages.

Source of data	Project owner financial and operational records
Value(s) applied	It is planned to provide scholarships to at least 8 students and to provide sports training to at least 40 students through the sports school located within the project borders.
Measurement methods and procedures	The records of the number and list of students attending to the Içdaş Sport Club and scholarship awards are kept by the project owner. Moreover, physical and financial aids for local schools and villages are also kept by the project owner. The accounting records are used to calculate the parameters.
Monitoring frequency	The records are kept as they occur. The reporting is provided annually
QA/QC procedures	The list of students who attend the Içdaş sailing/swimming schools and the financial value of the supports are provided to the VVB during each verification.
Purpose of data	To monitor the contribution of the project to SDG 4: Quality Education
Additional comment	-

SDG 8

Data / Parameter	Number of Jobs created due to the project activity
Unit	-
Description	Number of Jobs created due to the project activity during the operation phase.
Source of data	Official records from Social Security Institution
Value(s) applied	It is planned to provide employment to at least 13 people from the local people in the project area.
Measurement methods and procedures	In order to contribute the SDG, the project owner; - Set priority to local people for any new job opportunity.

	- Is in contact with local education centres (high schools, universities) to develop more education courses to train more local people and create opportunities to create them get a more qualified job. The number of employees working for the project and their professional background information are kept by the human resources department.
Monitoring frequency	The records are being kept by the human resources department and reported annually.
QA/QC procedures	The records of human resources records are supported by the official records of Social Security Institution.
Purpose of data	To monitor the contribution of the project to SDG 8 – Decent work and Economic Growth
Additional comment	-

Safeguarding Principle 6.1 - Labour Rights

Data / Parameter	Principle 6.1 Labour Rights - Quality of Employment
Unit	Number of certificates issued/trainings provided
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 Occupational injury records, if any
Value(s) applied	All staff to be trained for health and safety issues
Measurement methods and procedures	All employees will attend trainings on health & safety. Training attendance list and/or certificates will be present for monitoring. Complaints will be monitored in order to sustain an environment where human rights are never violated and to ensure inclusion and participation of all employees. Trainings related to emergency response procedures will also be provided to the employees.
Monitoring frequency	Annually
QA/QC procedures	The training programmes help increase the efficiency of

	the workforce and provides employees skilled at their job. All employees will be trained and certified for the required positions. All employees will attend trainings on first aid and health & safety. Training Records (including H&S) & Other Certificates are required for certain professions. HSE records will be kept in case of any injury happened on-site. For positions that require specific skills staff will either be trained, or certified staff will be recruited. HSE records will be kept annually and provided if there is any injury at the site. 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 6.1.
Additional comment	-

Safeguarding Principle 9.5 - Hazardous and Non-hazardous Waste

Data / Parameter	Amount of waste controlled
Unit	Kg
Description	Amount of waste oil and waste lubricants
Source of data	Official records
Value(s) applied	Around 2000 kg annually
Measurement methods and procedures	The waste oil and waste lubricants occur during the maintenance of wind turbines will be collected and not discharged at the site. These liquid wastes are classified as hazardous waste according to the regulation on control of hazardous wastes. The collected waste oil and waste lubricants will be transferred and disposed by the companies having relevant licences.
Monitoring frequency	Yearly Data is recorded at the time each waste occurs. It is sent to the licensed recycling facility every 6 months. This parameter will be monitored yearly for every verification.
QA/QC procedures	-
Purpose of data	To monitor the contribution of the project to Safeguarding Principle 9.5

Additional comment	-
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B.7.2 Sampling plan

N/A

B.7.3 Other elements of monitoring plan

The most important parameter to estimate the emission reductions is the quantity of net electricity generation supplied by the project plan to the grid every year. The monitoring of the net electricity generation is online and continuous. The net electricity generation are being monitored via two meters, one main and one standby, and the metering are recorded by TEİAŞ remotely. The hourly readings are recorded by the technicians of the project owner every hour to the SCADA system and the readings of the TEİAŞ and project owner are crosschecked with EPIAS records that are the basis of sold electricity.

Calibration of the metering devices is under TEİAŞ responsibility and sealed before the commissioning of the power plant. The meters are calibrated by TEİAŞ when there is an inconsistency between two devices. The calibration and maintenance of the meters will be carried out in line with the by law on Metering and Metering Devices²⁸. Calibration has been made every 10 year in line with the national regulation.

Emission reduction will be calculated via meter readings and EPIAS will be used for cross-check.

Generation data is recorded by two metering devices continuously as one of them is main and the other one is spare. The spare meter is only used when a problem occurs in the main meter. These records provide the data for the monthly invoicing to TEİAŞ which is an authorized local distribution company in the region. Connection agreement and system use agreement are made between the project owner and this company.

Two calibrated meters backup each other. Maintenance and calibration of the metering devices are done by TEİAŞ. If there is a significant difference between the readings of two devices or a breakdown of a meter, 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

²⁸ <https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=6381&MevzuatTur=7&MevzuatTertip=5>

meters as 0.2S or 0.5S depending on the capacity of the circuit as given in document in link (<http://www.epdk.gov.tr/web/elektrik-piyasasi-dairesi/44>). Calibration date of the meters is 25/05/2022.

All data is kept for at least two years after the end of the crediting period or until the last issuance of VERs for the project activity, whichever is later for QA/QC purposes.

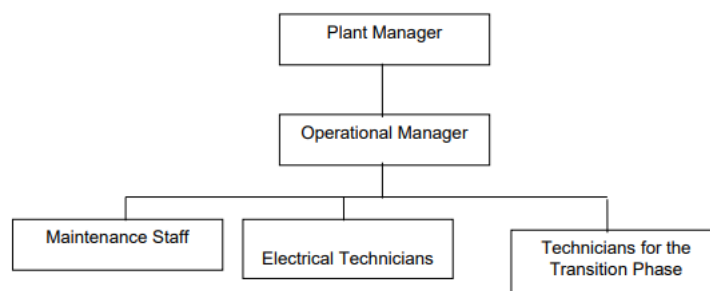
Table 10 - Technical Information on Electricity Meters

	Main Meter	Control Meter
Serial No.	10879418	10879419
Brand	EMH	EMH
Type	LZQJ-XC	LZQJ-XC
Class	0.2S (active) 0.5S (reactive)	0.2S (active) 0.5S (reactive)
First index date	25/05/2022	25/05/2022
Status	Calibrated	Calibrated

Generation data collected during the crediting period will be submitted to GTE who will be responsible for calculating the emission reduction subject to verification. Generation data will be used to prepare monitoring reports which will be used to determine the vintage from the project activity. These reports will be submitted to the duly authorized and appointed "Validation/Verification Body" Operational Entity 'VVB' before each verification period. In order to keep the monitoring system continuous and reliable there are around 13 people working with the following qualifications:

- Eight technicians who will work on three shifts and monitor the system and keep the records.
- Two management staff for operational control.
- Two workers for the maintenance.

The management structure is also demonstrated at the below Figure.



According to Gold Standard continuous input / grievance mechanism rules, the request and complaints from the local stakeholders are considered during the monitoring period.

As agreed at the local stakeholder meeting, the Continuous Input / Grievance Expression Process Book are located at the Headman's offices in neighbor villages (Örtülüce, Çakırlı, Değirmencik, Aksaz and Kemer). In addition to the Continuous Input / Grievance Expression Process Book, the contact person details of İçdaş is also available. The Headmen of the villages provide regular feedbacks on the continuous inputs and grievance expression. Each request is evaluated by the project owner and feedback is provided to the stakeholders. If the request/grievance cannot be considered/solved, the underlying reasons are explained.

SECTION C. DURATION AND CREDITING PERIOD

C.1. Duration of project

C.1.1 Start date of project

9.12.2014²⁹. The start date of the design change is 29.03.2023, Turbine Agreement for the additional turbine.

C.1.2 Expected operational lifetime of project

The expected lifetime of the project activity is 20 years.

C.2. Crediting period of project

C.2.1 Start date of crediting period

First crediting period: 17.10.2015 – 16.10.2022

Second crediting period: 10.03.2023 – 16.10.2029

C.2.2 Total length of crediting period

21 years (3 periods of 7 years)

Second crediting period is 6 years 7 months long.

SECTION D. SUMMARY OF SAFEGUARDING PRINCIPLES AND GENDER SENSITIVE ASSESSMENT

D.1 Safeguarding Principles that will be monitored

A completed Safeguarding Principles Assessment is presented in [Appendix 1](#).

Principles	Mitigation Measures added to the Monitoring Plan
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²⁹ Please see the approved PDD from the first crediting period.

Principle 6.1 Labor Rights

It will be ensured that all employees have social security and receive their full salary on time. All employees will be trained and certified for the required positions. All employees will attend trainings on first aid and health & safety. Training Records (including H&S) & Other Certificates are required for certain professions. HSE records will be kept in case of any injury happened on-site. For positions that require specific skills (such as high voltage equipment) staff will either be trained, or certified staff will be recruited. HSE records will be kept annually and provided if there is any injury at the site. The training programs 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.

**Principle 9.10
High Conservation
Value Areas and
Critical
Habitats**

During the bird immigration periods the number of birds affected by the turbines are monitored for two years and a report are sent to DNCNP every six months.
The DNCNP assessed the monitoring reports and provided feedback about the monitoring.

**Principle 9.5
Hazardous and Non-
hazardous Waste**

The waste oil and waste lubricants occur during the maintenance of wind turbines will be collected and not discharged at the site. These liquid wastes are classified as hazardous waste according to the regulation on control of hazardous wastes. The collected waste oil and waste lubricants will be transferred and disposed by the companies having relevant licences. Waste oil will be disposed in line with regulation #26952 on control of waste oils.

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

Question 1 - Explain how the project reflects the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy?	The project does not have a specific aspect for empowerment of women; however, the project owner is against any kind of discrimination in employment³⁰. The women are encouraged during the public consultation process to provide feedback on the project. The project does not specifically promote gender equality. However, the girls are equally treated for the selection of scholarship awards and sailing/swimming school. The project does not involve any kind of discrimination. The project being a wind power project is not gender sensitive project. The project does not adversely impact women or men.
Question 2 - Explain how the project aligns with existing country policies, strategies and best practices	The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation, or any other basis. Turkey is party to Convention on Discrimination since 1972 to prevent any form of discrimination. The project owner respects Article 5/8425 of Labour Law; which states no discrimination based on gender, race, religion, sexual orientation or any other basis is allowed.

³⁰ <https://www.icdas.com.tr/PageGalleryFiles/PdfFiles/%C4%B0%C3%87DA%C5%9E%202018%20S%C3%BCrd%C3%BCr%C3%BClebilirlik%20Raporu.pdf>, p. 40

Question 3 - Is an Expert required for the Gender Safeguarding Principles & Requirements?	No
Question 4 - Is an Expert required to assist with Gender issues at the Stakeholder Consultation?	No

SECTION E. SUMMARY OF LOCAL STAKEHOLDER CONSULTATION

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

E.1 Summary of stakeholder mitigation measures

In accordance with “Gold standard procedure for the renewal of a crediting period”, Project participants shall discuss if and why there is or is not a need to conduct a complementary stakeholder consultation for the renewal of the crediting period. The PP did not conduct a complementary stakeholder consultation for the renewal of the crediting period for the following reasons:

- Both Çakırlı and Aksaz villages have stated that there has not been any feedback or suggestion by the villagers. Written statements have been submitted as reference documents.
- Prior to the first credit period, there were meetings with several stakeholders including the Project management, municipality responsables and local people. Stakeholders declared their satisfaction with operation of plants. Stakeholders also added that the Project would contribute to the social and economic development of the region and Turkey.
- The project has been operated since 2015 in accordance with the registered PDD. There has been no difference between the first crediting period and the second crediting period in terms of the project operation. Also, there is no change in the project boundary or the impact area.
- The previous and ongoing verifications of the project have shown that the project has been operated in accordance with relevant Gold Standard requirements. Therefore, no complimentary stakeholder consultation meeting was held.

Before the start of first crediting period, As required by the Gold Standard an Initial Stakeholder Consultation (ISC) has been undertaken. The consultation meeting was held on 24 May 2012 in Aksaz Village, Biga, Çanakkale. Full report is presented to the VVB at the time of first crediting period. All the stakeholders were asked to comment on the project in the invitation letters if they were unable to attend the stakeholder consultation meeting. None of the stakeholders, who did not attend the meeting, have sent any feedback yet. However, they will be requested to comment once more during the stakeholder feedback round.

During the consultation process the following documents were made publicly available for two months between the above given dates. The documents were:

- The complete PDD
- A non-technical summary of the project

The consultation process started by identifying the relevant stakeholders, then the relevant documents were made available on the website, and on the local newspapers and stakeholders were asked to provide feedback through e-mail and fax. The documents were delivered by hand to the mayors of the villages since access to the internet might not be readily available for use. Also, hard copies of the documents were present at both project sites and also at the mayors of the closest villages. To open the meeting, the stakeholders were informed about the aim of the meeting and the project. Climate change and its impacts were also explained to make them understand the overall objective. Then the questions from the stakeholders are answered. There were a couple of questions about the project; such as; how close from the turbines they could come and whether they would be able to get electricity directly from the turbines. Although the villagers were informed that the meeting was about the wind farm project, most of them commented about Icdas' Steel manufactory. For example, although not related to the project, some local fishermen requested to be able to enter the bay in front of the manufacturing site, but this is banned by governmental authorities. They were frequently reminded to comment about the wind farm project.

The blind sustainable development exercise followed the questions and answers. The sustainability indicators were explained and discussed one by one with the stakeholders.

After the sustainability development exercise, the continuous input/grievance mechanism was discussed. Each mechanism was explained to decide the best option

for the local people. They preferred to use the Continuous Input / Grievance Expression Process Book. The book was located at the Headman's office. In addition to the Continuous Input / Grievance Expression Process Book, the details of the contact person from Icdas.

The last exercise was a discussion around sustainable development monitoring. The villagers did not provide many ideas on how to monitor the indicators but said that they will be able to provide more feedback when the physical project activities will commence.

The meeting was successful in terms of the stakeholders' attention to the project. The villagers view on the project was positive and they believe that it will be beneficial for the local community and Turkey in general. 23 people attended the physical meeting. A large number of people attended to the meeting. Although women were encouraged to attend the meeting, not many of them did so. Mostly local people and representatives from governmental authorities attended. The original participant list in Turkish was available to the VVB during the first crediting period. Further comments will be followed through the Grievance Expression Process Book.

After the design change, since it is understood that the turbine planned to be added will be installed within the same EIA impact area based on the EIA Not Required Decision, no changes will be made to the site boundaries, the entire project area has been examined during the EIA process, the environmental impacts that may arise will not increase cumulatively and the license amendment for the capacity addition has been approved by EMRA, it is not deemed necessary to apply the provisions of the EIA Regulation by the General Directorate of Environmental Impact Assessment, Permit and Inspection. Thus, no additional stakeholder meetings are required in accordance with the Gold Standard Design Change Requirements as there is no change in the project location or expansion of the project boundaries and a new EIA is not required according to local legislation.

However, a local stakeholder consultation for the capacity extension has been conducted as a part of the physical site visit at the plant on 19/02/2024. There were no complaints or negative comments from the stakeholders. They were reminded of the grievance book.

E.2 Final continuous input / grievance mechanism

Method	Include all details of Chosen Method (s) so that they may be understood and, where relevant, used by readers.
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Continuous Input / Grievance Expression Process Book	Continuous Input / Grievance Expression Process Books are located at the Headman offices in Aksaz, Değirmencik, Örtülüce and Çakırlı villages. The stakeholders chose to use this method.
Telephone access	Barış Bora, Environmental Engineer Phone:00 90 286 395 12 39 This method can be easily used by the stakeholders since telephone is widely used in Turkey.
Internet/email access	Barış Bora, Environmental Engineer baris.bora@icdas.com.tr Although, this method might not be used commonly, it's also provided to the stakeholders.
GS Contact	help@goldstandard.org

APPENDIX 1 - SAFEGUARDING PRINCIPLES ASSESSMENT

Complete the Assessment below and copy all Mitigation Measures for each Principle into [SECTION D](#) above. Please refer to the instructions in the [Guide to Completing](#) this Form.

Assessment Questions / Requirements	Justification of Relevance (Yes / potentially / no)	How Project will achieve Requirements through design, management or risk mitigation.	Mitigation Measures added to the Monitoring Plan (if required)
Principle 1. Human Rights			
1. The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in	No	1. Turkey is a party to European Convention on Human Rights since 18 th May,	N/A

violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights 2. The Project shall not discriminate with regards to participation and inclusion		1954.³¹ 2. Project activities are not expected to cause any human rights abuse. As a member of United Nations and part of UN Agreement on Human Rights, it is ensured by law in Turkey that no action can be taken against human rights³².	
Principle 2. Gender Equality			
1. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women 2. Projects shall apply the principles of nondiscrimination, equal treatment, and equal pay for equal work 3. The Project shall refer to the	No	1. The project does not reduce access to or control of resources for women. The project does not adversely affect men and women in marginalized or vulnerable communities. 2. Project does not involve any form of discrimination in any kind of forms. Turkey	N/A

³¹ Please See Official Website of Ministry of Foreign Affairs of Turkey: <http://www.mfa.gov.tr/the-european-convention-on-human-rights.en.mfa>

³² <http://www.resmigazete.gov.tr/main.aspx?home=http://www.resmigazete.gov.tr/arsiv/7217.pdf&main=http://www.resmigazete.gov.tr/arsiv/7217.pdf>

country's national gender strategy or equivalent national commitment to aid in assessing gender risks 4. (where required) Summary of opinions and recommendations of an Expert Stakeholder(s)		ratified ILO 100 Equal Remuneration Convention and 111 Discrimination (Employment and Occupation) Convention³³. Therefore, the safeguarding principle related to Gender Equality and Women's Rights is not triggered. 3. The project does not have any scope to apply gender strategy. 4. N/A	
Principle 3. Community Health, Safety and Working Conditions			
1. The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community	No	The project owner is committed to the safe and healthy working conditions during all phases of the project. Also, the wind farm project does not release any emission or waste to the environment. So, the project does	N/A

³³ http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11200:0::NO::P11200_COUNTRY_ID:102893

		not pose an adverse effect on the workers and the community.	
Principle 4.1 Sites of Cultural and Historical Heritage			
Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture?	No	During the operation of the project, there was not any damage, alteration or removal to the critical cultural heritage. The project location does not involve any critical cultural heritage.	N/A
Principle 4.2 Forced Eviction and Displacement			
Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)?	No	The project does not involve any settlement areas. So, this project does not cause any physical or economic relocation of people.	N/A
> >			
Principle 4.3 Land Tenure and Other Rights			
a. Does the Project require any change, or have any uncertainties related to land tenure arrangements and/or access rights, usage rights or land ownership? b. For Projects involving land use tenure, are there any uncertainties with regards to land tenure, access rights, usage rights or land ownership?	No	The affected project area covers only the erection areas of 19 turbines and the area is rented from the Çanakkale Biga Forestry Operation Directorate according to the Turkish laws.	The area rented from the Çanakkale Biga Forestry Operation Directorate for the erection of each turbine was 105m*105m. However, the

>>		Thus, there are no uncertainties related to land tenure. Moreover, the project activities do not restrict the use of land. The project area is open to public use.	project owner reduced this area to 50m*50m for each turbine. Thus, the area affected from the project activities are reduced. There are no restricted areas in the project, thus, no conflict in land tenure. So, not applicable.
Principle 4.4 - Indigenous people			
Are indigenous peoples present in or within the area of influence of the Project and/or is the Project located on land/territory claimed by indigenous peoples?	No	The generation of electricity by wind power does not create any negative impact on local communities. The project does not prevent any local economic or cultural activities. Hence, it created new job opportunities for the local people. Moreover, support for local communities and scholarships for	N/A
>>			

		local students are provided.	
Principle 5. Corruption			
1. The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects	No	The Project does not involve and is not complicit in any kind of corruption.	N/A
Principle 6.1 Labour Rights			
1. The Project Developer shall ensure that all employment is in compliance with national labour occupational health and safety laws and with the principles and standards embodied in the ILO fundamental conventions 2. Workers shall be able to establish and join labour organisations 3. Working agreements with all individual workers shall be documented and implemented and include: a) Working hours (must not exceed 48 hours per week on a regular basis), AND	Yes	1.The Project Developer ensures that all employment follows national labour occupational health and safety laws and with the principles and standards embodied in the ILO fundamental conventions 2. Workers are able to establish and join labour organisations 3.Working agreements with all individual workers are documented and implemented. 4.No child labour is allowed (Exceptions for children working on their families' property requires an Expert	All employees are trained about health and safety issues.

b) Duties and tasks, AND c) Remuneration (must include provision for payment of overtime), AND d) Modalities on health insurance, AND e) Modalities on termination of the contract with provision for voluntary resignation by employee, AND f) Provision for annual leave of not less than 10 days per year, not including sick and casual leave. 4. No child labour is allowed (Exceptions for children working on their families' property requires an Expert Stakeholder opinion) 5. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and		Stakeholder opinion) 5.The Project Developer ensures the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures	
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emergency preparedness and response measures			
Principle 6.2 Negative Economic Consequences			
1. Does the project cause negative economic consequences during and after project implementation?	No	The generation of electricity by wind power does not create any negative impact on local communities. The project does not prevent any local economic or cultural activities. Hence, it created new job opportunities for the local people. Moreover, support for local communities and scholarships for local students are provided.	N/A
> >			
Principle 7.1 Emissions			
Will the Project increase greenhouse gas emissions over the Baseline Scenario?	No	The project activity covers electricity generation only from wind power, which is a renewable energy source and does not create GHG emissions, on the contrary it reduces GHG emissions over	N/A
> >			

		the baseline scenario.	
Principle 7.2 Energy Supply			
Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users?	No	The wind power plant is connected to the national grid, only supplying and consuming electricity from the same source. The project does not include any other fuel source other than wind.	N/A
> >			
Principle 8.1 Impact on Natural Water Patterns/Flows			
Will the Project affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	No	For the construction of the power plant (wind turbines) existing forest roads are used and the transmission lines between the turbines are buried underground.	N/A
> >			
Principle 8.2 Erosion and /or Water Body Instability			
a. Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion? b. Is the Project's area of influence susceptible to excessive erosion	a. No b. No	There was a risk of erosion, due to the excavation during the construction phase. However, the risk is eliminated by using existing forest roads. Thus, no	Usage of existing forest road eliminated the risk; thus, no further mitigation measure will be applied

and/or water body instability?		additional risk of erosion occurred during and after the construction.	during the operation.
>>			
Principle 9.1 Landscape Modification and Soil			
Does the Project involve the use of land and soil for production of crops or other products?	No	The project does not cover any agricultural production. Only 5% of the project area is used for wind turbines.	N/A
>>			
Principle 9.2 Vulnerability to Natural Disaster			
Will the Project be susceptible to or lead to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions?	No	The land change at the project site during the construction period of the turbines might have increased the risk of erosion. The operation of the wind farm project does not lead to increase the vulnerability to landslides, erosion or any other extreme climatic conditions in the project area.	N/A The area was rented from the Çanakkale Biga Forestry Operation Directorate for the turbine erection was 105m*105m for each turbine. However, the project owner reduced this area to 50m*50m for each turbine. Thus, the area affected from the project activities is reduced. The construction
>>			

			phase had been completed with the mitigation measures explained above and no erosion or landslide occurred. No further mitigation measure is required during the operation of the wind farm as justified in the “justification” section.
Principle 9.3 Genetic Resources			
Could the Project be negatively impacted by or involve genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development, or take place in facilities or farms that include GMOs in their processes and production)?	No	The project site is being utilised for generating electricity from wind turbines with no requirement for GMOs.	N/A
>>			
Principle 9.4 Release of pollutants			
Could the Project potentially result in the	No	The wind farm project does not	N/A

release of pollutants to the environment?		release any emission or waste to the environment. The turbines create noise, but they are not close enough to be heard from the residential areas. According to Assessment and Management of Environmental Noise Regulation, the noise level for industrial plants in highly residential areas is 65dBA for daytime, 60 for evening time and 55 for night-time. The noise calculation for wind turbines showed that the noise level in each residential area (Değirmencik, Örtülüçe, Çakırlı, Kemer and Aksaz villages and Karabiga town) is below these noise level limits when the turbines are in operation. The	
> >			

		nearest settlement among these residential areas is Örtülüçe village, located at 837 m air distance to the turbine number 14. During the construction phase, the activities were carried out only daytime. The construction phase noise levels calculations also showed that the limits set by the noise regulations are met for the residential areas and workers. The wind turbines do not create shadow flickering effect. Shadow flicker is more of an issue in high latitude countries since lower sun casts longer shadows. Although there is no regional requirement about shadow flickering effect of the wind turbines, it is	
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		commonly considered that shadow flickering effect does not occur at distances greater than 500-1000 m from a wind turbine. The closest wind turbine is located at 837 m away from Örtülüçe village. Considering the latitude of Turkey, the turbines are not close enough to create shadow or flickering effect to the residential areas.	
Principle 9.5 Hazardous and Non-hazardous Waste			
Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?	Yes	The project does not involve use or release of hazardous and non-hazardous chemicals. The wind turbines do not create any emission or waste. During the construction phase, the water required for the sanitary purposes of the workers for the construction phase was provided at the	The waste oil and waste lubricants occur during the maintenance of wind turbines will be collected and not discharged at the site. These liquid wastes are classified as hazardous waste
> >			

		project owner's steel plant close to the project area. Thus, no additional wastewater treatment was required. The solid waste occurred during the installation of the turbines were separated according to the relevant classes and disposed by the companies having licences.	according to the regulation on control of hazardous wastes ³⁴ . The collected waste oil and waste lubricants will be transferred and disposed by the companies having relevant licences.
Principle 9.6 Pesticides & Fertilisers			
Will the Project involve the application of pesticides and/or fertilisers?	No	The project does not involve any agricultural elements that requires the use of pesticides and/or fertilisers.	N/A
> >			
Principle 9.7 Harvesting of Forests			
Will the Project involve the harvesting of forests?	No	The project owner used existing forest roads, which are originally constructed by Çanakkale Biga Forestry Operation	N/A The existing forest roads are used to avoid harvesting trees
> >			

³⁴ <https://www.mevzuat.gov.tr/MevzuatMetin/1.5.4857.pdf>

		Directorate to respond forest fires. Thus, it was not required to harvest existing trees for the construction and operation phase. No further harvesting of forests is required for the operation phase.	on project area. No further mitigation measure is required.
Principle 9.8 Food			
Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	No	The project does not cover any agricultural activity or any kind of agricultural products. The project area does not include any agricultural site.	N/A
> >			
Principle 9.9 Animal husbandry			
Will the Project involve animal husbandry?	No	The project only covers electricity generation from wind power. There are no animal husbandry activities carried out in the project.	N/A
> >			
Principle 9.10 High Conservation Value Areas and Critical Habitats			
Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems,	Yes	Project does not physically affect or alter largely intact or High Conservation	During the bird immigration periods the number of

critical habitats, landscapes, key biodiversity areas or sites identified?		Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites since there are no such sites in the project area.	birds affected by the turbines are monitored for two years and a report are sent to DNCNP every six months.
> >			
Principle 9.11 Endangered Species			
a. Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)? b. Does the Project potentially impact other areas where endangered species may be present through transboundary affects?	a. No b. No	a. There are not any endangered species identified as potentially being present within the Project boundary. b. Project does not have an impact on other areas where endangered species may be present through transboundary affects.	N/A
> >			

APPENDIX 2- CONTACT INFORMATION OF PROJECT PARTICIPANTS

Organization name	İçdaş Çelik Enerji Tersane ve Ulaşım San. A.Ş.(project owner
Registration number with relevant authority	108593 / Istanbul Chamber of Commerce
Street/P.O. Box	Mahmutbey Mahallesi Dilmenler Caddesi
Building	No: 20 Bağcılar
City	İstanbul
State/Region	-
Postcode	34218
Country	Turkey
Telephone	+90 (0) 212 604 04 04
E-mail	enerjiticaret@icdas.com.tr
Website	www.icdas.com.tr
Contact person	
Title	Energy Sales Marketing and Cost Accounting Manager
Salutation	Mr.
Last name	Cehiz
Middle name	-
First name	Serhat
Department	Energy Sales Marketing and Cost Accounting
Mobile	+90 (0) 533 305 84 47
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Personal e-mail	serhat.cehiz@icdas.com.tr

APPENDIX 3- LUF ADDITIONAL INFORMATION

Not applicable

APPENDIX 4-SUMMARY OF APPROVED DESIGN CHANGES

The project aims to generate electricity from wind, reduce the need of fossil fuel and import needs, and increase the diversity in energy generation. The project corresponds to the İçdaş Biga Wind Power Plant of İçdaş Çelik Enerji Tersane ve Ulaşım San. A.Ş. The firm capacity of the plant was 60 MW and consisted of 19 turbines with 3.2 MW capacity. The first set of turbines was commissioned on 16.10.2015, which is the start date of operations. The average annual electricity generation between the years 2016 and 2021 is 153.674 GWh to be fed to the national grid. The number of wind turbine units has been changed due to the capacity extension described below.

In February 2022 and June 2022, Energy Market Regulatory Authority (EMRA) has allowed extension of capacity and addition of auxiliary generation units for better utilization of renewable energy potential in Turkey. Thus, Icdas Biga Wind Farm has been allowed to install a new wind turbine generator with a capacity of 7 MWm/3.8 MWe and the generation license has been revised as 67.8 MWm/63.8 MWe with the amendment dated 04.04.2023. The total number of wind turbines after the extension became 20. Additional turbine is Nordex brand, Delta4000 series, N163/6.x model. After extension, electricity generation capacity has the configuration of 16 x (3.2 MWm/3.2 MWe) + 2 x (3.2 MWm/2.93 MWe) + 1 x (3.2 MWm/2.94 MWe) + 1 x (7 MWm/3.8 MWe). Annual electricity generation is estimated as 174,609.00 MWh/year as per the micro siting studies. Estimated generation corresponds to 113,181 tCO₂ avoided annually. Thus, estimated annual average electricity generation over the second crediting period has been calculated as 169,512.49 MWh and emission reduction as 109,877 tCO₂ after the extension. The difference arises from the commissioning date of the additional wind turbine. The extension unit is expected to be commissioned in October 2024 as per the generation license. Details are provided in the ER Calculation Sheet. The design change involved only addition of one new turbine and did not involve extension of the project boundaries into new sites.

An additionality assessment has not been conducted in the second crediting period. However, previous additionality assessment has been updated due to the design change.

Table 11 – Main Financial Parameters Used for Investment Analysis

Parameters	Unit	Data Value
Installed Capacity ³⁵	MWe	63.8
Grid Connected output ³⁶	GWh/year	174.6
Capital Investment ³⁷	Million \$	~72.4
Generation Expenses	Million \$/year	~2.1
Period of Assessment ³⁸	Years	20
Energy Sale Price (average) ³⁹	\$ Cents/kWh	6.75
Expected VERs price ⁴⁰	\$/ tCO ₂ e	3

The Internal Rate of Return (IRR) of the Icdas Biga Wind (equity IRR) has been calculated as 5.3% based on the parameters given above without considering the carbon revenue. All expenses and revenues were increased as per the capacity extension ratio. Details are provided in Financial Assessment Excel Sheet.

According to the “Tool for the demonstration and assessment of additionality”, Version 07.0.0”, the common practice shall provide an analysis of any other activities that are similar to the Project Activity. Projects are considered similar if they are in the same country/region and/or rely on a broadly similar technology, are of a similar scale, and take place in a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing etc.

Guidelines on Common Practice version 03.1⁴¹ has been followed.

³⁵ Generation License

³⁶ Generation Estimation Study

³⁷ Financial Assessment Document prepared by project owner

³⁸ The expected lifetime of the main equipment

³⁹ YEKDEM Energy Prices + estimate

⁴⁰ <https://www.cbd.int/financial/2017docs/carbonmarket2017.pdf>

⁴¹ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-24-v1.pdf>

Step 1: calculate applicable output range as +/-50% of the design output or capacity of the proposed project activity.

The total capacity of the proposed project is 63.8 MWe. Therefore, the applicable output range is from 31.9 MWe to 95.7 MWe.

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

- (a)The projects are located in the applicable geographical area;
- (b)The projects apply the same measure as the proposed project activity;
- (c)The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity;
- (d)The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant;
- (e)The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1;
- (f) The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity.

Project start date after the initial capacity extension in the registered PDD is 09/12/2014, date of turbine agreement. Common practice is conducted according to this date.

Applicable geographical area has been selected as the whole host country (Turkey) as per paragraph 1 of Guidelines on Common Practice version 03.1. Projects which apply the same measure as the proposed project have been determined as all renewable energy projects are selected as the same energy source type of projects. All of the selected plants deliver the same service which is the electricity generation. Applicable output range has been determined and all of the power plants are taken from the latest available year (2023). General Directorate of Energy Affairs and EMRA Electricity Production License Database have been used as a main resource. Therefore, all of the compared renewable energy power plants have been operational before the implementation of the project activity.

Below is a list of operational renewable energy power plants as given by the General Directorate of Energy Affairs, which are in the applicable range of ODEMIS WPP (i.e., 31.9 MWe to 95.7 MWe) (counted as 33). Details are given in the common practice analysis submitted to VVB.

Table 12 – List of operational wind power plants

PLANT NAME	SOURCE TYPE	INSTALLED CAPACITY (MWe)	OPERATION START DATE	REGISTRATION REFERENCE
Özlüce (Çoruh) HES	Hydroelectricity	36.380	7.02.2014	https://evident.app/IREC/device-register/%C3%96ZLHYDR001
Düzce-Aksu HES	Hydroelectricity	46.200	25.04.2014	https://registry.terra.org/app/projectDetail/VCS/2095
Toros HES	Hydroelectricity	49.990	17.05.2013	https://registry.terra.org/app/projectDetail/VCS/1499
Eğlence I HES	Hydroelectricity	43.500	13.06.2013	https://registry.terra.org/app/projectDetail/VCS/1221
Çambaşı Reg. ve HES	Hydroelectricity	44.100	20.12.2013	https://registry.goldstandard.org/projects/details/80
Kayaköprü Hidroelektrik Santrali	Hydroelectricity	38.600	5.04.2013	-
Eren HES	Hydroelectricity	35.186	4.12.2014	https://registry.terra.org/app/projectDetail/VCS/1297
Çine Adnan Menderes HES	Hydroelectricity	44.650	6.06.2014	EÜAŞ
Dereli HES	Hydroelectricity	49.200	10.01.2014	https://registry.terra.org/app/projectDetail/VCS/1758
Çırakdamı Regülatörü ve Hes	Hydroelectricity	49.100	26.04.2013	https://registry.terra.org/app/projectDetail/VCS/1506
Daran HES	Hydroelectricity	67.160	5.12.2013	YEK-G
Midilli HES	Hydroelectricity	32.548	24.12.2013	https://registry.terra.org/app/projectDetail/VCS/1330
Ordu HES	Hydroelectricity	42.000	3.01.2014	YEK-G
Kılavuzlu HES	Hydroelectricity	54.000	17.11.2012	https://evident.app/IREC/device-register/KILAHYDR001
Garzan Barajı ve HES	Hydroelectricity	52.000	4.01.2013	https://evident.app/IREC/device-register/GARZHYDR001
Umut Reg. Ve HES	Hydroelectricity	42.250	21.02.2014	https://registry.goldstandard.org/projects/details/1165
Koçlu HES	Hydroelectricity	36.260	10.07.2014	https://registry.terra.org/app/projectDetail/VCS/2094
Burçak HES	Hydroelectricity	66.290	26.12.2013	-
Balabanlı RES	Wind	60.500	11.07.2014	https://registry.goldstandard.org/projects/details/190
Zeytineli RES	Wind	49.500	21.06.2013	https://registry.goldstandard.org/projects/details/1221
Kavaklı RES	Wind	50.000	25.09.2014	https://registry.goldstandard.org/projects/details/467
Sadıllı RES	Wind	33.000	26.10.2014	https://registry.goldstandard.org/projects/details/146

Kozbeyli RES	Wind	34.550	22.02.2013	https://registry.goldstandard.org/projects/details/1404
Samurlu RES	Wind	43.900	31.05.2013	https://registry.goldstandard.org/projects/details/971
Hasanbeyli RES	Wind	50.000	11.07.2014	https://registry.goldstandard.org/projects/details/117
Silivri RES	Wind	45.000	19.09.2014	https://registry.goldstandard.org/projects/details/729
Umurlar RES	Wind	36.400	30.09.2014	https://registry.goldstandard.org/projects/details/119
Gökres-2 RES	Wind	35.000	15.08.2014	https://evident.app/IREC/device-register/G%C3%B6KRES001
Poyraz RES	Wind	66.900	3.05.2013	https://evident.app/IREC/device-register/POYRWIND001
Çanta RES	Wind	50.000	24.07.2014	https://registry.goldstandard.org/projects/details/144
Çelikler Pamukören Jeotermal Elektrik Üretim Tesisi	Geothermal	67.530	31.10.2013	-
Dora III JES	Geothermal	34.000	16.08.2013	https://evident.app/IREC/device-register/DORATHER003
Kızıldere II JES	Geothermal	80.000	30.08.2013	-

Step 3: within the projects identified in Step 2, identify those that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Note their number Nall

Table 13 – List of power plants that are not registered

PLANT NAME	SOURCE TYPE	INSTALLED CAPACITY (MWe)	OPERATION START DATE
Kayaköprü Hidroelektrik Santrali	Hydroelectricity	38.600	5.04.2013
Burçak HES	Hydroelectricity	66.290	26.12.2013
Çelikler Pamukören Jeotermal Elektrik Üretim Tesisi	Geothermal	67.530	31.10.2013
Kızıldere II JES	Geothermal	80.000	30.08.2013
Kayaköprü Hidroelektrik Santrali	Hydroelectricity	38.600	5.04.2013

Characteristics of the power plants are also indicated in the Common Practice excel sheet. After excluding the registered VER projects, there exist 4 renewable energy power plants being operated in Turkey, at the time of project start date.

Therefore; Nall = 4

Step 4: within similar projects identified in Step 3, identify those that apply technologies that are different to the technology applied in the proposed project activity. Note their number Ndiff

Apart from wind power plants, rest are considered as different technologies. Different technology projects are counted as 4, therefore Ndiff=4

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

$$F=1-N_{diff}/N_{all}=1-(4/4) = 0 (< 0.20)$$

$$N_{all} - N_{diff} = 4 - 4 = 0 (< 3)$$

According to “Tool for Common practice”, Version 03.1, if the factor F is greater than 0.2 and Nall-Ndiff is greater than 3, then the proposed project is a “common practice”.

For the proposed project, $F=0 (< 0.20)$ and $N_{all}-N_{diff}=0 (<3)$, therefore, the proposed project is not a common practice within the applicable geographical area. Hence, the proposed project is additional.

The project applies ACM0002 “Large-scale Consolidated Methodology: Grid-connected electricity generation from renewable sources”. The applicability of the methodology has not changed. There is no change in the monitoring plan. Data and parameters to be monitored are the same. Site metering records will be used for emission reduction calculations as main source. EPIAS screenshots will be used as the cross-check method. The project still complies with the monitoring plan and applied methodology. Project scale remains the same as large scale. The project still complies with the relevant regulations and laws in Turkey.

The project contributes to sustainable development by lowering energy costs and the dependency on imported resources like natural gas and oil, creating employment and combating climate change by creating renewable energy. Positive impacts of the installation of renewable energy power plants are now increased in the district due to this capacity extension. Although it is not possible for the project to cause a negative development, on the contrary, it will make positive contributions to the region via

capacity extension. Therefore, there is no change in the scoring of parameters. Also, project has the “EIA Exemption” from the related ministry of Turkey.

Revision History

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