International Carbon Registry

Tiligulska Wind Farm

Joint project design description and monitoring report

Abstract

Tiligulska Wind Farm (WF) is a renewable type of wind power plant with an operation start date of 01/02/2022, located in Mykolaiv district in Mykolaiv region in Ukraine. The purpose of the project is to provide renewable electricity to the Ukraine grid through harnessing wind energy. Project aims reducing the dependency on fossil fuel-based electricity generation in Ukraine, hence reducing the local environmental pollution and contributing to combatting global climate change. Tiligulska WF is a large-scale project activity with an installed capacity of 498 MW, providing 1,721,420.00 MWh/year clean electricity to the Ukraine grid system, and achieving 1,073,211 tCO_2 of emission reduction annually. Project activity is expected to achieve 10,732,118 tCO_2 emission reductions during the 10-year crediting period.

Logo: DTEK

D. TRADING INTERNATIONAL SA

Project design description (PDD)

Basic Information	
ID of project	279
Project name	Tiligulska Wind Farm
Project proponent	D. TRADING INTERNATIONAL SA
Representative	Mr. Dmytro Fedotov, Director, Email: FedotovDS@d.trading; Phone: +41227154611
Statement by the project proponent	The D. TRADING INTERNATIONAL SA states that he is responsible for the preparation and fair presentation of this joint project design description and monitoring report and all accompanying documentation provided
Monitoring period	01/02/2022 to 31/01/2024
Pre-registration date	12/04/2024
Version number of the PDDMR	1.3
Date of version	20/01/2025
Methodology(ies) applied and version number	☐ No ☒ Yes, ACM0002 Grid-connected electricity generation from renewable sources Version 21.0
Criteria for validation and verification	Val / Ver / Criteria ☐ / ☐ / ICR requirement document v.4 ☒ / ☒ / ICR requirement document v.5 ☒ / ☒ / ISO 14064-2 ☒ / ☒ / Applied methodology, ACM0002 Grid-connected electricity generation from renewable sources Version 21.0 ☐ / ☐ / Other, please specify.
Host country(ies)	Ukraine
Host country approval	☐ Yes ☒ No
Sectoral scope of project activity	UNFCCC CDM Sectoral Scope 1: Energy industries (renewable - / non-renewable sources)
Multiple project activities	☐ Yes ☒ No
Methodology(ies) applied and version number	ACM0002 Grid-connected electricity generation from renewable sources Version 21.0
Type (CDR, avoidance, hybrid)	☐ CDR ☒ Avoidance ☐ Hybrid
MRV cycle:	2 years + the rest of the monitoring periods will be determined later.
Estimated annual average GHG emission mitigation (t CO2-e)	1,073,211

Table of Contents

1. Project description

1.1 Purpose, objectives, and general description of the project

Tiligulska Wind Farm (WF) project (hereafter Tiligulska WF, project and/or project activity) is a renewable type of wind power plant, located in the territory of Mykolaiv district in Mykolaiv region in Ukraine. On 01/02/2022, the project started to feed the Ukraine grid system, called as United Energy System of Ukraine-UESU (hereafter UESU or/Ukraine grid).

The purpose of the project is to provide renewable electricity to the Ukraine grid through harnessing wind energy. Project aims reducing the dependency on fossil fuel-based electricity generation in Ukraine, hence reducing the local environmental pollution and contributing to combatting global climate change.

Figure 1 A photo from the construction of the Tiligulska WF[1]

Tiligulska WF is a large-scale project activity with an installed capacity of 498 MW[2]. The project construction started in 2021 and was planned to be completed in 2022. However, because of the war in Ukraine started in February 2022, the construction could not be completed. Only 19 wind turbines, each of which has an installed capacity of 6 MW, were constructed and taken into operation. The rest of the wind turbines construction will be completed in the coming years depending on the war conditions. At the current stage, out of 498 MW, 114 MW was installed and is being operated.

According to the Tiligulska WF project plan document, the wind turbines were planned to be installed at four stages [redacted]

The project is expected to provide average of 1,721,420.00 MWh[3] of clean electricity to the Ukraine grid system and to achieve 1,073,211 tCO_2 of emission reduction annually. Project activity is expected to achieve 10,732,118 tCO_2 emission reductions during the 10-year crediting period. During the first

[1] https://dtek.com/en/media-center/news/dtek-commissions-tyligulska-wind-power-plant-in-ukraine-/.

[2] NPCUkrenergo_SystemUsageAgreement_2019-05-22 06_1147-19 Договір на приєднання.pdf. This document indicates the installed capacity 500 MW instead of 498 MW; TiligulskaWF_EIAConclusion21102019_Висновок_ОВД_500.pdf

[3] The annual electricity generation is taken from the estimated values, indicated in the TiligulskaConstructionPlan2021_Проект ПЗ.pdf, p.6, Table 1.1.

monitoring period 01/02/2022-31/01/2024, the project activity achieved 256,680 tCO_2 emission reductions.

The operation start date of the project is 01/02/2022.

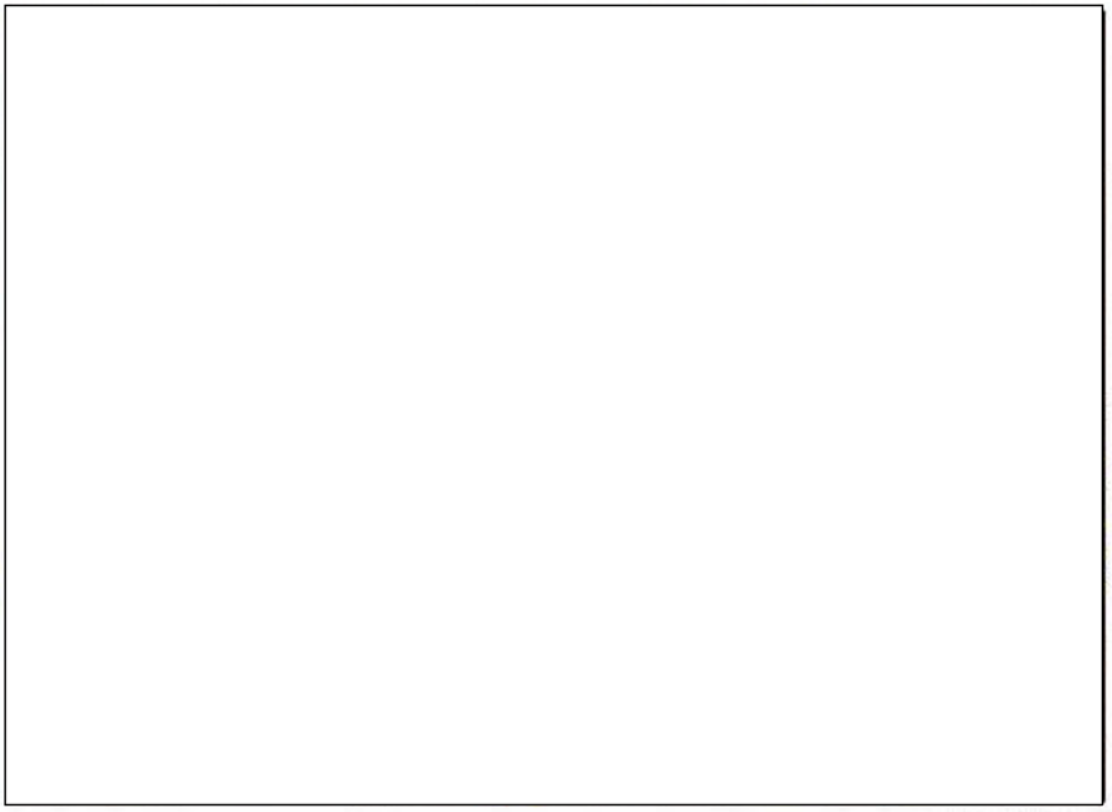


Figure 2 Tiligulska WF[4]

Project proponent is D. TRADING INTERNATIONAL SA. DTEK Tiligulska Wind Electric Plant LLC authorized D. TRADING INTERNATIONAL SA to register in the ICR as the project proponent who shall be entitled to register Tiligulska WF project in the ICR and issue the ICCs generated by Tiligulska WF project.

DTEK Tiligulska Wind Electric Plant LLC has entered into the System Usage Agreement with the Private Joint Stock Company National Power Company Ukrenergo (hereafter NPC Ukrenergo) under No.06/1147-19 dated 22/05/2019. This agreement relates to the connection of the project`s facility to the Ukraine grid. NPC Ukrenergo is the electrical networks of the Service provider in Ukraine.[5]

Following the system usage agreement, the project owner (DTEK Tiligulska Wind Electric Plant LLC) has entered the power purchase agreement (hereafter PPA) with the State Enterprise Guaranteed Buyer under No.990/01 dated 18/11/2019.[6]

Following the permits and agreements, the project received the electricity generation licenses by the resolutions of the National Energy and Utilities Regulatory Commission (hereafter NEURC) with the following numbers.[7]

[4] PostMonitoringEIA_ЗВІТ_ТилігулВЕС_ДТЕК_моніторинг ВЕУ_річний_2022_compressed.pdf, p.12.
[5] NPCUkrenergo_SystemUsageAgreement_2019-05-22 06_1147-19 Договір на приєднання.pdf
[6] GuaranteedBuyer_PowerPurchaseAgreement_Договір prePPA №990_01 від 18.11.2019.pdf
[7] Please see the "01_EnergyGenerationPermission" folder for the licenses.

License no	Wind turbine no	Date
[redacted]	[redacted]	[redacted]

Electricity generation license for the rest of the wind turbines will be received before their construction.

Project's baseline estimated and first monitoring period achieved emission reductions

Project is expected to generate 1,073,211 tCO_2 emission reductions annually. During the 10-year crediting period, the project expected emission reduction is 10,732,118 tCO_2. During the first monitoring period, 01/02/2022-31/01/2024, the project activity achieved 256,680 tCO_2 emission reductions.

Project's location

Tiligulska WF is located outside the settlements within the territories of [redacted]

Funding

Project was built and has been operated privately; and did not receive any financial aid or assistance from the government or any other entities.

Technical features

Tiligulska WF project is a Greenfield renewable wind farm, connected to the Ukraine grid system. Project has an installed capacity of 498 MW[8] with an estimated annual average electricity generation of 1,721,420.00 MWh.

[redacted]

Project wind turbines' commissioning and/or registration completion test dates are given in the following table.[11] Commissioning certificates showing that the wind turbines are ready for operation are certified by the "Registered State Inspection of Architecture and Urban Planning of Ukraine".

[8] TiligulskaConstructionPlan2021_Проект ПЗ.pdf, Table 1.1., p.13.
[9] TiligulskaConstructionPlan2021_Проект ПЗ.pdf, Table 1.1., p.12.
[10] Технічний Паспорт на ВЕУ №153 ТВЕС Vestas_V162-6.0 MW.pdf
[11] Please see the 03_WindTurbineCommissionings folder.

Table 1 Tiligulska WF wind turbines commissioning[12]

No	Wind Turbines No[13]	Stages	Commissioning No	Commissioning Date
1	26	2&4	IU101230412754	14/04/2023
2	67	1	IU101220119946	19/01/2022
3	85	1	IU101230406149	11/04/2023
4	90	1	IU101220203398	03/02/2022
5	104	1	IU101230406281	11/04/2023
6	153	1	IU101220124546	25/01/2022
7	312	1	IU101211229390	29/12/2021
8	313	1	IU101221114195	18/11/2022
9	314	1	IU101220128180	28/01/2022
10	316	2&4	IU101230412491	13/04/2023
11	328	1	IU101221104513	11/11/2022
12	329	1	IU101221102116	11/11/2022
13	330	1	IU101221103625	11/11/2022
14	338	1	IU101221103935	11/11/2022
15	339	1	IU101221111199	16/11/2022
16	348	1	IU101221220211	21/12/2022
17	349	1	IU101230105165	16/01/2023
18	350	1	IU101230406513	11/04/2023
19	375	1	IU101220211871	21/02/2022

The term of operation of Tiligulska WF is 25 years. Average lifetime of the equipment is determined by the wind turbines. According the CDM Tool 10, "Tool to determine the remaining lifetime of equipment", Version 1.0, average lifetime of the wind turbines is 25 years.[14]

Conditions prior to the project

[redacted]

The project site is located on agricultural lands. However, after the implementation of the project, the project site continued to be used for agricultural purposes.

Before the implementation of the project activity, the amount of renewable electricity generated by the project activity was utilized from the carbon intensive Ukraine national grid system, which is dominated by nuclear and fossil fuel-based power plants. The total power generation capacity distribution of Ukraine grid by the end of July 2019 (excluding power generating facilities of the uncontrolled territory of the Crimean electric power system and the Donbas electricity system): 57% nuclear, 35% thermal, 7% hydro and 1% renewable (alternative energy).[16] Since the beginning of the

war in Ukraine, this ratio has changed due to the destruction and lack of access to power plants in the temporarily occupied territories in the eastern Ukraine.

Baseline scenario and project boundary

Tiligulska WF project is a newly installed Greenfield renewable wind power plant. Therefore, project boundary comprises the project activity and the Ukraine grid system. Associated baseline scenario and project boundary for the project activity is as follows:

In the absence of the project activity, which is the baseline scenario is that the "same amount of electricity generated by the Tiligulska WF would have otherwise been generated by the operation of Ukraine grid-connected power plants and by the addition of new generation sources into the grid." Ukraine grid system is dominated by nuclear and thermal power plants.

"The spatial extent of the project boundary includes the project power plant/unit and all power plants/units connected physically to the Ukraine grid system that the project power plant is connected to." As per this statement the project boundary includes:

- Tiligulska WF project,
- Ukraine grid system.

Project does not provide any services outside the project boundary.

Project's United Nations Sustainable Development Goals (SDGs) contribution

Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all (SDG.7.2.1):

As a renewable electricity generation project, Tiligulska WF is expected to contribute to increase of renewable energy share in the total final energy consumption of Ukraine through providing 1,721,420.00 MWh clean energy annually to the Ukraine grid. During the first monitoring period 01/02/2022-31/01/2024, the project activity generated 399,190.66 MWh clean energy and supplied it to the Ukraine grid.

Project activity has been also supporting Ukraine in stimulating and commercializing the use of grid connected renewable energy technologies and markets, which are far more environmentally friendly. This will contribute to diversification of Ukraine electricity generation mix which is currently dominated by the fossil fueled power plants. Such a diversification is a long-term benefit of the project activity for combatting global climate change.

Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (SDG 8.5.1)

During construction and operation period, the project directly and indirectly generates job opportunities, which results in enhancing local employment and contributing to reducing local poverty. Project provided short term jobs during construction; and has been providing long term jobs during operation. In total,

[12] Please see the 03_WindTurbineCommissionings folder.
[13] In the commissioning documents, turbine numbers can be seen in page 5, under the item number of 14.
[14] Tool 10: Tool to determine the remaining lifetime of equipment, Version 01.
[15] Tiligulska_EIAReport_14082019_ОВД.pdf, p.35.
[16] https://www.ukrenergoexport.com/en/node/49.

[redacted]. The project has been operated by its own specialists and subcontractors under service contracts.

Goal 13. Take urgent action to combat climate change and its impacts (SDG 13.2.2)

The most significant SDG impact of the project is its contribution to combat climate change. Project activity, by producing renewable electricity, is expected to annually achieve 1,073,211 tCO_2/year emission reductions. During the first monitoring period 01/02/2022-31/01/2024, the project activity achieved 256,680 tCO_2 emission.

1.2 Project type and sectoral scope

Tiligulska WF is a large-scale Greenfield project activity. Project activity is not a grouped project.

Project's carbon emission reduction is an "avoidance/reduction" type activity. Through generating renewable electricity by harnessing wind energy, the project avoids emission of CO_2 from Ukraine grid system which is dominated by nuclear and thermal power plants.

Sectoral scope	Sectoral Scope 1: Energy industries (renewable - / non-renewable sources)
Project type	Type-1 Avoidance/reduction

1.3 Project

[redacted]

☒ Single location/area or installation
☐ Bundled project (multiple locations/areas or installations)
☐ Grouped project (locations/areas or installations added post validation)
☐ Bundled and grouped project.

1.3.1 Eligibility criteria for grouped project

Project is not a grouped project. Therefore, this section is N/A.

1.4 Location

[redacted]

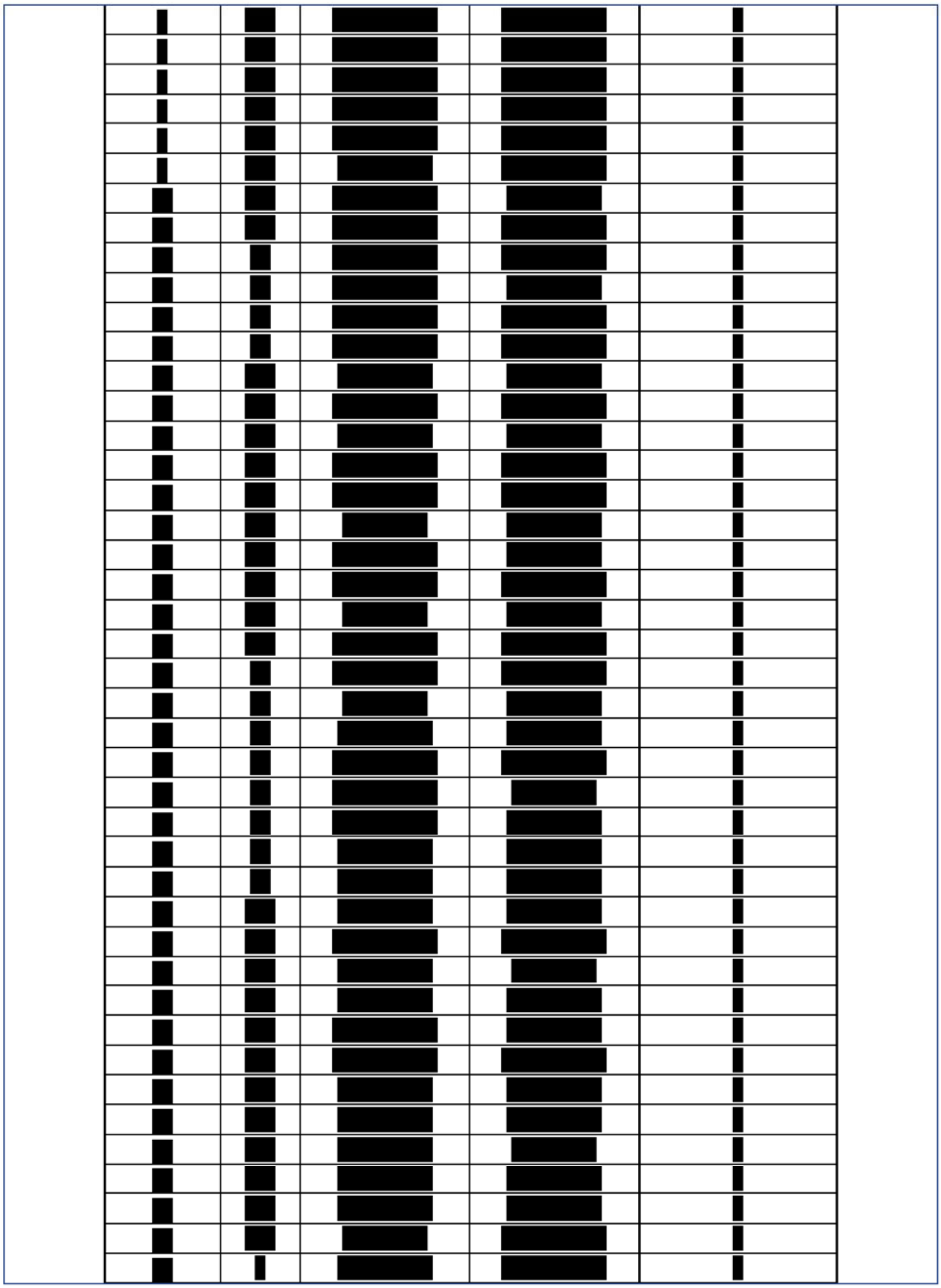
Address	[redacted] Mykolaiv district, Krutoyarka settlement, No.42.[17]

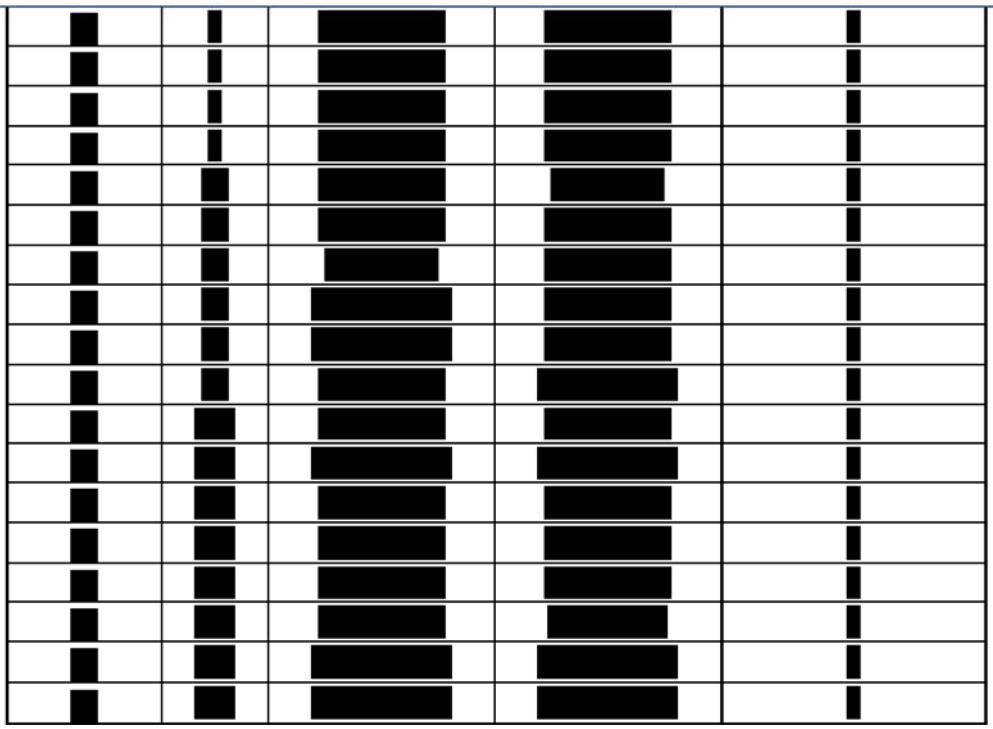
[17] AddressAssignment_Присвоение адреса.pdf

County/province	Mykolaiv region
Country	Ukraine
Region	Europe
Geographic location	
Latitude	[redacted]
Longitude	[redacted]
Map link	[redacted]

Table 2 Coordinates of the constructed wind turbines and substation

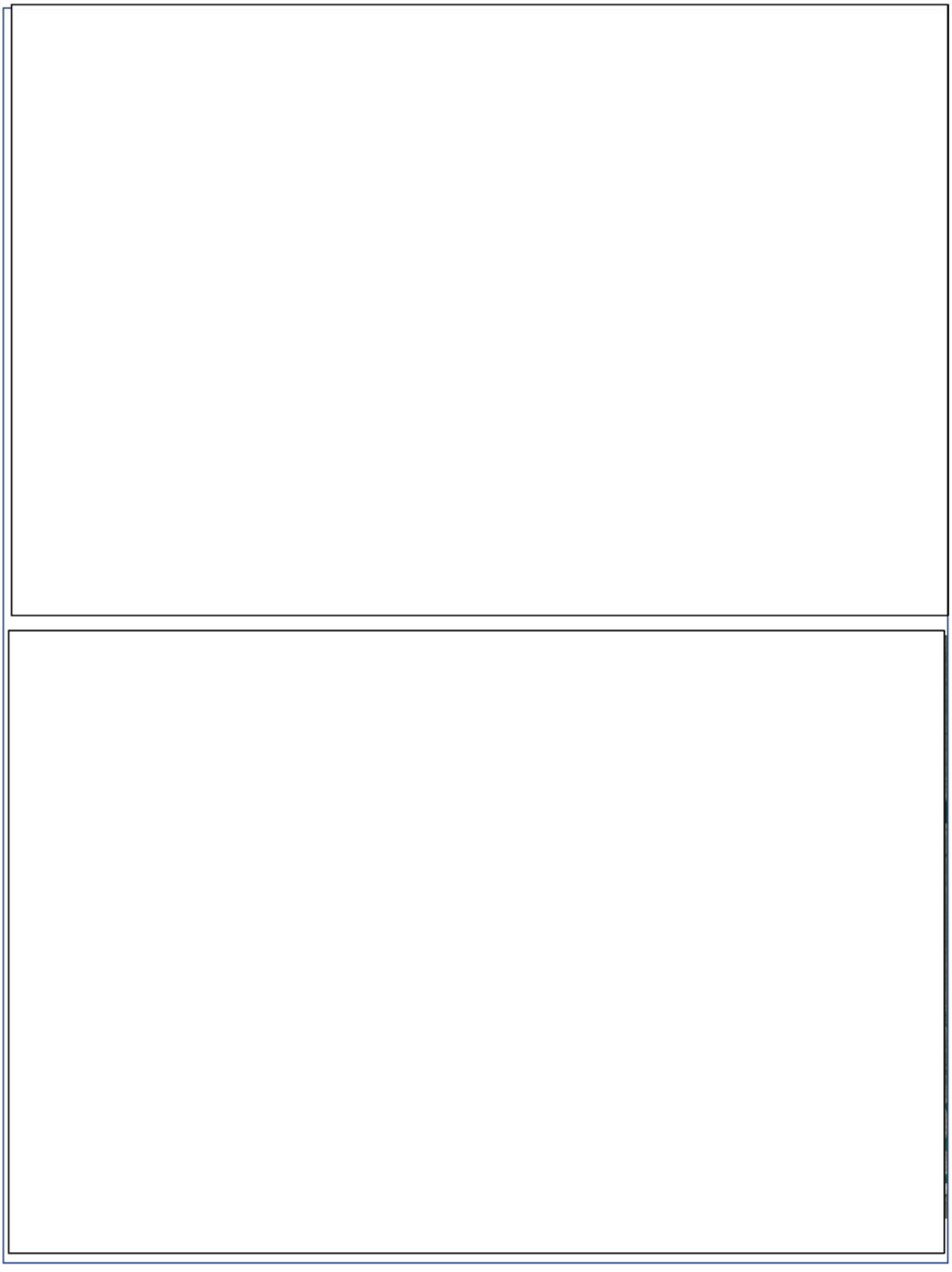
Item	№ WTG	Coordinates (**WGS-84**)		Stages according to project documentation
		N	E	
Constructed				
[redacted]				
Planned for Construction				
[redacted]				

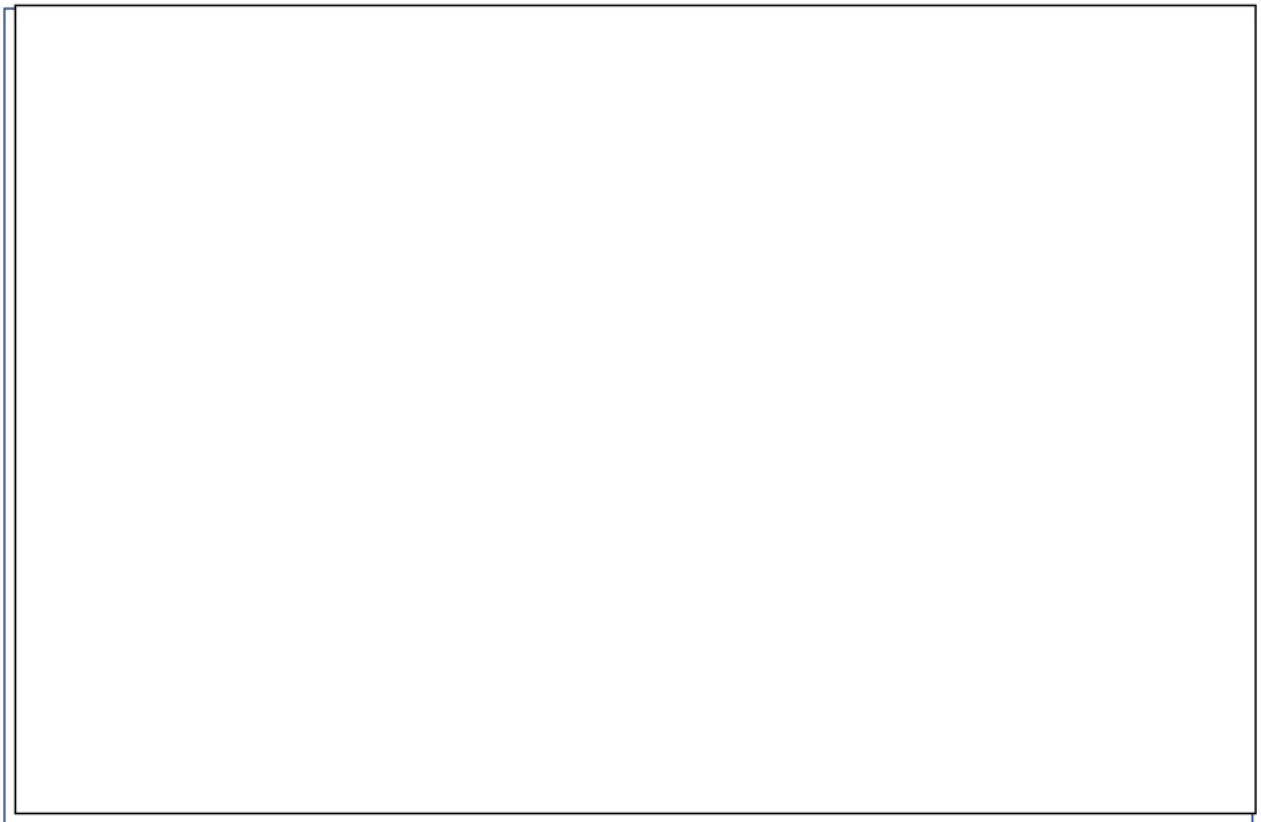




Project location in Google Map is given by pictures below. However, the map of the project location is not up to date; therefore, the wind turbines are not seen in the pictures. Due to the ongoing war conditions, Google Map is not expected to update this location.

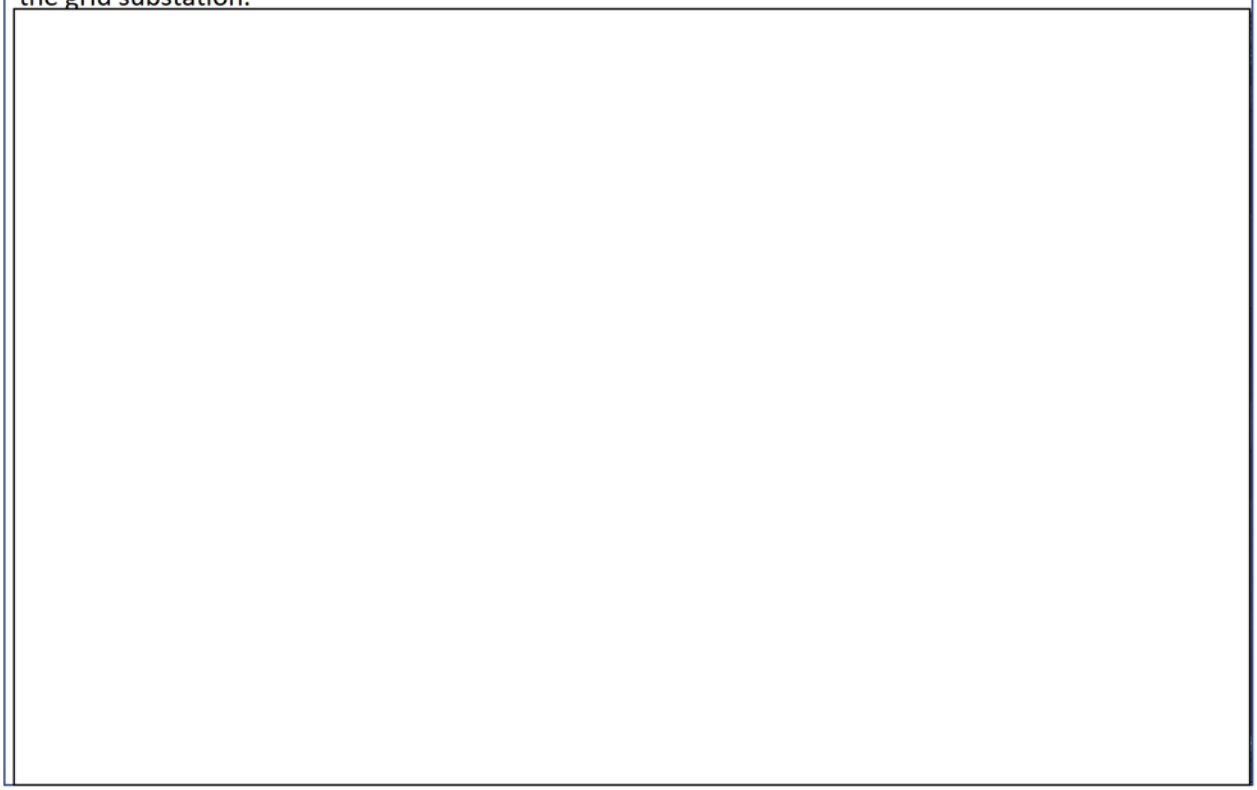
Officially planned wind turbines, including the constructed wind turbines





Constructed and being operated wind turbines

Following Google Map pictures show the locations of the constructed and operated wind turbines and the grid substation.



[redacted]

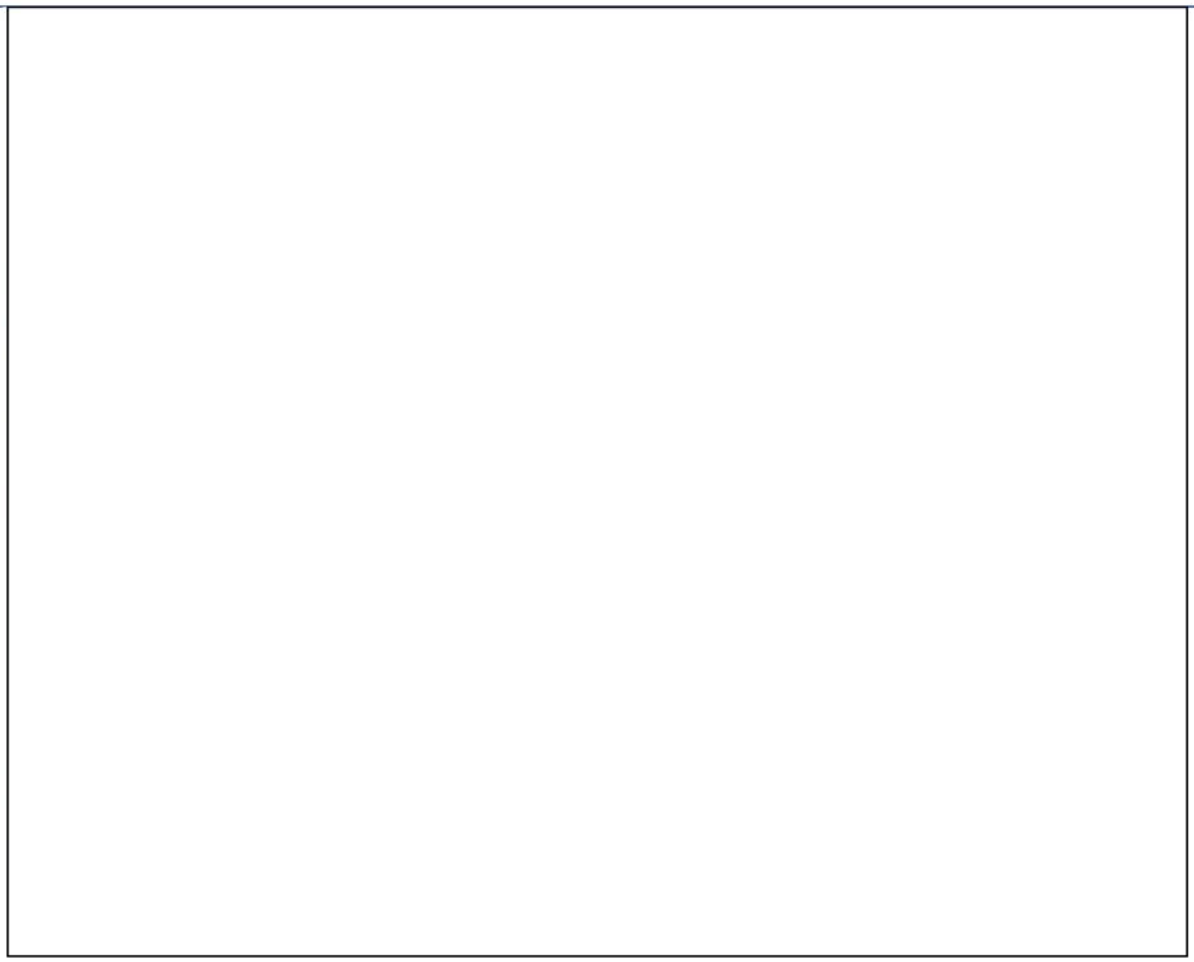
1.5 Conditions prior to implementation

Tiligulska wind farm is [redacted]

The project site is outside the settlement areas. The selection of the territory for the location of the Tiligulska WF was carried out by considering the following planning restrictions: [18]

- Protection of underground and open sources of water supply, water intakes and water treatment facilities, water pipes,
- Security zones of engineering infrastructure facilities,
- Boundary lines and sectors of transport infrastructure objects,
- Protection zones of cultural heritage objects,
- Recommended buffer zones for the placement of wind power plants,
- Minimal impact of the Tiligulska wind farm facilities on the environment and the population nearby populated areas.

[18] PostMonitoringEIA_ЗВІТ_ТилігулВЕС_ДТЕК_моніторинг ВЕУ_річний_2022.pdf, p.11-12.



As can be seen in the picture above, the project site is located on agricultural lands. However, after the implementation of the project, the project site continued to be used for agricultural purposes.

Before the implementation of the project activity, the amount of renewable electricity generated by the project activity was utilized from the carbon intensive Ukraine national grid system, which is dominated by nuclear and fossil fuel-based power plants. The total power generation capacity distribution of Ukraine grid by the end of July 2019 (excluding power generating facilities of the uncontrolled territory of the Crimean electric power system and the Donbas electricity system): 57% nuclear, 35% thermal, 7% hydro and 1% renewable (alternative energy).[21] Since the beginning of the war in Ukraine, this ratio has changed due to the destruction and lack of access to power plants in the temporarily occupied territories in the eastern Ukraine.

[19] PostMonitoringEIA_ЗВІТ_ТилігулВЕС_ДТЕК_моніторинг ВЕУ_річний_2022.pdf, p.12.
[20] Tiligulska_EIAReport_14082019_ОВД.pdf, p.35.
[21]

1.6 Technology applied

Tiligulska WF project is a Greenfield renewable wind farm, connected to the Ukraine grid system. Project has an installed capacity of 498 MW[22] with an estimated annual average electricity generation of 1,721,420.00 MWh.

[redacted]

[redacted]

[redacted]

The V162-6.0 model has an adjustable tilt wind turbine blade, with an active yawing system and a three-blade rotor. The wind turbine equipment includes: [26]

- Rotor (consists of 3 blades and hub)

[22] TiligulskaConstructionPlan2021_Проект ПЗ.pdf, Table 1.1., p.13.
[23] TiligulskaConstructionPlan2021_Проект ПЗ.pdf, Table 1.1., p.12.
[24] Технічний Паспорт на ВЕУ №153 ТВЕС Vestas_V162-6.0 MW.pdf
[25] PostMonitoringEIA_ЗВІТ_ТилігулВЕС_ДТЕК_моніторинг ВЕУ_річний_2022_compressed.pdf, p.12.
[26] Технічний Паспорт на ВЕУ №153 ТВЕС Vestas_V162-6.0 MW.pdf

- Gondola (gondola frame, body)
- Tower (consists of 5 sections)
- Electrical equipment:
  - Electric generator module (includes generator, high-voltage transformer, converter (converter), support system own needs)
  - Switchgear and cable lines to it
- Equipment for lifting service personnel and cargo
- Systems for ensuring safe operation
- Auxiliary equipment (lubrication and cooling systems, hydraulic system, etc.)
- Automation, control, and communication systems

Figure 10 Vestas V162-6.0 model[27]

The wind turbines are able to control the rotor with a variable speed and thus maintain the output power at the rated level power or close to it, even at high wind speeds. Hence, they maximize generation of output power due to optimal rotor speed and angle tilt of the blades.

Table 3 Technical features of V162-6.0 MW 50 Hz wind turbines[28]

Technical property	Explanation

[27] PostMonitoringEIA_ЗВІТ_ТилігулВЕС_ДТЕК_моніторинг ВЕУ_річний_2022_compressed.pdf, p.14.
[28] Технічний Паспорт на ВЕУ №153 ТВЕС Vestas_V162-6.0 MW.pdf.

[redacted]

Project does not provide any services outside the project boundary.

The term of operation of Tiligulska WF is 25 years. Average lifetime of the equipment is determined by the wind turbines. According the CDM Tool 10, "Tool to determine the remaining lifetime of equipment", Version 1.0, average lifetime of the wind turbines is 25 years.[29]

Project's process flow diagram is given below.

Monitoring system

The electricity generated by the project activity is transmitted from the wind turbines generators to internal substations through 35 kV cable lines. From the internal substations, transformers increase the voltage to 330 kV, following which the electricity is fed through 330 kV overhead lines into the United Energy System of Ukraine.

[redacted]

[29] Tool 10: Tool to determine the remaining lifetime of equipment, Version 01.

Data recorded from electricity meters is automatically read and fed to the Market Management System (hereafter MMS) platform. This platform belongs to NPC Ukrenergo as the commercial metering administrator. The platform stores information on electricity that has been generated and consumed. In accordance with the law, the electricity generated by the Tiligulska WF is purchased by the state-owned company SE Guaranteed Buyer under the terms of the PPA. To determine the volume of electricity purchased, SE Guaranteed Buyer uses data on the volume of electricity consumed and generated recorded by the MMS platform during a relevant month. The net volume is calculated by deducting the volume of electricity that was consumed from the volume of electricity that was generated.

[redacted]

Both generated and consumed electricity is metered by Itron brand, SL761W model power meters with an accuracy class of 0.2.[30] These meters record both generated and consumed electricity. Technical specifications of these grid substation power meters are given below:

Table 4 Tiligulska WF Monitoring power meters operated by NPC Ukrenergo[31]

Model	Serial Number	Accuracy class	Main/ Backup	Inspection date
[redacted]				

Cross-check:

For cross-checking the EGPJ,y data, the online Market Management System screenshot is to be taken for each month of electricity generation by the project activity.

First index protocols and calibration

First index protocols (meter inspection) were applied to power meters as the wind turbines taken into operation. Meter inspections were applied by the southern territory representative of the NPC Ukrenergo on different dates as given in the above table.[32]

ASCOE commissioning was applied by the Ukrainian Technological Products LLC for only eight power meters with the serial numbers of 84571184, 84571185, 84571172, 84571173, 84571186, 84571187,

[30] Accuracy class of 0.2 is indicated on the left corner of the power meters layout document, Схема лічильників ТВЕС.pdf.
[31] For inspection date of 19/10/2021 please refer to the "Meter_inspection_Акти перевірки лічильників ТВЕС від 19102021.pdf"; for inspection date of 29/05/2023 please refer to the "Meter_inspection_сч твес 1.pdf"; for inspection date of 09/02/2023 please refer to the "Meter_inspection_сч твес.pdf"
[32] Meter_inspection_Акти перевірки лічильників ТВЕС від 19102021.pdf; Meter_inspection_сч твес 1.pdf; Meter_inspection_сч твес.pdf.

84571182 and 84571183. ASCOE commissioning date of these power meters is 29/10/2021. ASCOE is the "Automated system of commercial electricity accounting" in Ukraine. [redacted]

Regarding the calibration terms, meters must be calibrated every six years per the Ukraine regulations ("On the approval of inter-verification intervals of legally regulated measuring equipment in operation, by categories, z1416-16, 21/02/2020 (edition)", (item 39 in the table of the regulation).[33] Meters are calibrated (this term is interchangeable used as verified and/or parameterized in Ukraine energy market) by specialized organizations that have the required permits and certified metrological equipment. As per the regulation, if the calibration results show that the power meter is not working properly, then the electricity distributor company replaces the power meter. Since the project's operation date is 01/02/2022, the first calibration will be applied in 2027. Therefore, there is no calibration process applied so far. Based on this regulation, the project's calibration frequency is 6 years.

During the first monitoring period, 01/02/2022-31/01/2024, no calibration was applied to the power meters. The first calibration will be applied after 6 years since the operation start date. Hence the first calibration was expected to be applied in 2027 under normal no-war conditions.

1.7 Roles and responsibilities

Dmytro Fedotov is the contact person on behalf of the project proponent, D. TRADING INTERNATIONAL SA.

Kilittaşı Mühendislik Müşavirlik İnşaat Ticaret Ltd. Şti. provides carbon consultation services for the project activity.

1.7.1 Project proponent(s)

Organization Name	**D. TRADING INTERNATIONAL SA**
Role in the project	**Project proponent**
Contact person	Dmytro Fedotov
Title	Director
Address	Neuhofstrasse 24, 6340, Baar, Switzerland
Telephone	+41227154611

[33] https://zakon.rada.gov.ua/laws/show/z1417-16#Text. (Due to the current war in Ukraine, accessing to the link outside Ukraine may not be allowed, however at the writing of this document, the link was accessible). This document is provided as pdf, PowerMetersCalibrationRegulation.pdf.
Footnote 6, translated into English: "For single-phase electromechanical active electricity meters (accuracy classes 0.5–2.0 and A, B), the calibration interval is 8 (16) years; static single-phase active and reactive electricity meters (accuracy classes 0.2S-3.0 and A, B, C) - 6 (16) years; electromechanical three-phase active and reactive electricity meters (accuracy classes 0.5-3.0 and A, B) - 4 (10) years; active and reactive electricity meters static three-phase (accuracy classes 0.2S-3.0 and A, B, C) - 6 (10) years; active and reactive electricity meters (accuracy classes 0.01-0.1) - 1 year." The project grid power meters are subject to 6 years of calibration.

Email	FedotovDS@d.trading

1.7.2 Others involved in the project

Organization name	**Kilittaşı Mühendislik Müşavirlik İnşaat Tic. Ltd. Şti.**
Role in the project	**Carbon Consultant**
Contact person	İncigül Polat Erdogan
Title	Environmental Engineer, MSc.
Address	Ceyhun Atuf Kansu Caddesi No.176/15 Cankaya/Ankara 06520 TURKEY
Telephone	+90 538 327 56 57
Email	iperdogan@gmail.com

1.8 Chronological plan/implementation

Major chronological dates for the project activity:

- Project start date is 01/02/2022.
- The baseline period start date is the same as the project operation start date, 01/02/2022.
- The term of operation of Tiligulska WF is 25 years. Average lifetime of the equipment is determined by the wind turbines. According the CDM Tool 10, "Tool to determine the remaining lifetime of equipment", Version 1.0, average lifetime of the wind turbines is 25 years.[34]
- Monitoring frequency is planned as 2 years + the rest of the monitoring periods will be determined later. The crediting period of the project activity is 10 years with no renewal.
- The first monitoring period is 01/02/2022-31/01/2024.
- Project validation agreement was signed in 2023. Joint implementation of the validation and the verification of the first monitoring period is expected to be completed in 2024.

1.9 Eligibility

Tiligulska WF project is a renewable electricity generation project as per the CDM methodology, ACM0002 Grid-connected electricity generation from renewable sources Version 21.0. Its applicability conditions and how the project complies with these conditions are provided in Section 4.2. Hence, according to the ACM0002 Grid-connected electricity generation from renewable sources Version 21.0., project is eligible for carbon certification within the framework of CDM.

As per ICR Requirement Document Version 5.0, Section 3.3, project is also eligible for ICR carbon certification with the justifications given below.

All projects that lead to mitigation of climate change, conforming to requirements herein and	Project is eligible as per the ACM0002 Grid-connected electricity generation from

[34] Tool 10: Tool to determine the remaining lifetime of equipment, Version 01.

ISO 14064-2 are eligible for registration. Projects may follow methodologies, e.g. approved methodologies in order to facilitate implementation, subject to conformity to the requirements herein and ISO 14064-2.	renewable sources Version 21.0, which is in compliance with the ISO 14064-2:2019.
All projects with a start date after 1. January 2013 are eligible for registration with ICR subject to conformity to other requirements. Projects with a start date before 1. January 2020 shall demonstrate historical additionality (section 4.4.1) from its implementation and continuance of additionality at validation.	Tiligulska WF operation start date is 01/02/2022. Project's additionality is assessed according to the Section 4.4.1 requirement of the ICR Requirement Document Version 5.0.
Projects with a start date before 1. January 2020 shall pre-register the project, have signed a contract with an approved VVB for validation/verification, and start the validation process before 31. December 2023.	Tiligulska WF operation start date is 01/02/2022.

As per ICR Requirement Document Version 5.0 section 3.4.2, the crediting period is chosen as 10 years with no option of renewing the crediting period. Hence the project complies with this requirement.

As per ICR Requirement Document Version 5.0 section 3.8, Tiligulska WF project did not receive and/or did not apply for any other GHG-related environmental crediting certifications. Also, the project is not involved in any other GHG emissions trading program or not subject to binding emission limit. Hence the project complies with this requirement

1.10 Funding

No public funding and/or Official Development Aid finances are used within the project. Project was implemented and has been operated by the project legal owner, DTEK Tiligulska Wind Electric Plant LLC, with its own financial resources and at funds from financial institutions on the terms of a term loan.

1.11 Ownership

Tiligulska WF is legally owned and operated by the DTEK Tiligulska Wind Electric Plant LLC.[35]

DTEK Tiligulska Wind Electric Plant LLC authorized D. TRADING INTERNATIONAL SA to register in the ICR as the project proponent who shall be entitled to register the renewable energy project in the ICR and issue the ICCs generated by such renewable energy project.

[35] System usage agreement document, power purchase agreement document, electricity sale documents are the proof documents.

1.12 Implementation status of the project

Implementation status of the project activity:

- Completed turbines were successfully implemented and has been in operation since 01/02/2022.
- Tiligulska WF started to operation on 01/02/2022.
- Average lifetime of the equipment is determined by the wind turbines. According the CDM Tool 10, "Tool to determine the remaining lifetime of equipment", Version 1.0, average lifetime of the wind turbines is 25 years.[36]
- Baseline period is the start date of the project activity, 01/02/2022.
- During the first monitoring period, 01/02/2022-31/01/2024, Tiligulska WF achieved 256,680 tCO_2 emission reductions. Estimated baseline emission reduction by the project activity is 1,073,211 tCO_2/year.

During the first monitoring period, the war in Ukraine started on February 2022. Despite the war, the project successfully operated.

1.13 Other certifications

Tiligulska WF does not have any other certificates.

1.14 Double counting, issuance and claiming

Tiligulska WF project did not receive and/or did not apply for any other GHG-related environmental crediting certifications.

1.14.1 Other registration and double issuance

Tiligulska WF project has not been registered or is not seeking registration under any other GHG programs. The project did not apply to any other GHG program before

Is the project registered or intends to be registered with another GHG program?
☐ Yes,
☒ No

Has the project been rejected by another GHG program?
☐ Yes,
☒ No

[36] Tool 10: Tool to determine the remaining lifetime of equipment, Version 01.

1.14.2 Double claiming and other instruments

Are the project activities also included in a GHG emissions trading program or subject to binding emission limit?

☐ Yes,
☒ No

Has the project activity applied for, received, or is planning to receive instruments from another GHG-related environmental crediting system, e.g. IREC or Guarantees of Origin.

☐ Yes,
☒ No

Do project activities affect GHG emissions accounted for within a value chain (goods/service, i.e. scope 3 emissions and the project proponent or Authorized representative a buyer or a seller of such goods/services?

☐ Yes,
☒ No

1.15 Other benefits

Regarding sustainable development achievements, project activity contributes to the diversification of energy mix of Ukraine from fossil fuel to renewables; and avoids GHG emissions from Ukraine grid system. Project's SDG goals are provided in the following table.

In 2020, the project launched a new long-term development strategy which is based on the UN Sustainable Development Goals and meets the ESG principles. The project's efforts in the field of environmental, sustainable development are aimed at reducing the company's carbon footprint; promoting the rational use of resources; improving industrial safety and preserving the health of the employees; ensuring ethical business conduct and compliance with anti-corruption standards; and maintaining an open dialogue with the personnel and wider society. This approach is applied throughout the value chain and at all levels of internal management. Tiligulska WF guided by the ESG strategy and the SCM Sustainable Development Policy[37].

SDG impacts during the monitoring period

Please provide information on SDGs the projects impact towards achieving them.

SDG target	Indicator (text from the SDG indicator)	Net impact (implemented activities to increase or decrease)	Current contributions	Lifetime contributions
1. No poverty	N/A	N/A	N/A	N/A
2. Zero hunger	N/A	N/A	N/A	N/A
3. Good health and well-being	N/A	N/A	N/A	N/A
4. Quality education	N/A	N/A	N/A	N/A
5. Gender equality	N/A	N/A	N/A	N/A
6. Clean water and sanitation	N/A	N/A	N/A	N/A
7. Affordable and clean energy	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix	Increase	Tiligulska WF contributes to increase of renewable energy share in the total final energy consumption of Ukraine through providing 1,721,420.00 MWh clean energy annually to the Ukraine grid.	During the first monitoring period, Tiligulska WF contributed 399,190.66 MWh clean energy to the Ukraine grid.

[37] https://dtek.com/en/sustainable_development/reportsesg/2020

	7.2.1 Renewable energy share in the total final energy consumption			
8. Decent work and economic growth	8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value 8.5.1 Average hourly earnings of employees, by sex, age, occupation and persons with disabilities	Increase	During construction and operation period, the project directly and indirectly generates job opportunities, which results in enhancing local employment and contributing to reducing local poverty. Project provided short term jobs during construction; and has been providing long term jobs during operation. In total, [redacted]	During the first monitoring period, [redacted]
9. Industry, innovation, and infrastructure	N/A	N/A	N/A	N/A
10. Reduced inequalities	N/A	N/A	N/A	N/A
11. Sustainable cities and communities	N/A	N/A	N/A	N/A
12. Responsible consumption and production	N/A	N/A	N/A	N/A

13. Climate action	13.2 Integrate climate change measures into national policies, strategies and planning 13.2.2 Total greenhouse gas emissions per year.	Decrease	Project activity, by producing renewable electricity, will annually achieve 1,073,211 tCO_2/year emission reductions.	During the first monitoring period, Tiligulska WF achieved 256,680 tCO_2 emission reductions.
14. Life below water	N/A	N/A	N/A	N/A
15. Life on land	N/A	N/A	N/A	N/A
16. Peace, justice, and strong institutions	N/A	N/A	N/A	N/A
17. Partnership for the goals	N/A	N/A	N/A	N/A

1.16 Host country attestation

Host country attestation for the project activity has not obtained yet due to the war.

☐ Host country attestation

☒ No host country attestation

1.17 Additional information

Detailed calculations of the emission reduction values are included separately in an excel sheet submitted along with this PDDMR.
All information is provided in this document. There is no additional information that can be indicated.

1.17.1 Confidential/sensitive information

In accordance with the resolution of the National Energy and Utilities Regulatory Commission (hereafter NEURC) No.349 dated 26/03/2022 "On the protection of information that may be classified as restricted information under martial law, including information on critical infrastructure facilities" during the martial law in Ukraine and until the last day of the month following the month of termination or lifting of martial law, electricity producers shall ensure limited access to and protection of information on power plants, including, but not limited to, the location, condition and modes of operation of power equipment of electricity producers, dispatch control and transmission of electricity, geodetic information and technical system of electricity facilities, information on substations, other information available on websites on power equipment of electricity and heat producers, electricity transmission and distribution systems.[38]

Considering that Tiligulska WF is an electricity producer in the energy sector, information about the project, including this documentation, is classified as restricted information (with limited access) and cannot be made publicly available until the end of the war in Ukraine.

Please see the Appendix I for confidential sections of this PDDMR report.

[38] Щодо захисту інформації, яка в умовах воєнного стану може бути віднесена до інформації з обмеженим доступом, у тому числі щодо об'єктів критичної інфраструктури | Національна комісія, що здійснює державне регулювання у сферах енергетики та комунальних послуг (nerc.gov.ua)

2. Crediting

2.1 Project start date

Project start date is the official date when the produced electricity started to supply the Ukraine grid system.

Project start date	01/02/2022

2.2 Expected operational lifetime or termination date

The term of operation of Tiligulska WF is 25 years. Average lifetime of the equipment is determined by the wind turbines. According the CDM Tool 10, "Tool to determine the remaining lifetime of equipment", Version 1.0, average lifetime of the wind turbines is 25 years.[39]

2.3 Crediting period

The crediting period of the project activity is 01/02/2022-31/01/2032. Both days are inclusive.

Start date of crediting	01/02/2022
Crediting period	☐ Five years, renewable twice. ☒ Ten years, fixed. ☐ Fifteen years, renewable twice (CDR only). ☐ Other, provide information on how that conforms with ICR requirement document.

2.4 Calander year of crediting

The crediting period of the project activity is 01/02/2022-31/01/2032. Estimated emission reductions are given below.

Calendar year of crediting	Estimated GHG emission mitigations (t CO_2-e)
01/02/2022 to 31. January 2024	676,253
1. January 2023 to 31. December 2023	1,106,873
1. January 2024 to 31. December 2024	1,106,873
1. January 2025 to 31. December 2025	1,106,873
1. January 2026 to 31. December 2026	1,106,873
1. January 2027 to 31. December 2027	1,106,873
1. January 2028 to 31. December 2028	1,106,873

[39] Tool 10: Tool to determine the remaining lifetime of equipment, Version 01.

1. January 2029 to 31. December 2029	1,106,873
1. January 2030 to 31. December 2030	1,106,873
1. January 2031 to 31. December 2031	1,106,873
1. January 2032 to 31/01/2032	94,008
Total estimated GHG emission mitigations during the crediting period (t CO_2-e)	**10,732,118**
Total number of years (yrs)	10
Annual average (t CO_2-e)	**1,073,211**

3. Safeguards

3.1 Statutory requirements

Tiligulska WF project was implemented in accordance with the Ukraine national laws and regulations, being subject to numerous environmental, health and safety laws and regulations in Ukraine. These laws and regulations require the project to obtain and maintain permits and approvals, undergo environmental impact assessments (as relevant) and review processes, and implement environmental, health and safety programs and procedures to control risks associated with the ownership, construction, operation and decommissioning of the project. Additionally, the project's permits and approvals impose various conditions on the project on a continuing basis.

Project received all necessary permissions from the related governmental organizations.

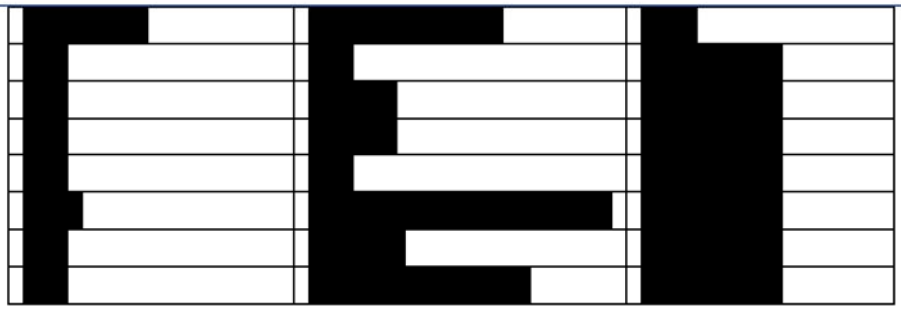
Relevant applicable laws and regulations to the project activity:

- Law on the Electricity Market of Ukraine[40]
- Market Rules[41]
- Transmission System Code[42]
- Distribution Systems Code[43]
- Commercial Metering Code[44]
- Law on Environmental Protection of Ukraine[45]
- Law on Alternative Energy Sources[46]
- Law on Labor Protection[47]

Regarding generating electricity and supplying it to the Ukraine grid, project received following permits, licenses, and made the agreements as per the Law on the Electricity Market of Ukraine, Market Rules, Transmission System Code, Distribution System Code and Law on Alternative Energy Sources:

1. DTEK Tiligulska Wind Electric Plant LLC has entered into the System Usage Agreement with the Private Joint Stock Company National Power Company Ukrenergo (hereafter NPC Ukrenergo) under No.06/1147-19 dated 22/05/2019. This agreement relates to the connection of the project`s facility to the Ukraine grid. NPC Ukrenergo is the electrical networks of the Service provider in Ukraine.[48]
2. power purchase agreement (hereafter PPA) with the State Enterprise Guaranteed Buyer under No.990/01 dated 18/11/2019.[49]
3. The project received the electricity generation licenses by the resolutions of the National Energy and Utilities Regulatory Commission (hereafter NEURC) with the following numbers.[50]

[40] https://zakon.rada.gov.ua/laws/show/2019-19?lang=en#Text
[41] https://zakon.rada.gov.ua/laws/show/v0307874-18?lang=en#Text
[42] https://zakon.rada.gov.ua/laws/show/v0309874-18?lang=en#Text
[43] https://zakon.rada.gov.ua/laws/show/v0310874-18?lang=en#Text
[44] https://zakon.rada.gov.ua/laws/show/v0311874-18?lang=en#Text
[45] https://zakon.rada.gov.ua/laws/show/1264-12?lang=en#Text
[46] https://zakon.rada.gov.ua/laws/show/555-15?lang=en#Text
[47] https://zakon.rada.gov.ua/laws/show/2694-12?lang=en#Text
[48] NPCUkrenergo_SystemUsageAgreement_2019-05-22 06_1147-19 Договір на приєднання.pdf
[49] GuaranteedBuyer_PowerPurchaseAgreement_Договір prePPA №990_01 від 18.11.2019.pdf
[50] Please see the "01_EnergyGenerationPermission" folder for the licenses.



4. The Energy and Environmental Protection of Ukraine released a conclusion report, titled as "Conclusion from the Environmental Impact Assessment" for the Tiligulska WF project with the number of 7-03/12-2019653789/1 and date of 21/10/2019. This conclusion report approves the project's EIA assessment and gives permission for the implementation of the project.[51]

3.2 Potential negative environmental and socio-economic impacts

As per the Law on Environmental Protection of Ukraine[52], an environmental impact assessment of the project activity was carried by an independent company, UKREKOCONSALT LLC. The results of the assessment were gathered within the EIA Report, dated 14/08/2019.[53] The EIA report concluded that potential environmental impacts were found to be environmentally and ecologically acceptable and relevant mitigation measures were to be taken by the project owner during construction and operation.

Environmental impacts of the project activity

Impact on air quality[54],

Operation of the Tiligulska WF does not produce any air pollutants due to that project activity does not involve any combustion activities that could release air pollutants into the atmosphere. Only during the construction phase, the major impact on the air pollution was due to the emissions of pollutants contained in exhaust of vehicles and construction machinery, as well as due to release of dust into the air during bulk materials handling, movement of vehicles transporting bulk materials, concrete, equipment, and during electric welding operations as well. But this was temporary and the impact of airborne dust on the air quality was assessed as low and short-term.

Impact on the geology and soil layers[55]

Project's main impact on soil structure take place during the construction phase through constructions of foundations of wind turbines, access roads and laying of lines that would create disruption in soil integrity. Construction impacts include the clearing of vegetation, uprooting of trees, as well as removal of the top layer of soil and its compaction in the territories of privately owned lands. However, through the mitigation measures, the soil layer was recovered through reclamation during the construction. The removed vegetative layer of the soil was carefully stacked, and its

[51] TiligulskaWF_EIAConclusion21102019_Висновок_ОВД_500.pdf
[52] https://zakon.rada.gov.ua/laws/show/1264-12?lang=en#Text
[53] Tiligulska_EIAReport_14082019_ОВД.pdf.
[54] Tiligulska_EIAReport_14082019_ОВД.pdf, p.81-90.
[55] Tiligulska_EIAReport_14082019_ОВД.pdf, p.103-114.

preservation was ensured for further use at conducting reclamation works. These measures are discussed in detail in the EIA report.

The other impact on soil layer is the possible leakages of hazardous liquids such as insulating oil, paints, fuels, and other contaminants that can be generated during the construction. Soil contamination can also be the result of fuel and lubricant leaks materials from vehicles and equipment. However, similar risks exist for any of which construction. Since leaks are possible in small volumes, the area the surface that can be contaminated is small. These risks were mitigated during the construction through applying maximum measures, such as application of maximum measures to reduce the amount of waste at construction, provision of preventive maintenance of machines and mechanisms, which has prevented contamination of the soil layer with fuel and lubricants etc.

The EIA report concluded that the project's impact on soil layer can be mitigated through applying those measures.

Impact on the water resources[56]

10 Considering the remoteness of these objects from the Tiligulska WF, the risk of a negative impact on them is rated as low.

Regarding the ground water assessment, during construction and operation of wind turbines, following effects were estimated on groundwater, including pollution from corrosion of the foundations of supports, wind turbines, engineering networks, emergency spills of petroleum products. In general, during the construction works of the Tiligulska WF and other technological work processes, surface water pollution can occur mainly because of removal of finely dispersed soil particles, washing from the surface of the territory construction waste fuel and lubricant materials, soluble and insoluble road construction materials, varnishes, solvents, washing liquids, products combustion of fuel, industrial waste and other harmful substances and components.

Following measures were taken to minimize the effects on water resources:

- organization of regular cleaning of territories with the maximum mechanization of cleaning works, construction fencing sites with arrangement of surface water drainage on a temporary basis

to the system of hydro-insulating trays in sedimentation tanks with their cleaning on 50-70% and further cleaning in case of non-compliance with permissible standards.

- Localization of parking areas and refueling points for road construction machines and mechanisms, as well as areas where spills occur and straits of raw materials and intermediate products with removal of surface flow into the cleaning system.

- Arrangement of storage and transportation of road construction materials; increasing requirements for compliance with the rules of technical operation road construction machines and vehicles.

- Cleaning and washing bodies of dump trucks, concrete trucks and others construction machines must be carried out in specially designated places. Distant and purified water after washing can be reused. Responsibility for proper handling and maintenance of construction mechanisms, equipment and transport is the responsibility of a specialized contracting organization.

[56] Tiligulska_EIAReport_14082019_ОВД.pdf, p.92-102.

Consideration of specific features of construction and operation of Tiligulska WF, the EIA report concluded that given the appropriateness of the chosen location and mitigation measures taken during the construction and operation, there were no significant negative impacts on water resources.

The Noise and the Vibration[57]

During the construction period, the main source of noise was the construction of the roads. However, the roads and construction fields were located at a distance from populated areas, which excluded the creation of permanent effect of acoustic discomfort to local population.

During the operation phase, the main source of noise would be the wind turbines. However, noise from wind turbines was not expected to be observed at distances of more than 100 m from the sources. At 100 m and beyond, noise of wind turbines does not exceed the threshold levels of human perception.

The vibration of the structure, caused by the rotation of individual elements of the wind turbine, completely extinguishes at the level of the load-bearing elements and the foundation of the wind turbine, and not transmitted to the surrounding area and environment. Electromagnetic fields emitted by WF and cable lines power transmission, were not expected to pose a threat to human health and the environment as per the EIA assessment.

The Shadow Flicker Effect[58]

Wind turbines, including their moving parts, in sunny weather, cast a shadow on the ground and other objects. If the surface of the wind turbine blade side, which turned to the Sun is shiny, then it reflects the Sun's rays. For those who live near the wind power plant (at 400-700 m), the flickering of the shadow and/or glare can bring discomfort to life. The flickering of the shadow occurs when the sun's rays pass behind the wind turbine rotor, casting a shadow on neighboring areas.

In the project activity, to reduce the shadow flicker effect, wind turbines' blades were covered with a matte material. Besides this mitigation measure, EIA report also conducted a modelling study, analyzing the effect of throughout the year, including four seasons. The modelling results have shown that no settlement would be exposed to the stroboscopic effect of 100 hours per year or more. The EIA report concluded that shadow and flicker effect is insignificant and would not affect well-being and health of the population of local settlements.

The Avifauna effect[59]

Retrospective description of the species composition of birds on the project area of the Tiligulska WF and the adjacent territory includes about 62 species of wintering birds. In years with high snow cover, the species composition and number of birds decreased significantly. Moving birds in winter did not have a mass character. By mid-December, they flew away. Most of the wetland birds migrating are primarily geese and rowan species of birds. Thus, the probability of their collision with wind turbines is minimal. It has been established that a total of 83.3% of the total bird's avian complex. However, the height intervals of wind turbines are at a safe point.

[57] Tiligulska_EIAReport_14082019_ОВД.pdf, p.262-263.
[58] Tiligulska_EIAReport_14082019_ОВД.pdf, p.214-221.
[59] TiligulskaWF_EIAConclusion21102019_Висновок_ОВД_500.pdf, p.10-11.

Waste management

As per the relevant waste management regulations of Ukraine, the project activity must comply with the requirements of the regulations for handling the construction and operation phase wastes. During the construction, the construction waste, which is classified as low-hazard waste, was properly disposed to the landfills as directed by the local authorities. During the operation, the project activity generates municipal waste and industrial waste (oil from cleaning turbines). Municipal waste is stored temporarily in containers and industrial waste is temporarily stored in containers in the administrative building. The project owner signed a contract with a licensed company to collect municipal waste and industrial waste such as oil waste.[60]

Socio-economic aspects, positive social outcomes

As per the EIA report, the construction and operation of the project activity would lead positive outcomes to local life.[61]

The project activity created a positive benefit to the local economy through providing new jobs and involving the local firms and companies in the supply of materials and provision of services. By creating new jobs, the project contributed to reducing the percentage of labor migrations and balances the gender situation in the region. During the operation, the project created additional payments in the form of taxes and lease payments for land use to central and local budgets. Additional payments helped the development of educational and cultural institutions, health care institutions, which are financed from these budgets. Regarding the demographic structure, the project was not expected to create any significant changes in the already existing multinational ethnic composition of Berezansky communities' district. Project also contributes to improvement of local transport infrastructure, and improvement of the state of the fire safety through construction of a fire station.

Long term positive impact of the project is that it generates energy without emitting greenhouse gas emissions, contributing to the reduction of air pollution. It also contributes to the diversification of energy supply and reducing dependence on fossil fuels.

3.3 Consultation with interested parties and communications

In order to get local residents' opinion about the project activity, a local stakeholder consultation meeting was planned.
The meeting agenda was established as below:

1) Brief description of the project, including how it generates clean electricity,
2) Planned registration of the project activity to the International Carbon Registry for carbon emission reduction certification,
3) Project's environmental effects and its compliance with the environmental regulations of Ukraine,
4) Project's positive impact on society,
5) Climate change and the project's contribution global climate change mitigation efforts,
6) Project's contribution to United Nations SGDs,

[60] Please see the 12_WasteHandling folder.
[61] Tiligulska_EIAReport_14082019_ОВД.pdf, p.297; PostMonitoringEIA_ЗВІТ_ТилігулВЕС_ДТЕК_моніторинг ВЕУ_річний_2022_compressed.pdf, p.11.

7) How stakeholders can relay their opinions and comments to the project activity, indicating the grievance book located at the Botievska district municipality office, phone numbers and email address.

The documents required to hold the stakeholder consultation were prepared. These documents include the stakeholder meeting announcements, stakeholder meeting attendee forms, and stakeholder meeting attendee signature list.

Although all the preparations were done, a live meeting could not be performed because of the war conditions.[62] However, instead, project legal owner conducted a community survey face-to-face to get their opinion about the Tiligulska WF and received feedback and comments with a positive assessment of the project's impact on the region. These comments are provided at the Appendix of this report.

Generally, all the stakeholders provided positive comments about the project as can be seen in the stakeholder comments forms. The most important positive aspects evaluated by the stakeholders are provided below:

- Project generated clean energy
- Project provides new jobs, and additional income to local budgets through taxes
- Project contributes to development of local community
- No pollution to environment

At the current stage, stakeholders can access plant manager by phone and face-to face ways, as well they can also relay their complaints through the grievance notebook located at the Tiligulska WF Plant Office. Stakeholders can also find the phone number of the project legal owner through their website and relay their comments. If stakeholders provide negative feedback, the project plant manager will contact the stakeholder and will solve the issue.

No resettlement or physical displacement of people is associated with the project activity.

[redacted]

Figure 12 Tiligulska WF Grievance Book located at the Plant Office

During the first monitoring period, 01/02/2022-31/01/2024, no comments have been received from the stakeholders.

3.3.1 Stakeholders and consultation

During the first monitoring period 01/02/2022-31/01/2024, no comments have been received from the stakeholders.

Stakeholder	Mykolaiv district residents
Legal rights	Mykolaiv residents do not have any collective and conflicting rights with the project legal owner and/or the project proponent.
Diversity	Stakeholders are just people living in the Mykolaiv district.
Location	Mykolaiv district
Effects	Stakeholders from the district are not directly affected by the project. On the contrary, project activity provided long and short-term jobs. Since the project does not emit and/release any environmental pollution, this also does not affect the residents.

Date of consultation	24/11/2023
Stakeholder engagement	Due to the war, no announcement was made; face to face meeting was applied.
Consultation	The meeting agenda was established as below: 1) Brief description of the project, including how it generates clean electricity, 2) Planned registration of the project activity to the International Carbon Registry for carbon emission reduction certification, 3) Project's environmental effects and its compliance with the environmental regulations of Ukraine, 4) Project's positive impact on society, 5) Climate change and the project's contribution global climate change mitigation efforts, 6) Project's contribution to United Nations SGDs, 7) How stakeholders can relay their opinions and comments to the project activity, indicating the grievance book located at the Tiligulska WF plant office, phone numbers and email address of the project owner.
Stakeholder input	Stakeholder comments were received by face-to-face meeting. Since the face-to-face meeting was done on 24/11/2023, no latest update applied to the meeting. Since the project activity is already implemented in 2022, there is no design change too that would require a new stakeholder meeting.
Free prior informed consent	Consent for the implementation of the project was obtained from the interested parties through public speeches and meetings organized by the local management of the community.[63]
Conclusion	Generally, all the stakeholders provided positive comments about the project as can be seen in the stakeholder comments forms. The most important positive aspects evaluated by the stakeholders are provided below: • Project generated clean energy • Project provides new jobs, and additional income to local budgets through taxes • Project contributes to development of local community • No pollution of the environment. There were no negative factors of the project given by residents.
Ongoing consultation	At the current stage, stakeholders can access the plant manager by phone and face-to face ways, as well they can also relay their complaints through the grievance notebook located at the Tiligulska WF office building. Stakeholders can also find the phone number of the project legal owner through their website and relay their comments. If stakeholders provide negative feedback, the project plant manager will contact the stakeholder and will solve the issue.

[63] PublicDiscussions_Звіт про громадське обговорення ОВД.pdf

3.3.1 Public comments

During the first monitoring period, 01/02/2022-31/01/2024, no comments have been received from the stakeholders.

Following comments received from the stakeholders during the face-to-face meeting conducted on 24/11/2023 at Mykolaiv district.

Comments received	Action taken
Clean energy Development of the local community Additional income to the local budget	No action requires
Development of the local community territory Ontime payments into to the local community budget	No action requires
Development of the community infrastructure Additional jobs Electricity generation without pollution	No action requires
Absence of pollution of environment	
Considerable contribution into capacity of energy system Energy generation without pollution New jobs for local communities Additional income to local budget	No action requires
Green energy generation in Ukraine New jobs Increase of income for local budget	No action requires
Green energy generation in Ukraine	No action requires

Additional source of energy More jobs and taxes	
Clean energy generation New jobs Development of local infrastructure Save and stable supply of energy	No action requires
Increase of taxes for local budget Green energy development in Ukraine More jobs	No action requires
Green energy generation in Ukraine More jobs Increase of taxes into local budgets	No action requires
Green energy generation in Ukraine More jobs Increase of taxes into local budgets	No action requires
Green energy generation	No action requires
Clean energy generation	No action requires
Additional jobs for local community Clean energy generation	No action requires
Additional jobs Green energy development in Ukraine Alternative source of energy	No action requires
Green energy development in Ukraine Additional source of energy Increase of new jobs and taxes for local budget	No action requires
New jobs for locals Clean energy generation	No action requires
No bad impact on the environment	No action requires
Green energy development in Ukraine Additional source of energy Increase of new jobs and taxes for local budget	No action requires
No bad impact on the environment Additional source of energy New jobs for locals	No action requires

3.4 Environmental impact assessment

As per the Law on Environmental Protection of Ukraine[64], an environmental impact assessment of the project activity was carried by an independent company, UKREKOCONSALT LLC. The results of the assessment were gathered within the EIA Report, dated 14/08/2019.[65] The EIA report concluded that potential environmental impacts were found to be environmentally and ecologically acceptable and relevant mitigation measures were to be taken by the project owner during construction and operation. Following this EIA assessment, the Energy and Environmental Protection of Ukraine

[64] https://zakon.rada.gov.ua/laws/show/1264-12?lang=en#Text
[65] Tiligulska_EIAReport_14082019_ОВД.pdf.

released a conclusion report, titled as "Conclusion from the Environmental Impact Assessment" for the Tiligulska WF project with the number of 7-03/12-2019653789/1 and date of 21/10/2019. This conclusion report approves the project's EIA assessment and gives permission for the implementation of the project.[66]

3.5 Risk assessment

For the project activity, current war bears significant risk for the proper operation of the project activity. Risks include possible damages to the Tiligulska WF, or damages to the Ukraine grid system which may lead temporary halts in the operation of the plant. Besides the war, which is out of the control of the project owner, the other risks may include operational and technical risks given in the table below.

These risks, however, through the routine maintenance activates are eliminated. The following measures have been taken to mitigate those technical and operational risks. These technical measures eliminate the risks that would cause disruption of GHG emission reductions by the project activity.

	Risks identified	Mitigation measures
Risk 1	Possible negative outcomes to the project activity by the war	There is no measure to avoid this risk; this is beyond the control of the project's legal owner and/or project proponent.
Risk 2	Any technical failures that may result in halt of the operation	To ensure reliable, safe, and efficient operation of equipment in accordance with the requirements set forth by applicable Ukrainian regulations, 24/7 operational control of equipment, as well as maintenance and repair of equipment has been arranged at Tiligulska WF. Operational control is performed using a SCADA system operating in an online mode. Whenever any deviations from the established operating modes are detected, the shift supervisor promptly takes measures to eliminate the underlying causes. Guidelines on the safe operation of the equipment have been put in place. Each year, annual and multi-year equipment repair and maintenance schedules are prepared. These maintenance/repair schedules specify which equipment should undergo maintenance/repair in which month. Based on these schedules, the budget for equipment maintenance and repairs is planned in advance. The maintenance and repair of equipment is performed by contracting organizations based on

[66] TiligulskaWF_EIAConclusion21102019_Висновок_ОВД_500.pdf

		the relevant service agreements. Minor repairs of equipment are performed by the personnel of Tiligulska WF. The energy availability factor of the equipment is calculated monthly based on equipment operation data. If this coefficient falls below the planned availability coefficient, the root causes are analyzed and, if possible, measures are taken to eliminate them.
Risk 3	Any type of human based operational risks that may result in halt of the operation.	The personnel undergo annual in-house training and pass exams on safe operation of the equipment. The scope and frequency of equipment maintenance are determined based on the relevant technical documentation and regulatory requirements, and following the inspection of the equipment.

As it can be seen in Section 3.2, project environmental impacts were low, or there are no negative effects, or within the limits of national regulations.

Operation of the project does not generate risks to the environment. Sewage and solid wastes and hazardous wastes have been handled as per the national regulations during the first monitoring period. Generated wastes are collected by the subcontractor regularly.

The operation of the Tiligulska WF has not generated risk to local communities during the first monitoring period. Project did not generate/release any dangerous wastes to environment; generated noise by wind turbines has been within the environmental limits; ornithology report has shown that project is not located on bird migration paths etc.

3.5.1 Additional information on risk management

Before its implementation, the project's potential adverse effects during construction and operation were analyzed through conducting an environmental impact analysis. As per the Law on Environmental Protection of Ukraine[67], an environmental impact assessment of the project activity was carried by an independent company, UKREKOCONSALT LLC. The results of the assessment were gathered within the EIA Report, dated 14/08/2019.[68] The EIA report concluded that potential environmental impacts were found to be environmentally and ecologically acceptable and relevant mitigation measures were to be taken by the project owner during construction and operation. Following this EIA assessment, the Energy and Environmental Protection of Ukraine released a conclusion report, titled as "Conclusion from the Environmental Impact Assessment" for the Tiligulska WF project with the number of 7-03/12-2019653789/1 and date of 21/10/2019. This conclusion

[67] https://zakon.rada.gov.ua/laws/show/1264-12?lang=en#Text
[68] Tiligulska_EIAReport_14082019_ОВД.pdf.

report approves the project's EIA assessment and gives permission for the implementation of the project.[69]

As it can be seen in Section 3.2of this report and the "-Conclusion from the Environmental Impact Assessment- of the Tiligulska WF" [70], project environmental impacts were low, or there are no negative effects, or within the limits of national regulations. Operation of the project does not generate risks to the environment. Sewage and solid wastes, including hazardous wastes, are handled as per the national regulations. Collection of these wastes is outsourced. The operation of the Tiligulska WF also does not generate any risks to local communities.

[69] TiligulskaWF_EIAConclusion21102019_Висновок_ОВД_500.pdf
[70] TiligulskaWF_EIAConclusion21102019_Висновок_ОВД_500.pdf

4. Methodology

4.1 Reference to applied methodology and applied tools

Project activity is a large-scale grid connected Greenfield renewable wind power electricity generation.

Type (methodology, tool, module)	Reference ID	Version	Title
Methodology	ACM0002	21.0	Grid-connected electricity generation from renewable sources[71]
Tool	07	07.0	Tool to calculate the emission factor for an electricity system[72]
Tool	24	03.1	Common practice[73]

4.2 Applicability of methodology

ACM0002 Grid-connected electricity generation from renewable sources, Version 21.0.

Methodology ID	Applicability condition	Justification
ACM0002 Ver 21.0	1. 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 plant(s)/unit(s); (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) Involve a replacement of (an) existing plant(s)/unit(s)	Tiligulska WF project is a Greenfield renewable wind power plant. This condition is Applicable.
	2. 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);	Tiligulska WF project is a Greenfield renewable wind power plant. It does not have BESS. This condition is Not Applicable.

[71] https://cdm.unfccc.int/UserManagement/FileStorage/ZPFJL01OU2RYC6N3HASIXV7K84QBG9.
[72] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf.
[73] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-24-v1.pdf.

	(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).	
	This methodology is applicable under the following conditions:	
	3-a. 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;	Tiligulska WF project is a Greenfield renewable wind power plant. This condition is Applicable.
	3-b. In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects) the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity;	Tiligulska WF project is a Greenfield renewable wind power plant. This condition is Not Applicable.
	3-c. 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);	Tiligulska WF project is a Greenfield renewable wind power plant. It does not have BESS. This condition is Not Applicable.
	3-d. The BESS should be charged with electricity generated from the associated renewable energy power plant(s). Only during exigencies2 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 below. The charging	Tiligulska WF project is a Greenfield renewable wind power plant. It does not have BESS. This condition is Not Applicable.

	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.	
	4. 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 (7), 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 (7), 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 (7), 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 (8), is greater than 4 W/m2; (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.	Project is not a hydro power plant. This condition is Not Applicable.
	5. In the case of integrated hydro power projects, project participants shall: (a) Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that	Project is not a hydro power plant. This condition is Not Applicable.

	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 methodology is not applicable to:	
	6-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;	Tiligulska WF project is a Greenfield renewable wind power plant. Satisfies the criterion.
	6-b. Biomass fired power plants/units.	Tiligulska WF project is a Greenfield renewable wind power plant. Satisfies the criterion.
	7. 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".	Tiligulska WF project is a Greenfield renewable wind power plant. Satisfies the criterion.

Tool 07: Tool to calculate the emission factor for an electricity system, Version 07.0.

Methodology ID	Applicability condition	Justification
Tool 07 Ver 07.0	1. This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g. demand-side energy efficiency projects).	Tiligulska WF supplies electricity to the Ukrainian grid system. Satisfies the criterion.
	2. Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. In the latter case, two sub-options under the step 2 of the tool are available to the project participants, i.e. option IIa and option IIb. If option IIa is chosen, the conditions specified in "Appendix 1: Procedures related to off-grid power generation" should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total electricity generation by grid power plants in the electricity system; and that factors which negatively affect the reliability and stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity.	The emission factor for the project electricity system is calculated for grid power plants only. Grid emission factor of Ukraine is taken from the UNFCCC IFI Default Grid Factors, April 2022, v.3.2.
	3. In case of CDM projects the tool is not applicable if the project electricity system is located partially or totally in an Annex I country.	Project electricity system, Ukraine, is not located partially or totally in an Annex I country. Satisfies the criterion.
	4. Under this tool, the value applied to the CO_2 emission factor of biofuels is zero.	Biofuels is not used in the project activity. This criterion is Not Applicable.

4.3 Deviation from applied methodology

There are no deviations from the ACM0002 Grid-connected electricity generation from renewable sources Version 21.0. The methodology is fully applied to the project activity

4.4 Other Information relating to methodology application

N/A. ACM0002 Grid-connected electricity generation from renewable sources Version 21.0. methodology is fully applied.

5. Additionality

5.1 Level 1 - ISO 14064-2 GHG emissions additionality

ICR Requirement document Version 5.0, states that "GHG emission mitigations shall be additional to the baseline scenario. ISO 14064-2 addresses additionality as the project proponent shall select or establish, justify, and apply criteria and procedures for demonstrating that the project results in GHG emissions mitigations that are additional to what would occur in comparison to the determined GHG baseline."

As per this ICR requirement, to address the GHG mitigations of the project activity in comparison with the determined GHG baseline, the CDM methodology ACM0002 Grid-connected electricity generation from renewable sources Version 21.0. is used. ACM0002 Grid-connected electricity generation from renewable sources Version 21.0 defines the GHG mitigations achieved by the project activity as compared to the baseline conditions. In this context, ACM0002 Grid-connected electricity generation from renewable sources Version 21.0 satisfies the statement of ISO 14064-2, which is "...select or establish, justify, and apply criteria and procedures for demonstrating that the project results in GHG emissions mitigations that are additional to what would occur in comparison to the determined GHG baseline."

The following sections of this report demonstrate the GHG emission reductions by the project activity:

- "Section 6. Baseline Scenario" indicates the baseline scenario,
- "Section 7. Project Boundary" indicates the project boundary which shows the sources of GHG emissions in the baseline scenario within the project boundary,
- "Section 8. Quantification of GHG emission mitigation" explains how the project avoids the GHG emissions as per the ACM0002 Version 21.0. methodology. Calculations of emission reductions are provided in the emission reduction excel sheet.

Hence, applying the ACM0002 Grid-connected electricity generation from renewable sources Version 21.0 to the project activity satisfies the Level 1 additionality criteria of the ICR requirements.

5.2 Level 2a – Statutory additionality

In laws of Ukraine, there are no laws, regulations or any other regulatory framework, agreement, settlements, or any legally binding matters that enforces the similar measures of that would result in the same levels of GHG emission mitigations.

In the baseline scenario, the amount of renewable electricity generated by the project activity would be utilized from the carbon intensive Ukraine national grid system, which is dominated by nuclear and fossil fuel-based power plants.

In Ukraine laws and regulations, there is no enforcement to implement renewable energy projects.

5.3 Level 2b – Non-enforcement additionality

N/A. Level 2a additionality is applied.

5.4 Level 3 – Technology, institutional, common practice additionality

Level 3 additionality is assessed from the point of common practice.

To analyze the common practice additionality, CDM Tool 24 Common practice Version 03.1 is applied.

Determination of applicable geographical area: Mykolaiv Region

Tool 24 defines the applicable geographical area as follows.

"Applicable geographical area - should be the entire host country. If the project participants opt to limit the applicable geographical area to a specific geographical area (such as province, region, etc.) within the host country, then they shall provide justification on the essential distinction between the identified specific geographical area and rest of the host country."

As a first step, applicable geographical area is determined. For this project, the geographical area is taken as the Mykolaiv region, not the whole Ukraine country with the justifications given below.

Since the annexation of Crimean Peninsula by in 2014, there has been an ongoing political tension between Ukraine and Russia, which resulted in the current war in Ukraine leading to the temporary occupation of the eastern part of Ukraine.

On 24/02/2022, the current war in Ukraine by launching a full-scale invasion by Russia, which resulted in the temporary occupation of some parts of the Luhansk, Donetsk, Kherson and Zaporizhzhia regions.

From the very first hours after the invasion in February 2022, Russian forces have been actively shelling not only Ukrainian cities and towns, but also attempting to destroy critical objects of energy infrastructure, such as high-voltage networks, transformer substations, dispatch centers, and even power plants, including those involved in renewable energy. Overall, after targets related to nuclear energy and power transmission lines, power plants in the renewable energy sector became the second priority for destruction by Russian aggressors.

In Ukraine, majority of the wind farms are in these occupied regions. The status of these wind powers in these regions is also not clear. Some of them are destroyed by missile attacks. Due to the attacks, those wind farms are operating partially, or some are destroyed, or some cannot be operated due to the difficulties in operation of the power plants due to the war conditions.

For example, according to the Ukrainian Wind Energy Association, since the start of the full-scale war in Ukraine, over 3/4 of wind energy capacities have been halted, meaning out of the total 1,673 MW, around 1,462 MW of Ukrainian wind power plants are currently not functioning, and 5 wind turbines in the Kherson region, installed at the Myrnenska, Syvaska, and Novotroitska wind farms, are now destroyed. [74]

Under normal conditions, the host country where the project is located would be a stable country. However, in Ukraine, the conditions between 2022 when the Tiligulska WF started its operation and in 2024 when the project is applying for the ICR registration, is totally different. Those regions belonged to Ukraine before February 2022 now are temporarily occupied by Russia. In view of the above, several regions of Ukraine, where a significant number of renewable energy facilities especially wind farms, are located, are temporarily occupied territories and are beyond the control of Ukraine. Given that the project crediting period is 10 years, the conditions when the crediting period started (01/02/2022) and the current conditions are totally different from the territorial viewpoint. Taking

[74] Ukraine Wind Energy Association, "Wind Power of Ukraine 2021: Market Overview The Year Before the War", 24 February 2022, p.17.

the applicable geographical area as the whole host country would not create a reliable and true analysis for common practice due to that some of the wind power plants are temporarily not under control of Ukraine.

From the point of the territorial viewpoint, for the applicable geographical area of the project activity, Mykolaiv region is chosen.

Above explanation does also provide political and institutional issues that the project owner faced to implement this project.

Application of the CDM Tool 24

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

Project's installed capacity is 498 MW.

Project's +/-50% range: 249 MW- 747 MW

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

There are no wind projects within this range in Mykolaiv region.[75]

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 as Nall.

Hence,

Nall= 0

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.

Ndiff= 0

Step 5: calculate factor F=1-Ndiff/Nall 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=1-0/0= 1

Final evaluation: The proposed project activity is a "common practice" within a sector in the applicable geographical area if the factor "F is greater than 0.2 **and** Nall-Ndiff is greater than 3".

Nall-Ndiff is not greater than 3, therefore the project is "not common".

The project meets the requirements of the common practice additionality; hence it is additional.

5.5 Level 4a – Financial additionality I

Level 4a additionality analysis is not applied to the project.

[75] https://www.energo.ua/en/assets?utf8=%E2%9C%93&o=#google_vignette

5.6 Level 4b – Financial additionality II

Level 4b additionality analysis is not applied to the project.

5.7 Level 5 – Policy additionality

Level 5 additionality is N/A.

6. Baseline scenario

Tiligulska WF project is a large-scale Greenfield renewable electricity generation project without BESS. Project generates renewable electricity by harnessing the wind energy and supplies it to the Ukraine grid system.

As per the ACM0002 Grid-connected electricity generation from renewable sources Version 21.0, the baseline scenario is electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources.

Before the implementation of the Tiligulska WF, the amount of renewable electricity generated by the project activity would be utilized from the carbon intensive Ukraine national grid system, which is dominated by nuclear and fossil fuel-based power plants.

Ukraine has an interconnected grid system, which is made up of 220-kilovolt (kV) to 750-kV lines, is more than 22,000 km long, and the total length of the distribution network is more than 1 million km.[76]

The total power generation capacity distribution of Ukraine by the end of July 2019 (excluding power generating facilities of the uncontrolled territory of the Crimean electric power system and the Donbas electricity system): 57% nuclear, 35% thermal, 7% hydro and 1% renewable (alternative energy).[77]

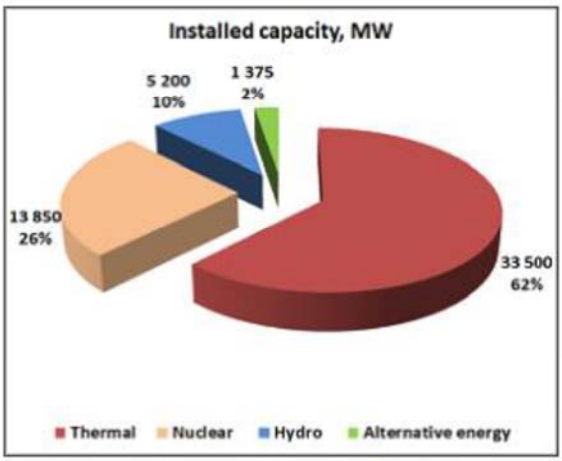


Figure 1. Installed power generation in Ukraine.

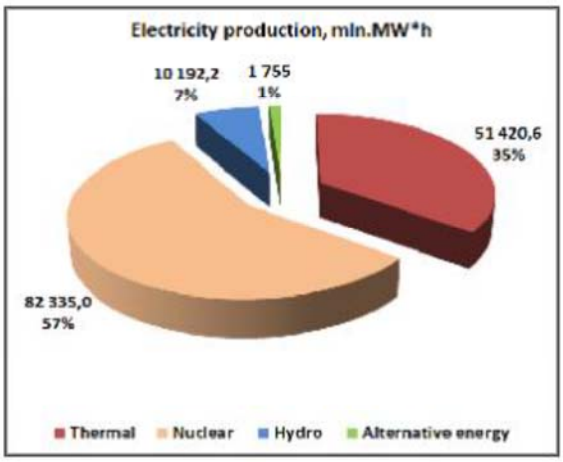


Figure 2. Average annual electricity production ORE.

Figure 13 Power generation share as of July 2019.[78]

Regarding the electricity demand, the modeling studies have shown that electricity consumption in Ukraine is expected to show an increase from 18% in 2012 to 24% and 30 % in 2035 and 2050, respectively.

[76] https://www.iea.org/reports/ukraine-energy-profile/energy-security.
[77] https://www.ukrenergoexport.com/en/node/49.
[78] https://www.ukrenergoexport.com/en/node/49.

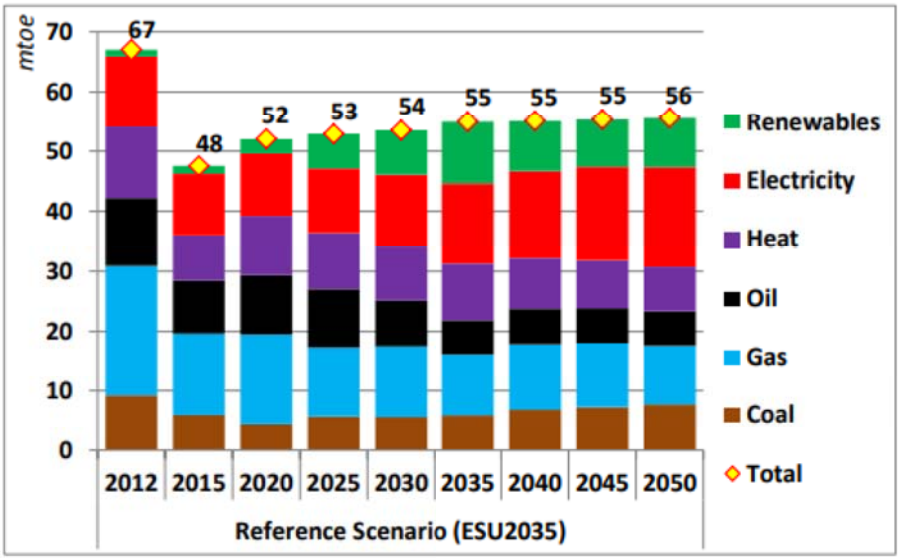


Figure 14 Final energy consumption in reference scenario, Ukraine, 2012-2050.[79]

However, at the current state, due to the ongoing war in Ukraine, a significant damage happened to the Ukraine power systems, including power plants and electricity transmission lines.

"At the beginning of 2022, there were 17.7 million electricity consumers in Ukraine, including 17.2 million households and 0.5 million commercial customers. As a result of hostilities, electricity demand decreased by 30-35% compared to 2021. The consumption pattern also changed due to the shutdown of industrial enterprises and the massive displacement of consumers from Eastern to Western Ukraine. It is foreseen that the total electricity generation in 2022 will be 25% less than the "pre-war" forecast due to Russian military aggression. Since 24/02/2022, almost all consumers have been temporarily disconnected from the electricity supply. As of 24/01/2023, around five million consumers remained without electricity (entirely or partially) due to hostilities or consumption and capacity-limiting schedules. Ukrainian TSO and DSO's restore electricity supply where possible, but regular attacks by Russian forces lead to new damages and destructions."[80]

[79] Final Report Long-term Energy Modelling and Forecasting in Ukraine: Scenarios for the Action Plan of Energy Strategy of Ukraine until 2035, Kyiv-Copenhagen, 2019. p.32. https://ens.dk/sites/ens.dk/files/Globalcooperation/long-term_energy_modelling_and_forecasting_in_ukraine_english.pdf.

[80] International Energy Charter, "Cooperation for Restoring the Ukraine Energy Infrastructure Project", 2023, p.15. https://www.energycharter.org/fileadmin/DocumentsMedia/Occasional/2023_01_24_UA_sectoral_evaluation_and_damage_assessment_Version_VI.pdf.

7. Project boundary

ACM0002 Grid-connected electricity generation from renewable sources Version 21.0 defines the boundary as follows: "The spatial extent of the project boundary includes the project power plant/unit and all power plants/units connected physically to the electricity system that the project power plant is connected to."

As per this statement the project boundary includes

- Tiligulska WF project,
- [redacted]
- Ukraine grid system.

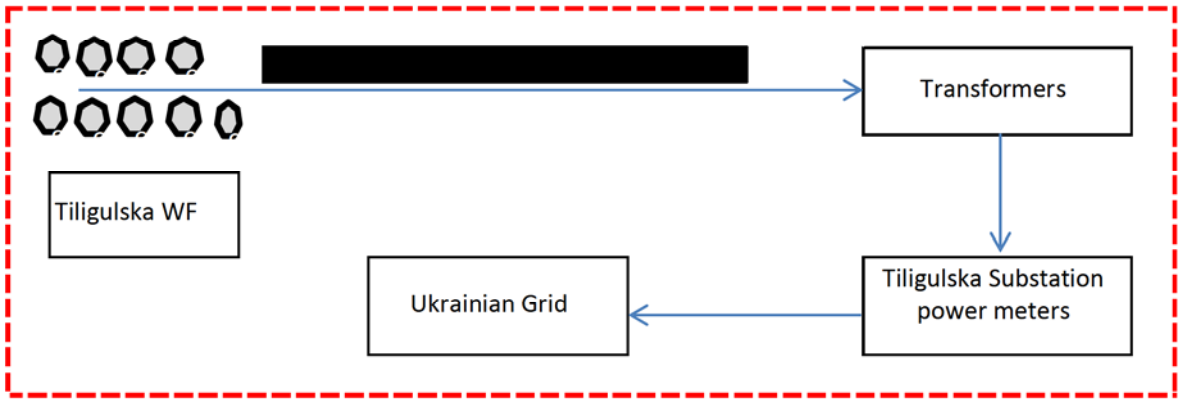


Figure 15 Conceptual description of the Tiligulska WF project boundary

Based on the project boundary, the baseline emission source is the Ukraine grid system.

Baseline emission: Ukraine grid system

As per the ACM0002 Grid-connected electricity generation from renewable sources Version 21.0, "baseline emissions include only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants."

As per the methodology, CO_2 is accepted as major emission source; CH_4 and N_2O are accepted as minor emission source and are neglected in baseline emission calculations (see the following table).

Project emission:

ACM0002 Grid-connected electricity generation from renewable sources Version 21.0 states that "For most renewable energy power generation project activities, PEy = 0."

As per ACM0002 Grid-connected electricity generation from renewable sources Version 21.0, project emissions are sourced from fossil fuel consumption; geothermal or hydro power plants; and BESS units. Tiligulska WF does not consist of any of these sources. Therefore, project emission is taken as zero.[81]

Based on this conclusion, CO_2, CH_4 and N_2O are accepted as minor emission sources and neglected in project emission calculations (see the following table).

[81] ACM0002 Grid-connected electricity generation from renewable sources Version 21.0, p. 14.

Table 5 Identification of GHG SSRs

SSR		Controlled/ related/ affected	GHGs	Included? Y/N	Justification/ explanation	Coordinates
Baseline	CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity	N/A	CH_4	No	Minor emission source. Excluded for simplification. This is conservative.	N/A
		Affected	CO_2	Yes	Main emission source.	Ukraine power grid system
		N/A	N_2O	No	Minor emission source. Excluded for simplification. This is conservative.	N/A

8. Quantification of GHG emission mitigations (ex-ante)

8.1 Criteria and procedures for quantification

8.1.1 Baseline emissions

As per the ACM0002 Grid-connected electricity generation from renewable sources Version 21.0, "baseline emissions include only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:"

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

where:

BE_y = Baseline emissions in year y (tCO_2/yr)
$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)
$EF_{grid,CM,y}$ = Combined margin CO2 emission factor for grid connected power generation in year y calculated using Tool 07 (tCO_2/MWh)

For Greenfield power plant with or without BESS, quantity of net electricity generation ($EG_{PJ,}$) is as follows:
$EG_{PJ,y} = EG_{facility,y}$

Where;
$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)

$EG_{facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)

In the baseline, grid emission factor of Ukraine is taken from the UNFCCC IFI Default Grid Factors, April 2022, v.3.2.

$EF_{grid,CM,y}$ = 0.643[82] tCO_2/MWh

The grid emission factor ($EF_{grid,CM,y}$) is fixed ex-ante and will not be updated ex-post.

Project's estimated annual baseline emission reduction is 1,073,211 tCO_2/yr

[82] IFI Default Grid Factors April 2022 v3.2., Harmonized IFI Default Grid Factors 2021 v3.2 | UNFCCC. IFI value is 0.643167971743973, rounded down to 0.643.

8.1.2 Project emissions

Since Tiligulska WF is a renewable type of Greenfield energy project, as per the ACM0002 Grid-connected electricity generation from renewable sources Version 21.0,

$$PE_y = 0$$

PE_y = Project emissions in year y (tCO_2e/yr)

As per ACM0002 Grid-connected electricity generation from renewable sources Version 21.0, project emissions are sourced from fossil fuel consumption; geothermal or hydro power plants; and BESS units. Tiligulska WF does not consist of any of these sources. Therefore, project emission is taken as zero.[83]

8.1.3 Leakage

As per the ACM0002 Grid-connected electricity generation from renewable sources Version 21.0, leakage is N/A since the project is a Greenfield renewable power plant.

$$LE_y = 0$$ [84]

ACM0002 Grid-connected electricity generation from renewable sources Version 21.0 states that "No other leakage emissions are considered. The emissions potentially arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, transport etc.) are neglected."

8.2 Quantification of Net-GHG emissions and/or removals

Quantification of net emission reductions of the project activity as per the ACM0002 Grid-connected electricity generation from renewable sources Version 21.0 is provided as follows:

$$ER_y = BE_y - PE_y$$ [85]

ER_y = Emission reductions in year y (tCO_2e/yr)

BE_y = Baseline emissions in year y (tCO_2e/yr)

PE_y = Project emissions in year y (tCO_2e/yr)

As it is stated in Section 8.1.2, PE_y is taken as zero.

Hence, quantification of net emission reductions of the project activity is:

$$ER_y = BE_y$$

Emission reduction calculations are provided in the associated excel file. Here is a sample from these calculations:

Tiligulska WF annual electricity generation (MWh)	$BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$	Expected annual emission reduction by the Tiligulska WF (tCO_2/yr)

[83] ACM0002 Grid-connected electricity generation from renewable sources Version 21.0, p. 14.
[84] ACM0002 Grid-connected electricity generation from renewable sources Version 21.0, p. 21.
[85] ACM0002 Grid-connected electricity generation from renewable sources Version 21.0, p. 21.

1,721,420.00	1,721,420.00 x 0.643	1,106,873

Table 6: Aggregated GHG Emission Mitigations

Year	Baseline emissions (tCO_2e)	Project emissions (tCO_2e)	Estimated leakage (tCO_2e)	Reductions (tCO_2e)	Removals (tCO_2e)	Total GHG emission mitigations (tCO_2e)
02/01/2022 to 31/12/2022	676,253	0	0	676,253	N/A	676,253
01/01/2023 to 31/12/2023	1,106,873	0	0	1,106,873	N/A	1,106,87
01/01/2024 to 31/12/2024	1,106,873	0	0	1,106,873	N/A	1,106,873
01/01/2025 to 31/12/2025	1,106,873	0	0	1,106,873	N/A	1,106,873
01/01/2026 to 31/12/2026	1,106,873	0	0	1,106,873	N/A	1,106,873
01/01/2027 to 31/12/2027	1,106,873	0	0	1,106,873	N/A	1,106,873
01/01/2028 to 31/12/2028	1,106,873	0	0	1,106,873	N/A	1,106,873
01/01/2029 to 31/12/2029	1,106,873	0	0	1,106,873	N/A	1,106,873
01/01/2030 to 31/12/2030	1,106,873	0	0	1,106,873	N/A	1,106,873
01/01/2031 to 31/12/2031	1,106,873	0	0	1,106,873	N/A	1,106,873
01/01/2032 to 31/01/2032	94,008	0	0	94,008	N/A	94,008
Total	**10,732,118**	**0**	**0**	**10,732,118**	**N/A**	**10,732,118**
Annual average	**1,073,211**	**0**	**0**	**1,073,211**	**N/A**	**1,073,211**

8.3 Risk assessment for permanence

Permanence risk, in the context of CO_2 emissions reduction, refers to the possibility or risk that the achieved reductions in carbon dioxide emissions may be reversed or not sustained over time. It involves assessing the durability, stability, and long-term continuation of the reduced emissions levels achieved through various mitigation activities or projects.

The level of permanence risk regarding CO_2 reductions in a wind power plant largely depends on several factors:

- **Technology:** Wind turbines are known for their longevity and low maintenance, indicating a high level of permanence in CO_2 reductions compared to conventional thermal power plants. Once installed, wind turbines can generate electricity for several decades with zero emissions.
- **Grid Integration:** If the wind power plant's energy is consistently integrated into the grid, displacing electricity generated by fossil fuel-based thermal power plants, the reduction in CO_2 emissions is relatively stable and sustainable. However, this might vary if there are interruptions or fluctuations in the wind power plant's output due to weather conditions.
- **Lifecycle Analysis:** Assessing the entire lifecycle of wind power plants, including their manufacturing, installation, maintenance, and disposal, is crucial. If the emissions generated during the manufacturing phase are offset by the plant's operation and the emissions avoided due to displacing fossil fuel energy, the overall reduction in CO_2 emissions can be considered substantial and more permanent.
- **Policy Stability:** The permanence of CO_2 reductions also hinges on the stability of government policies supporting renewable energy. Changes in policies can impact the attractiveness of wind energy investments and subsequently affect the level of CO_2 reductions achieved.

While wind power plants contribute significantly to reducing CO_2 emissions by replacing thermal power plants, certain uncertainties such as weather-dependent output and potential policy changes can pose risks to the permanence of these reductions. Conducting a thorough analysis considering these factors will provide a clearer understanding of the level of permanence in CO_2 reduction achieved by a wind power plant.

Factors contributing to permanence risk for Tiligulska WF project include:

- **Technological Reliability: T**he reliability and durability of the technologies employed to reduce emissions, such as renewable energy sources or carbon capture technologies. In the project activity: Reliable
- **Operational Continuity:** The ongoing and consistent operation of emission reduction projects without interruptions or failures.
    - In general, the project activity has been operating since 2022 and today there is a certain fact about how many interruptions or failures there have been - there will probably be some fairly low percentage (<5%)
- **External Influences:** External factors like changes in policy, market conditions, or unforeseen events (natural disasters, war, economic shifts) that could impact the sustainability of emissions reductions.
    - Regulatory – changes in policies, non-payment of SE Guaranteed Buyer and feed-in tariffs may affect the attractiveness of the project but does no intention to close the project.
    - Natural disasters – in Ukraine there are no such weather phenomena that something could blow away wind turbines. In this case, there is an acute issue of war which

raises potential risks to the project site. But as per the resolution of the National Energy and Utilities Regulatory Commission (hereafter NEURC) No.349 dated 26/03/2022, disclosing such risks is confidential information.

- **Lifecycle Analysis:** A comprehensive assessment of the entire lifecycle of emission reduction measures, accounting for emissions from production, operation, and disposal phases. This risk can be neglected.
- **Reversibility:** The potential for reversal of emission reductions if the mitigating actions are halted, reversed, or proven to be unsustainable in the long run. This risk is impossible.

Based on the above evaluation of the risks, it can be indicated that the permanence risk is 5% as related to the operational continuity. It is essential to note that, by the start of the project operation, war in Ukraine not started, and was not being expected. Hence, since at the planning phase of the project, there was no such a war related risk, this risk can be stated as 0%. The war related risk is valid after February 2022.

Permanence risk (%)	5%

As a note, there is no approved procedure and methodology in DTEK for calculation of Permanence risk for reversal of CO_2 reductions.

Risk mitigation measures

To ensure reliable, safe, and efficient operation of equipment in accordance with the requirements set forth by applicable Ukrainian regulations, 24/7 operational control of equipment, as well as maintenance and repair of equipment has been arranged at Tiligulska WF.

Operational control is performed using a SCADA system operating in an online mode. Whenever any deviations from the established operating modes are detected, the shift supervisor promptly takes measures to eliminate the underlying causes. Guidelines on the safe operation of the equipment have been put in place.

The personnel undergo annual in-house training and pass exams on safe operation of the equipment. The scope and frequency of equipment maintenance are determined based on the relevant technical documentation, regulatory requirements and following the inspection of the equipment.

Each year, annual and multi-year equipment repair and maintenance schedules are prepared. These maintenance/repair schedules specify which equipment should undergo maintenance/repair in which month. Based on these schedules, the budget for equipment maintenance and repairs is planned in advance.

The maintenance and repair of equipment is performed by contracting organizations based on the relevant service agreements. Minor repairs of equipment are performed by the personnel of Tiligulska WF. The energy availability factor of the equipment is calculated monthly based on equipment operation data. If this coefficient falls below the planned availability coefficient, the root causes are analyzed and, if possible, measures are taken to eliminate them.

9. Monitoring

9.1 Monitoring plan

The purpose of the monitoring plan is to ensure continuous monitoring, recording, and archiving of the monitoring parameters in a transparent and credible manner for estimating GHG emission reductions achieved by the project activity.

Implementation of the monitoring plan is the responsibility of the project legal owner, DTEK Tiligulska Wind Electric Plant LLC.

Monitoring plan is implemented as per the ACM0002 Grid-connected electricity generation from renewable sources Version 21.0. Data parameters to be monitored are provided in Section9.2 and 9.3. These parameters will be monitored transparently through meeting the basic quality control conditions.

[redacted]

These power meters continuously measure the electricity supplied to the grid. Project owner has no control over these power meters; they are sealed and protected from possible interventions. NPC Ukrenergo applies remote reading to these power meters.

Data recorded from electricity meters is automatically read and fed to the Market Management System (hereafter MMS) platform. This platform belongs to NPC Ukrenergo as the commercial metering administrator. The platform stores information on electricity that has been generated and consumed. In accordance with the law, the electricity generated by Tiligulska WF is purchased by the state-owned company SE Guaranteed Buyer under the terms of the PPA. To determine the volume of electricity purchased, SE Guaranteed Buyer uses data on the volume of electricity consumed and generated recorded by the MMS platform during a relevant month. The net volume is calculated by deducting the volume of electricity that was consumed from the volume of electricity that was generated.

Monitoring equipment

[redacted]

Both generated and consumed electricity is metered by Itron brand, SL761W model power meters with an accuracy class of 0.2.[86] These meters record both generated and consumed electricity. Technical specifications of these grid substation power meters are given below:

Technical specifications of these grid substation power meters are given below:

[86] Accuracy class of 0.2 is indicated on the left corner of the power meters layout document, Схема лічильників ТВЕС.pdf.

Table 7 Tiligulska WF Monitoring power meters operated by NPC Ukrenergo[87]

Model	Serial Number	Accuracy class	Main/ Backup	Inspection date
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Cross-check:

For cross-checking the $EG_{PJ,y}$ data, the online Market Management System screenshot is to be taken for each month of electricity generation by the project activity.

First index protocols and calibration

First index protocols (meter inspection) were applied to power meters as the wind turbines taken into operation. Meter inspections were applied by the southern territory representative of the NPC Ukrenergo on different dates as given in the above table.[88]

ASCOE commissioning was applied by the Ukrainian Technological Products LLC for only eight power meters with the serial numbers of 84571184, 84571185, 84571172, 84571173, 84571186, 84571187, 84571182 and 84571183. ASCOE commissioning date of these power meters is 29/10/2021. ASCOE is the "Automated system of commercial electricity accounting" in Ukraine. [redacted]

Monitoring equipment calibration frequency

Regarding the calibration terms, meters must be calibrated every six years per the Ukraine regulations ("On the approval of inter-verification intervals of legally regulated measuring equipment in operation, by categories, z1416-16, 21/02/2020 (edition)", (item 39 in the table of the regulation).[89]

[87] For inspection date of 19/10/2021 please refer to the "Meter_inspection_Акти перевірки лічильників ТВЕС від 19102021.pdf"; for inspection date of 29/05/2023 please refer to the "Meter_inspection_сч твес 1.pdf"; for inspection date of 09/02/2023 please refer to the "Meter_inspection_сч твес.pdf"

[88] Meter_inspection_Акти перевірки лічильників ТВЕС від 19102021.pdf; Meter_inspection_сч твес 1.pdf; Meter_inspection_сч твес.pdf.

[89] https://zakon.rada.gov.ua/laws/show/z1417-16#Text. (Due to the current war in Ukraine, accessing to the link outside Ukraine may not be allowed, however at the writing of this document, the link was accessible). This document is provided as pdf, PowerMetersCalibrationRegulation.pdf.
Footnote 6, translated into English: "For single-phase electromechanical active electricity meters (accuracy classes 0.5–2.0 and A, B), the calibration interval is 8 (16) years; static single-phase active and reactive electricity meters (accuracy classes 0.2S-3.0 and A, B, C) - 6 (16) years; electromechanical three-phase active and reactive electricity meters (accuracy classes 0.5-3.0 and A, B) - 4 (10) years; active and reactive electricity meters static three-phase (accuracy classes 0.2S-3.0 and A, B, C) - 6 (10) years; active and reactive electricity meters (accuracy classes 0.01-0.1) - 1 year." The project grid power meters are subject to 6 years of calibration.

Meters are calibrated (this term is interchangeable used as verified and/or parameterized in Ukraine energy market) by specialized organizations that have the required permits and certified metrological equipment. As per the regulation, if the calibration results show that the power meter is not working properly, then the electricity distributor company replaces the power meter. Since the project's operation date is 01/02/2022, the first calibration will be applied in 2027. Therefore, there is no calibration process applied so far. Based on this regulation, the project's calibration frequency is 6 years.

During the first monitoring period, 01/02/2022-31/01/2024, no calibration was applied to the power meters. The first calibration will be applied after 6 years since the operation start date. Hence the first calibration was expected to be applied in 2027 under normal no-war conditions.

Maintaining of data

The archive of the monitoring parameter ($EG_{PJ,y}$) is maintained on a monthly basis by the electricity purchaser company, SE Guaranteed Buyer, and the project owner, DTEK Tiligulska Wind Electric Plant LLC. Net electricity generation certificates delivered by the SE Guaranteed Buyer is archived by the DTEK accounting office.

All data for each monitoring parameter will be archived during the project's crediting period and 5 more years following the end of the crediting period.

Data flow single line diagram

Data flow diagram of the project activity is given below:

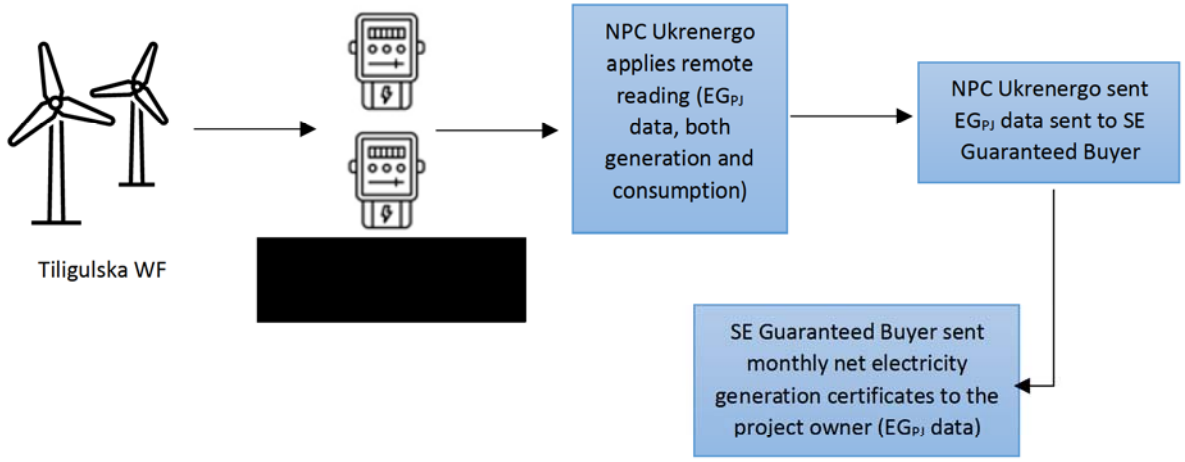


Figure 16 Project data single line diagram

Project Monitoring Organizational Structure

The project operates by its own specialists and local subcontractors under service contracts. In total, [redacted]

For proper operation of Tiligulska WF, the personnel and specialists perform the following functions and duties.

Director:

Director is responsible for the full operation of the Tiligulska WF. The director is also responsible for implementing the Tiligulska WF project monitoring plan, ensuring proper archiving of the monitoring parameters ($EG_{Pj,y}$). There is no need for monitoring ex-ante parameters which will be fixed during the validation process and will not be revised during the monitoring period. Other responsibilities include:

- Organization of facilities operation of WF,
- Organization of ensuring activity of WF,
- Quality control and completeness of range of services under contracts of ensuring activity of WF,
- Control of road condition, buildings, and constructions of WF,
- Ensuring fire safety of the WF,
- Providing requirements of labor protection rules by staff of the WEP and subcontracted organizations,
- Ensuring performance of planned targets on achievement of availability coefficient of the WF,
- Organization of submitting applications for materials procurement, equipment, and services,
- Organization of holding trainings to production staff of the WF.

Manager occupational safety:

- Conducts introductory briefings for: employees who are hired for permanent or temporary work; employees of other organizations,
- Provides training to employees on labor protection, fire safety, internal procedures of the occupational health and safety system in accordance with the requirements,

- Carries out internal inspections and audits of the labor protection and environmental safety management system,
- Carries out timely preparation of reports on labor protection and fire safety,
- Takes part in the accident investigation commission,
- Organizes and controls the passage of preliminary and periodic medical examinations of employees who are engaged in hard work or work with harmful and dangerous working conditions,
- Controls the timely conduct of briefings for Tiligulska WF employees and compliance with regulations on labor protection of machines, mechanisms, equipment, vehicles, firefighting, collective and individual protection of workers, the availability of technological documentation at workplaces.

Chief power engineer:

- Providing control of compliance on operating modes of plant equipment,
- Quality control and volume of performance of maintenance of the equipment,
- Providing requirements of labor protection rules by staff and subcontracted organizations,
- Planning and organization the outputting equipment to the repair state according to schedules,
- The organization of performance of emergency repairs,
- Maintaining technical documentation on infrastructure equipment,
- Ensuring training of production staff according to requirements of standard documentation.

Chief Supervisor:

- 24/7 operational management of Tiligulska WF energy facilities,
- Conducting expeditious negotiations and switching with staff of adjacent networks and organizations,
- Conducting operating-technical documentation,
- Ensuring preparation of the modes for a conclusion in repair of the equipment of objects,
- Organization of safe performance work.

Electromechanical engineer group:

- Performance of switching for outputting equipment to the repair state,
- The admission of contract organizations for performance of work on equipment,
- Monitoring the performance of work in electrical installations by staff subcontractor organizations, which doesn't have electrical skills,
- Implementation of surveys of the equipment,
- Maintaining technical documentation on WF equipment,
- Performance of emergency repairs.

Analyst:

- Calculation of technical work indicators of energy facilities,
- Analysis of equipment operation of the energy facilities,
- Preparation of reporting documentation,
- Providing short-term forecasts for power production.

File Clerk:

- Registration of the entering and outgoing mail,
- Ensuring sending correspondence,
- Preparation of administrative documents,
- Execution of the reporting.

Driver:

- Control of vehicles and special equipment of the company,
- Delivery of staff.

Security and cleaning personnel of the project provide their services based on service contracts.

Carbon consultant of the project activity is responsible to estimate the emission reductions of the project activity

9.2 Data and parameters remaining constant

Data / Parameter	$EF_{grid,CM,y}$
Unit	tCO_2/MWh
Description	Combined margin CO_2 emission factor for grid connected power generation in year y calculated using Tool 07
Origin of data	UNFCCC IFI Default Grid Factors, April 2022, v.3.2. [90]
Value applied	0.643[91] tCO_2/MWh
Justification of choice of data or description of measurement methods and procedures applied	UNFCCC data, UNFCCC IFI Default Grid Factors, April 2022, v.3.2
Purpose of Monitoring	☒ Calculation of baseline emissions ☐ Calculation of project emissions ☐ Calculation of leakage
Comments	-

[90] IFI Default Grid Factors April 2022 v3.2., Harmonized IFI Default Grid Factors 2021 v3.2 | UNFCCC.
[91] IFI Default Grid Factors April 2022 v3.2., Harmonized IFI Default Grid Factors 2021 v3.2 | UNFCCC. IFI value is 0.643167971743973, rounded down to 0.643.

9.3 Data and parameters monitored

Table 8 Data and parameters to be monitored

Data / Parameter	**$EG_{PJ,y}$**
Unit	MWh/year
Description	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)
Origin of data	The readings of the power meters located at the Tiligulska Substation are the source of $EG_{PJ,y}$ data. And, the main source of the $EG_{PJ,y}$ monitoring parameter is the monthly net electricity generation certificates delivered by the SE Guaranteed Buyer to the project owner, DTEK Tiligulska Wind Electric Plant LLC. [redacted] This platform belongs to NPC Ukrenergo as the commercial metering administrator. The platform stores information on electricity that has been generated and consumed. In accordance with the law, the electricity generated by Tiligulska WF is purchased by the state-owned company SE Guaranteed Buyer under the terms of the PPA. To determine the volume of electricity purchased, SE Guaranteed Buyer uses data on the volume of electricity consumed and generated recorded by the MMS platform during a relevant month. The net volume is calculated by deducting the volume of electricity that was consumed from the volume of electricity that was generated. SE Guaranteed Buyer pays only for the net volume based on the data indicated in certificates of electricity sold every month. [redacted] Both generated and consumed electricity is metered by Itron brand, SL761W model power meters with an accuracy class of 0.2.[92] These meters record both generated and consumed electricity. Technical specifications of these grid substation power meters are given below: *Table 9 Tiligulska WF Monitoring power meters operated by NPC Ukrenergo[93]* [redacted]

Model	Serial Number	Accuracy class	Main/ Backup	Inspection date
[redacted]				

[92] Accuracy class of 0.2 is indicated on the left corner of the power meters layout document, Схема лічильників ТВЕС.pdf.

[93] For inspection date of 19/10/2021 please refer to the "Meter_inspection_Акти перевірки лічильників ТВЕС від 19102021.pdf"; for inspection date of 29/05/2023 please refer to the "Meter_inspection_сч твес 1.pdf"; for inspection date of 09/02/2023 please refer to the "Meter_inspection_сч твес.pdf"

	[redacted]
	Cross-check: For cross-checking the $EG_{PJ,y}$ data, the online Market Management System screenshot is to be taken for each month of electricity generation by the project activity.
Value applied	1,721,420.00 MWh/year (baseline estimated value) First monitoring period: Tiligulska WF electricity generation (MWh) 01/02/2022 to 31/12/2022: 59,446.20 01/01/2023 to 31/12/2023: 286,606.20 01/01/2024 to 31/01/2024: 53,138.26 Total: 399,190.66 MWh
Justification of choice of data or description of measurement methods and procedures applied	Certificates delivered to the project owner by the SE Guaranteed Buyer, the electricity purchasing company, are the sole source of the data. Certificates are delivered both in email format and as a hardcopy. Certificates are signed by both SE Guaranteed Buyer and DTEK Tiligulska Wind Electric Plant LLC.
Monitoring frequency	Measurement done continuously, but monitoring is annually
Purpose of data	☒ Calculation of baseline emissions ☐ Calculation of project emissions ☐ Calculation of leakage
Quality assurance and control	QA/QC procedure has been applied as per the related Ukraine regulation. Meters must be calibrated every six years per the Ukraine regulations ("On the approval of inter-verification intervals of legally regulated measuring equipment in operation, by categories, z1416-16, 21/02/2020 (edition)", (item 39 in the table of the regulation).94 Meters are calibrated (this term is interchangeable used as verified and/or parameterized in Ukraine energy market) by specialized organizations that have the required permits and certified metrological equipment. As per the regulation, if the calibration results show that the power meter is not working properly, then the electricity distributor company replaces the power meter. Since the project's operation date is 01/02/2022, the first calibration will be applied in 2027. Therefore, there is no calibration process applied so far. Based on this regulation, the project's calibration frequency is 6 years.

[94] https://zakon.rada.gov.ua/laws/show/z1417-16#Text. (Due to the current war in Ukraine, accessing to the link outside Ukraine may not be allowed, however at the writing of this document, the link was accessible). This document is provided as pdf, PowerMetersCalibrationRegulation.pdf.
Footnote 6, translated into English: "For single-phase electromechanical active electricity meters (accuracy classes 0.5–2.0 and A, B), the calibration interval is 8 (16) years; static single-phase active and reactive electricity meters (accuracy classes 0.2S-3.0 and A, B, C) - 6 (16) years; electromechanical three-phase active and reactive electricity meters (accuracy classes 0.5-3.0 and A, B) - 4 (10) years; active and reactive electricity meters static three-phase (accuracy classes 0.2S-3.0 and A, B, C) - 6 (10) years; active and reactive electricity meters (accuracy classes 0.01-0.1) - 1 year." The project grid power meters are subject to 6 years of calibration.

	First index protocols (meter inspection) were applied to power meters as the wind turbines taken into operation. Meter inspections were applied by the southern territory representative of the NPC Ukrenergo on different dates as given in the above table.[95] ASCOE commissioning was applied by the Ukrainian Technological Products LLC for only eight power meters with the serial numbers of 84571184, 84571185, 84571172, 84571173, 84571186, 84571187, 84571182 and 84571183. ASCOE is the "Automated system of commercial electricity accounting" in Ukraine. ASCOE at the Tiligulska Substation is operated/managed by the NPC Ukrenergo. [redacted] During the first monitoring period, 01/02/2022-31/01/2022, no calibration was applied to the power meters. The first calibration will be applied after 6 years since the operation start date. Hence the first calibration was expected to be applied in 2027 under normal no-war conditions. The archive of the monitoring parameter ($EG_{PJ,y}$) is maintained on a monthly basis by the electricity purchaser company, SE Guaranteed Buyer, and the project owner, DTEK Tiligulska Wind Electric Plant LLC. Net electricity generation certificates delivered by the SE Guaranteed Buyer are archived by the DTEK accounting office. All data for each monitoring parameter will be archived during the project's crediting period and 5 more years following the end of the crediting period.
Comments	Monitoring this parameter meets the requirement of SDG 7 and SDG 13 contributions of the project activity.

Data / Parameter	Number of long-term employees working at the Tiligulska WF
Unit	Number/year
Description	Number of long-term employees working at the Tiligulska WF
Origin of data	Project owner's official employment records
Value applied	[redacted]
Justification of choice of data or description of measurement methods and procedures applied	Project owner's official records is the only source of proving the employment records of the project activity.
Monitoring frequency	Annually
Purpose of data	Conforming the SDG Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (SDG 8.5.1) requirement.

[95] Meter_inspection_Акти перевірки лічильників ТВЕС від 19102021.pdf; Meter_inspection_сч твес 1.pdf; Meter_inspection_сч твес.pdf.

Quality assurance and control	Official employment records
Comments	N/A

10. Quantification of GHG emission mitigations (ex-post)

10.1 Baseline emissions

As per the ACM0002 Grid-connected electricity generation from renewable sources Version 21.0, "baseline emissions include only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:"

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

where,

BE_y : Baseline emissions in year y (tCO_2/yr),

$EG_{PJ,y}$: Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr),

$EF_{grid,CM,y}$: Combined margin CO_2 emission factor for grid connected power generation in year y calculated using Tool 07 (tCO_2/MWh).

For Greenfield power plant with or without BESS, quantity of net electricity generation ($EG_{PJ,}$) is as follows:

$EG_{PJ,y} = EG_{facility,y}$

where,

$EG_{PJ,y}$: Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)

$EG_{facility,y}$: Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)

In the baseline, grid emission factor of Ukraine is taken from the UNFCCC IFI Default Grid Factors, April 2022, v.3.2.

$EF_{grid,CM,y}$ = 0.643[96] tCO_2/MWh

The grid emission factor ($EF_{grid,CM,y}$) is fixed ex-ante and will not be updated ex-post.

Project's estimated annual baseline emission reduction is 1,073,211 tCO^2/yr.

During the first crediting period 01/02/2022-31/01/2024, project's achieved emission reduction is 256,680 tCO_2.

10.2 Project emissions

Since Tiligulska WF is a renewable type of Greenfield energy project, as per the ACM0002 Grid-connected electricity generation from renewable sources Version 21.0,

$$PE_y = 0$$

[96] IFI Default Grid Factors April 2022 v3.2., Harmonized IFI Default Grid Factors 2021 v3.2 | UNFCCC. IFI value is 0.643167971743973, rounded down to 0.643.

where,

PE_y = Project emissions in year y (tCO_2e/yr)

As per ACM0002 Grid-connected electricity generation from renewable sources Version 21.0, project emissions are sourced from fossil fuel consumption; geothermal or hydro power plants; and BESS units. Tiligulska WF does not consist of any of these sources. Therefore, project emission is taken as zero.[97]

10.3 Leakage

As per the ACM0002 Grid-connected electricity generation from renewable sources Version 21.0, leakage is N/A since the project is a Greenfield renewable power plant.

$$LE_y = 0$$ [98]

ACM0002 Grid-connected electricity generation from renewable sources Version 21.0 states that "No other leakage emissions are considered. The emissions potentially arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, transport etc.) are neglected.

10.4 Risk assessment for permanence

For performance risk assessment, preventive and mitigation measures described in Section 8.3 have been applied during the first monitoring period.

Based on the above evaluation of the risks described in Section 8.3., it can be indicated that the permanence risk is 5% as related to the operational continuity.

Permanence risk (%)	5%

As a note, there is no approved procedure and methodology in DTEK for calculation of Permanence risk for reversal of CO_2 reductions.

Risk mitigation measures

To ensure reliable, safe, and efficient operation of equipment in accordance with the requirements set forth by applicable Ukrainian regulations, 24/7 operational control of equipment, as well as maintenance and repair of equipment has been arranged at Tiligulska WF.

Operational control is performed using a SCADA system operating in an online mode. Whenever any deviations from the established operating modes are detected, the shift supervisor promptly takes measures to eliminate the underlying causes. Guidelines on the safe operation of the equipment have been put in place.

[97] ACM0002 Grid-connected electricity generation from renewable sources Version 21.0, p. 14.
[98] ACM0002 Grid-connected electricity generation from renewable sources Version 21.0, p. 21.

The personnel undergo annual in-house training and pass exams on safe operation of the equipment. The scope and frequency of equipment maintenance are determined based on the relevant technical documentation and regulatory requirements, and also following the inspection of the equipment.

Each year, annual and multi-year equipment repair and maintenance schedules are prepared. These maintenance/repair schedules specify which equipment should undergo maintenance/repair in which month. Based on these schedules, the budget for equipment maintenance and repairs is planned in advance.

The maintenance and repair of equipment is performed by contracting organizations based on the relevant service agreements. Minor repairs of equipment are performed by the personnel of Tiligulska WF. The energy availability factor of the equipment is calculated monthly based on equipment operation data. If this coefficient falls below the planned availability coefficient, the root causes are analyzed and, if possible, measures are taken to eliminate them.

10.5 Net GHG emission mitigations

Quantification of net emission reductions of the project activity as per the ACM0002 Grid-connected electricity generation from renewable sources Version 21.0 is provided as follows:

$$ER_y = BE_y - PE_y$$ [99]

where,

ER_y = Emission reductions in year y (tCO_2e/yr)

BE_y = Baseline emissions in year y (tCO_2e/yr)

PE_y = Project emissions in year y (tCO_2e/yr)

As it is stated in Section 8.1.2 and Section 10.2, PE_y is taken as zero.

Hence, quantification of net emission reductions of the project activity is:

$$ER_y = BE_y$$

Emission reduction calculations are provided in the associated excel file. Here is a sample from these calculations.

First monitoring period	Tiligulska WF annual electricity generation (MWh)	$BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$	Achieved emission reductions by the Tiligulska WF (tCO_2)
01/02/2022 to 31/12/2022	59,446.20	59,446.20 x 0.643	38,224
01/01/2023 to 31/12/2023	286,606.20	286,606.20 x 0.643	184,288
01/01/2024 to 31/01/2024	53,138.26	53,138.26 x 0.643	34,168
Total	399,190.66 MWh	256,680 tCO_2	

[99] ACM0002 Grid-connected electricity generation from renewable sources Version 21.0, p. 21.

Year	Baseline emissions/ removals (tCO_2e)	Project emissions/removals (tCO_2e)	Leakage emissions (tCO_2e)	Buffer allocation (tCO_2e)	Reduction ICCs (tCO_2e)	Removal ICCs (tCO_2e)	Total ICCs (tCO_2e)
01/02/2022 to 31/12/2022	38,224	0	0	0	38,224	N/A	38,224
01/01/2023 to 31/12/2023	184,288	0	0	0	184,288	N/A	184,288
01/01/2024 to 31/01/2024	34,168	0	0	0	34,168	N/A	34,168
Total	**256,680**	**0**	**0**	**0**	**256,680**	N/A	**256,680**

10.6 Comparison to estimated GHG emission mitigations

The difference between ex-ante estimation and the first monitoring emission reductions comes from the remaining wind turbines not being constructed. [redacted]

Year	Ex-ante estimation (tCO_2e)	Monitored impacts (tCO_2e)	%	Explanation
01/01/2022 to 31/12/2022	676,253	38,224	-94.35%	The difference between ex-ante estimation and the first monitoring emission reductions comes from the remaining wind turbines not to be constructed. [redacted]
01/01/2023 to 31/12/2023	1,106,873	184,288	-83.55%	
01/01/2024 to 31/01/2024	178,919	34,168	-80.90%	
Total	**1,962,045**	**256,680**	-86.92%	

11. Management of data quality

The data used in GHG emission reductions by the project activity is the annual net amount of electricity generation by the Tiligulska WF. This data is measured by the power meters operated by the NPC Ukrenergo. The quality control of the power meters is the main issue to ensure the management of data quality. Power meters, as it can be seen in Section 9, are verified/parameterized

every 6 years as per the national regulations. Hence, the data generated by the power meters complies with the national regulations.

The archive of the annual net electricity generation data is maintained monthly by the electricity purchaser company, SE Guaranteed Buyer, and the project owner, DTEK Tiligulska Wind Electric Plant LLC. In accordance with the provisions under the PPA between DTEK Tiligulska Wind Electric Plant LLC and SE Guaranteed Buyer, the latter sends certificates for the respective month, which should be approved by the project owner. The parties indicate the amount of electricity generated during the relevant month and the cost of the electricity, after which the certificate is signed by both parties and the respective amount is paid by the SE Guaranteed Buyer. Payments for the consumed electricity are made to the bank account designated in the PPA. No invoices are issued. The parties periodically conduct reconciliations and sign the relevant certificates.

Appendix I Confidential Information

Section	Information	Justification
1.1.	Certain information highlighted in purple is confidential information that should be hidden	In accordance with the resolution of the National Energy and Utilities Regulatory Commission (hereafter NEURC) No.349 dated 26/03/2022 "On the protection of information that may be classified as restricted information under martial law, including information on critical infrastructure facilities" during the martial law in Ukraine and until the last day of the month following the month of termination or lifting of martial law, electricity producers shall ensure limited access to and protection of information on power plants, including, but not limited to, the location, condition and modes of operation of power equipment of electricity producers, dispatch control and transmission of electricity, geodetic information and technical system of electricity facilities, information on substations, other information available on websites on power equipment of electricity and heat producers, electricity transmission and distribution systems.[100] Taking into account that Tiligulska WF is an electricity producer in the energy sector, information about the project, including this documentation, is classified as restricted information (with limited access) and cannot be made publicly available until the end of the war in Ukraine.
1.3.	Certain information highlighted in purple is confidential information that should be hidden	
1.4.	The whole section 1.4 (Location) highlighted in purple is confidential information that should be hidden	
1.5.	Certain information highlighted in purple is confidential information that should be hidden	
1.6.	The whole section 6.4 (Technology applied) highlighted in purple is confidential information that should be hidden	
1.15.	Certain information highlighted in purple is confidential information that should be hidden	
3.2.	Certain information highlighted in purple is confidential information that should be hidden	
7.	Certain information highlighted in purple is confidential information that should be hidden	
9.1.	Certain information highlighted in purple is confidential information that should be hidden	
9.3.	Certain information highlighted in purple is confidential information that should be hidden	

[100] Щодо захисту інформації, яка в умовах воєнного стану може бути віднесена до інформації з обмеженим доступом, у тому числі щодо об'єктів критичної інфраструктури | Національна комісія, що здійснює державне регулювання у сферах енергетики та комунальних послуг (nerc.gov.ua)

Appendix II: Stakeholder comments

Stakeholder comments are provided in the following.

Об’ява \ Announcement

ТОВ « ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»
DTEK Tiligulska Wind Power Plant LLC

Місцева зустріч зацікавлених сторін проекту
Project Local Stakeholder Meeting

Ми раді запросити вас взяти участь у Зустрічі громадських консультацій із зацікавленими сторонами Тилігульська Вітроелектростанція у дату та місце, вказані нижче.

Об'єкт побудований в Миколаївський районі Миколаївська області. Мета цієї зустрічі – поінформувати зацікавлених сторін про проект та отримати їхні запитання та коментарі. Зустріч проводиться в рамках платформи Міжнародного вуглецевого реєстру (ICR) щодо внеску проекту в скорочення викидів вуглецю.

Location\ Адреса: [redacted]

Date \ Дата: **24.11.2023** Time \ Час:
12.00

Meeting Organizer: «Д.ТРЕЙДІНГ ІНТЕРНЕШНЛ СА» (D.TRADING INTERNATIONAL SA)

Project Owner: ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ» (DTEK Tiligulska Wind Power Plant LLC)

Address\ Адреса: [redacted]

Webpage: https://renewables.dtek.com/

Energy in action

DTEK TILIGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВЕС»
04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER ATANDEE LIST
СПИСОК МІСЦЕВИХ ЗАЦІКАВЛЕНИХ СТОРІН

Meeting Date: 24.11.2023

Meeting Location:
Миколаївська обл., Миколаївський район,
Березанська ОТГ, с. Краснопілля, вул. Шкільна, 1

	Name Surname	Institution /Duty	Phone	E-mail	Signature
1)	[redacted]				
2)					
3)					
4)					
5)					
6)					
7)					
8)					
9)					
10)					
11)					
12)					
13)					
14)					
15)					
16)					
17)					
18)					
19)					
20)					

Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»

04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	староста
Дата зустрічі \ Meeting Date::	24.11.2023
Місце зустрічі \ Meeting Location::	[redacted]

Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?

екологічна - чиста електроенергія, розвиток громади, додаткові надходження до бюджету громади.

Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?

немає

Підпис\ Signature	

DTEK Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»

04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	Старостинський округ, тех. працівник
Дата зустрічі \ Meeting Date::	24.11.2023
Місце зустрічі \ Meeting Location::	[redacted]

Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?

Розвиток території, своєчасна сплата податків до бюджету громади, розвиток території

Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?

Немає

Підпис\ Signature	[signature]

DTEK Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»

04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	Берданівська сільська рада / діловод Красноп'ільського с/о
Дата зустрічі \ Meeting Date::	24.11.2023
Місце зустрічі \ Meeting Location::	[redacted]

Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?

Розвиток інфраструктури. Робочі місця. Генерація електроенергії без шкідливих викидів.

Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?

Немає негативних

Підпис\ Signature	Чигріна В.Т.

D.TEK Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»

04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	Березанська сільська рада соціальний працівник
Дата зустрічі \ Meeting Date::	24.11.23
Місце зустрічі \ Meeting Location::	[redacted]

Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?
Немає шкідливих викидів в навколишнє середовище
Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?
Відсутні

Підпис\ Signature	

DTEK Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»

04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	Домогосподарка
Дата зустрічі \ Meeting Date::	24.11.2023
Місце зустрічі \ Meeting Location::	[redacted]

Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?

Вагомий внесок енергетичних потужностей в енергосистему. Генерація електроенергії без будь-яких забруднюючих речовин. Оптимальне використання земель після гірничої промисловості. Робочі місця в навколишніх громадах. Додаткові надходження до бюджету.

Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?

Негативних аспектів проекту не бачу

Підпис\ Signature	[signature]

Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»

04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	КП "Берегань" контролер
Дата зустрічі \ Meeting Date::	24.11.2023
Місце зустрічі \ Meeting Location::	[redacted]

Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?

Зелена енергетика та її впровадження в Україні. Збільшення робочих місць. Збільшення поступів до місцевого бюджету.

Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?

Жодних не має.

Підпис\ Signature	Бойчан Т. М.

Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»

04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	домогосподарка
Дата зустрічі \ Meeting Date::	24.11.2023
Місце зустрічі \ Meeting Location::	[redacted]
Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?	
Зелена енергетика та її впровадження в Україні. Збільшення робочих місць та податків. Додаткове джерело електроенергії	
Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?	
Немає	
Підпис\ Signature [signature]	Масло И.О

Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»
04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	механізатор
Дата зустрічі \ Meeting Date::	24.11.23
Місце зустрічі \ Meeting Location::	[redacted]
Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?	
Зелена енергетика та її впровадження, Робочі місця. Збільшення податків до місцевого бюджету.	
Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?	
Немає	
Підпис\ Signature	[redacted]

DTEK Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»

04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	Робітник по благоустрою
Дата зустрічі \ Meeting Date::	24.11.2023
Місце зустрічі \ Meeting Location::	[redacted]
Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?	
Зелена енергетика та її впровадження в Україні, збільшення робочих місць, збільшення податків до місцевого бюджету	
Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?	
Немає	
Підпис\ Signature [signature]	Мойструк Л. М.

Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»

04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	домогосподарка
Дата зустрічі \ Meeting Date::	24.11.2023
Місце зустрічі \ Meeting Location::	[redacted]

Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?

екологічна чисто. енергія,

Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?

—

Підпис\ Signature	

DTEK Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»

04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	реалізатор
Дата зустрічі \ Meeting Date::	24.11.23.
Місце зустрічі \ Meeting Location::	[redacted]

Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?

екологічна чиста енергія.

Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?

немає

Підпис\ Signature	Атаманенко О.В.

Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»

04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	приватизація
Дата зустрічі \ Meeting Date::	24.11.2023
Місце зустрічі \ Meeting Location::	[redacted]

Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?

Екологічно чиста електроенергія
Нові робочі місця
Розвиток інфраструктури місцевих громад
Безпечність та безперебійність постачання е/енергії

Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?

відсутні

Підпис\ Signature	[signature]

Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»

04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted] сер.
Місце робот\Професія\ Job:	продавець
Дата зустрічі \ Meeting Date::	24.11.2023
Місце зустрічі \ Meeting Location::	[redacted]
Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?	
Додаткові робочі місця для мешканців громади. Екологічно чисту електроенергію	
Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?	
Немає	
Підпис\ Signature	Коси

DTEK Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»

04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	учитель
Дата зустрічі \ Meeting Date::	24.11.2023
Місце зустрічі \ Meeting Location::	[redacted]

Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?

Додаткові робочі місця.
Розвиток зеленої енергетики України
Альтернативна енергія

Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?

Відсутня

Підпис\ Signature	

DTEK Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»
04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	Бригадир НТВ Машиноремонд-К.
Дата зустрічі \ Meeting Date::	24.11.23.
Місце зустрічі \ Meeting Location::	[redacted]
Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?	
Збільшення податків до місцевого бюджету. Зелена енергетика. Збільшення робочих місць	
Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?	
Відсутні	
Підпис\ Signature	Мельниченко О.М.

Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»

04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	робітник ПП. Блюменкорець д-к.
Дата зустрічі \ Meeting Date::	24.11.23
Місце зустрічі \ Meeting Location::	[redacted]

Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?

Зелена енергетика та її впровадження в Україні.
Додаткове джерело електроенергії.
Збільшення робочих місць та податків

Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?

Немає

Підпис\ Signature	

Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»

04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	вихователь ЗДО. Бураково
Дата зустрічі \ Meeting Date::	24.11.2023
Місце зустрічі \ Meeting Location::	[redacted]

Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?

Зелена енергетика та її впровадження в Україні. Додаткове джерело електроенергії. Збільшення робочих місць та податків.

Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?

немає.

Підпис\ Signature	[signature]

Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»

04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	пенсіонер
Дата зустрічі \ Meeting Date::	24.11.2023
Місце зустрічі \ Meeting Location::	[redacted]

Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?

Немає шкідливого впливу на навколишнє середовище

Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?

Немає

Підпис\ Signature [redacted]

Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»

04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	сюжнік ПП Блюенергосервіс-К
Дата зустрічі \ Meeting Date::	24.11.2023
Місце зустрічі \ Meeting Location::	[redacted]

Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?

Немає шкідливого впливу на навколишнє середовище. Додаткове джерело енергії. Робочі місця для місцевих жителів.

Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?

Немає

Підпис\ Signature	Артюшов С.А.

Energy in action

PROJECT EVALUATION FORM
ФОРМА ОЦІНКИ ПРОЕКТУ

DTEK TYLYGULSKA WIND POWER PLANT LLC
ТОВ «ДТЕК ТИЛІГУЛЬСЬКА ВІТРОЕЛЕКТРОСТАНЦІЯ»

04119, Україна, м. Київ, вул. Хохлових Сім'ї, буд. 8, літера 20Д
Тел..+38 044 594 46 52

LOCAL STAKEHOLDER MEETING
МІСЦЕВА ЗУСТРІЧ ЗАЦІКАВЛЕНИХ СТОРІН

Ім'я та Прізвище оцінювача \ The Evaluator Name and Surname:	[redacted]
Місце робот\Професія\ Job:	Лозрка П.І Блюменфельт К.
Дата зустрічі \ Meeting Date::	24.11.23
Місце зустрічі \ Meeting Location::	[redacted]

Які аспекти проекту ви вважаєте **позитивними** \ What are the aspects that you find **positive** about the project?

Додаткові робочі місця для мешканців громади. Екологічно чисто електроенергію

Які аспекти проекту ви вважаєте **негативними**? \ What are the aspects that you find **negative** about the project?

Немає

Підпис\ Signature	Вереловець О.О.