



International Carbon Registry

Ovid Wind Farm Project

Monitoring Report

Ovid Wind Farm Project (WFP) is a renewable type of wind power plant, located in Odesa in Ukraine with an operation start date of 1 May 2019. 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. Ovid WFP is a large scale project activity with an installed capacity of 32.67 MW, providing 115,428.2 MWh/year clean electricity to the Ukraine grid system, and achieving 74,239 tCO₂ of emission reduction annually. Project activity is expected to achieve 742,390 tCO₂ emission reductions during the 10-year crediting period.



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Basic Information	
ID of project	112
Project Name	Ovid Wind Farm Project
Project Proponent	Ovid Wind LLC
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Statement by the Project Proponent	The Project Proponent states he is responsible for the preparation and fair presentation of the Monitoring Report and all accompanying documentation provided.
Date of submission	03/08/2023
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Version number	1.3
Monitoring Report prepared by	Incigül Polat Erdogan, Environmental Engineer, +90 538 327 5657, iperdogan@gmail.com
Monitoring period	01/05/2019-30/04/2023
Sectoral scope of project activity	1: Energy industries (renewable - / non-renewable sources)
Grouped project	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Other requirements applied	-
Methodology(ies) applied and version number	ACM0002 Grid-connected electricity generation from renewable sources Version 21.0
Type (CDR, avoidance, hybrid)	<input type="checkbox"/> CDR <input checked="" type="checkbox"/> Avoidance <input type="checkbox"/> Hybrid
MRV cycle:	4 year + 3 year +3 year
Other certifications:	-
Estimated annual average GHG emission mitigation (t CO ₂ -e)	74,239 tCO ₂
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1. Project Description

1.1 Purpose and General Description of the Project

Ovid Wind Farm Project (hereafter Ovid WFP and/or project activity) is a renewable type of wind power plant, located in Odesa in Ukraine with the operation start date of 1 May 2019. 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.

Ovid WFP is a large scale project activity with an installed capacity of 32.67 MW, providing 115,428.17 MWh clean electricity to the Ukraine grid system, and achieving 74,239 tCO₂ of emission reduction annually. Project activity was expected to achieve 742,390 tCO₂ emission reductions during the 10-year crediting period.¹

During the first monitoring period, 01/05/2019-30/04/2023, project achieved 273,352 tCO₂ emission reductions, and generated 425,040.82 MWh amount of electricity and supplied it to the Ukraine grid.

Project is owned by the Ovid Wind LLC company,² receiving its electricity generation permission on 18/10/2018 with the number of 1228 from the National State Regulatory Commission in the Spheres of Energy and Public Services.³

As per the Ukraine law, before receiving the permission letter, power plant projects have to receive construction permit and make the system usage agreement with the electricity buyer. Ovid WFP received its initial construction permit on 30/05/2012 with the number of 000237 from the Ministry of Regional Development, Construction and Housing and Community Management of Ukraine. Construction certificate to construct the Ovid WFP was given by the “Department of State Architectural - Construction Inspection in Odesa Oblast” with the number of 162190560438, dated 25/02/2019.

Project activity received the System Usage Agreement with the stated owned Energorynok DP with the number of 15398/01 dated as 02/08/2018. Currently, the electricity buyer company is State Enterprise Guaranteed Buyer (SE Guaranteed Buyer). In 2019, the Energorynok DP restructured into three companies, one of which is SE Guaranteed Buyer, a state-owned trader buying electricity from producers under feed-in tariffs and selling this electricity on the organized day-ahead and intraday markets.⁴ Hence the part signing the system usage agreement became SE Guaranteed Buyer.

Project activity is located in Ovidiopol district, Odesa region in Ukraine.

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

Project activity comprises 9 individual units of wind turbine power plants with a total installed capacity of 32,670^{5,6} kW with an average annual expected electricity generation of 115,428.17 MWh.⁷

¹ ICR, Ovid Wind Farm, Project Description Report, Section 1.1.

² National State Regulatory Commission in the Spheres of Energy and Public Services Ovid WFP electricity generation permission, No 1228, 18/10/2018.

³ Ovid WFP electricity generation permission, No 1228, 18/10/2018.

⁴ <https://www.iea.org/reports/ukraine-energy-profile/market-design>.

⁵ Ovid WFP electricity generation permission, No 1228, 18/10/2018.

⁶ In Ovid WFP, installed capacity is only referenced as MW. In any of the official documents of the project including the General Electric official documents, which is the manufacturer of the wind turbines, installed capacity is not expressed in kWe or kWp. Therefore installed capacity information in kWe and kWp is not indicated in this PDD.

⁷ ICR, Ovid Wind Farm, Project Description Report, Section 1.1.

Ovid wind turbines' commissioning completion test dates and reliability run completion dates are below.⁸ Commissioning completion tests and reliability run completion tests were accomplished by the manufacturer, GE Wind Energy GmbH.

Wind turbines No/Mark	Commissioning completion date	Reliability run completion date
WTG 1 -36170270	25/01/2019	31/01/2019
WTG 2 -36170272	30/01/2019	07/02/2019
WTG 3 - 36170274	04/02/2019	11/02/2019
WTG 4 36170276	02/03/2019	11/03/2019
WTG 5 36170271	28/01/2019	04/02/2019
WTG 6 -36170273	30/01/2019	07/02/2019
WTG 8 36170275	07/02/2019	18/02/2019
WTG 9 36170277	20/02/2019	26/02/2019
WTG 10 36170278	11/03/2019	01/04/2019

Conditions prior to the project

Before the implementation of the project, there was no power plant in the project site. It was an agricultural area owned privately. Project owner leased the lands from the owners. Currently, the empty fields at the project site are still used for agricultural purposes. Project site is not classified as lands of natural protection area.

Before the project activity, 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. The total power generation capacity distribution of Ukraine grid by the end of July 2019 (excluding power generating facilities of the Crimean Electric Power System and the Uncontrolled Territory of the Donbas Electricity System): 57% nuclear, 35% thermal, 7% hydro and 1% renewable (alternative energy).⁹ After the Ukraine war, this ratio has changed due to the destruction of the power plants in the occupied regions in the eastern Ukraine.

Baseline scenario and project boundary

Ovid WFP is a newly installed Greenfield renewable 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 Ovid WFP 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

⁸ Here is the explanation why the number 7 is missing and number 10 is indicated. Initially the project plan was 10 turbines. But there was an issue with land allocation for wtg7 and wind calculation showed that installation of wtg7 will be not effective (it will interfere with other turbines). So, instead of 10 turbines per 3 MW it was decided to install 9 turbines per 3.63 MW. This is the explanation of the wind turbine numbers, why wtg-7 is missing and wtg-10 is indicated.

⁹ <https://www.ukrenergexport.com/en/node/49>.

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;

- Ovid WFP,
- Substation that connects the Ovid WFP to the Ukraine grid system;
- Ukraine grid system.

Technology applied

Project has a configuration of 9 units of wind turbines. The brand of the wind turbines are General Electric with the type of “GE 3.6-137”, which is a three-bladed, upwind, horizontal-axis wind turbine with a rotor diameter of 137 m. The total electric output capacity of each turbine is 3.63 MW (9 x 3.63 = 32.67 MW total output capacity).

SDG Contributions

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

As a renewable electricity generation project, Ovid WFP will contribute to increase of renewable energy share in the total final energy consumption through providing 115,428.17 MWh clean energy annually to the Ukraine grid.

Project activity has also supports 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, 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 with minimum number of 13 employees. Out of these 13 employees, 6 of them are local from Ovidiopol and near districts.

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

The most important SDG impact of the project is its contribution to combat climate change. Project activity, by producing renewable electricity, will annually achieve 74,239 tCO₂/year emission reductions.

1.2 Project Type and Sectoral Scope

Ovid WFP is large scale, Greenfield project activity. Project type is “Type-1 Renewable Energy Projects”.

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, project avoids emission of CO₂ from Ukraine grid system which is dominated by nuclear and thermal power plants.

Sectoral Scope 1: Energy industries (renewable - / non-renewable sources)

1.3 Implementation Status of the Project

Implementation status of the project activity:

- Project was successfully implemented and has been in operation since 01/05/2019.
- Ovid WFP started to operation on 01/05/2019. This is the start date of the crediting period. Project will be in operation 25 years as per the Tool 10: Tool to determine the remaining lifetime of equipment, Version 01,¹⁰ as per the lifetime of the wind turbines.
- Baseline period is the start date of the project activity, 01/05/2019.
- During the monitoring period, 01/05/2019-30/04/2023, Ovid WFP achieved 273,352 tCO2 emission reductions.

1.4 Project Activities

Since the commencing of the project, which is the start date of the project first crediting period 01/05/2019, there has been no change in the technical characteristics of the project. In addition, since then Ovid WFP has been operated smoothly in full capacity, excepting four months in 2022 due to the Ukraine war. Apart from the war, there has been no emergencies or abnormal situations occurred that could negatively affect the production of electricity, so the reduction of GHG emissions. However, due to the Ukraine war, project activity stopped operation for four months as per the Ukraine government directives. Project did not produce electricity between April 2022 and July 2022, including both months.

Hence, in this first crediting period, the project has been operated orderly without any overhauling and/or downtimes of equipment. Only the Ukraine war has caused the project stopped operation. Project's location is not in the war zone currently, but there are missile attacks happens to the Odesa region too. These missile attacks, so far, did not target the project activity.

1.5 Deviations from Project Description

Since the commencing of the project, which is the start date of the project first crediting period 01/05/2019, there has been no change in the technical characteristics of the project. Ovid WFP did not deviate from the project description.

1.6 Grouped Projects

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

1.7 Project Proponent

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

Organization Name	Ovid Wind LLC
Role in the project	Project owner
Contact person	Egemen Yamantürk
Title	Director
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Telephone	+90 533 731 8086
Email	eyamanturk@guris.com.tr

1.8 Other Parties Involved in the Project

Organization Name	Kilittaşı Mühendislik Müşavirlik İnşaat Tic. Ltd. Şti.
Contact person	İncigül Polat Erdogan
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2. Crediting

2.1 Project Start Date

Start date of the project activity is 01/05/2019. Project start date is the official date when the produced electricity started to supply the Ukraine grid system.

2.2 Expected Operational Lifetime of Project Activity

The term of operation of Ovid WFP is 25 years. Average lifetime of the equipment is determined by the wind turbines. According the Tool 10, average lifetime of the wind turbines is 25 years.¹¹

2.3 Start Date and Duration of Crediting

The crediting period of the project activity is 01/05/2019-30/04/2029. Both days are inclusive.¹²

¹¹ Tool 10: Tool to determine the remaining lifetime of equipment, Version 01, <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-10-v1.pdf>.

¹² Due to the ongoing war in Ukraine, operation of the Ovid WFP has been halted by four months in 2022 by the security measures of Ukrainian government and might be halted in the future too. Based on these unfortunate conditions, a possible addition of these halted periods to the 10 years crediting period will be requested from ICR to be evaluated in the last monitoring period.

3. Safeguards

3.1 No Net Harm

No negative environmental and socio-economic impacts have been observed and recorded during the monitoring period.

As per the law of Ukraine "On Environmental Expertise", Ecological Expertise Conclusion Report which is the final official environmental assessment of the project activity by the official experts of Ukraine government stated the project has no negative environmental effects and its potential environmental impacts were found to be environmentally and ecologically acceptable. The report is dated as 27/11/2013 with the number of 000237.¹³

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

Operation of the project has not generated risks to environment. Sewage and solid wastes, including hazardous wastes, have been handled as per the national regulations.

Regarding the social impacts, stakeholder consultation process was applied very recently, on 15 and 16th of May in 2023. In the consultation process, stakeholders, mainly villagers from Ovidiopol district, did not state any negative comments about the project. Grievance book was located at the office of the Ovidiopol district head, and no comments have been received so far. Stakeholders can always reach to the project owner through the project website, <https://ovidwind.com/>. However, after the Ukraine war, the project website content was prevented to be accessed as per the Ukraine government directives. All energy generation facilities in Ukraine have removed their publicity from the internet as per the directives.



Figure 1 Ovid WFP Stakeholder Grievance book located at the Ovidiopol Village Head Office

¹³ Expertise Ecological Conclusion, No. 000237, 27/11/2013.

3.2 Potential Negative Environmental and Socio-Economic Impacts

Environmental impacts of the project activity

Impact on air quality

During the construction of the Ovid WFP, there were only exhaust emissions due to the transportation of equipment and construction materials to the project site. However, this exhaust emission did not affect the microclimate at the project site. Dust emissions during the soil excavation activities had also short-term effects in nature. A change in the microclimate was not expected due to the project activity. The report concluded that impact of the project activity on air quality was found to be ecologically acceptable.¹⁴

Impact on the aquatic environment

Within the proximity of the Ovid WFP, there are two natural water bodies which are 1.1 km and 2.5 km away from the project site, which are Baraboy River and Dniester River respectively. Project did not have a negative impact on these water bodies. Regarding the underground hydrogeology, there was also no negative impact estimated. Foundations of wind turbines had no effect on the underground water. During the construction, accidental oil spillage and leakage might have happened from the vehicles, but it was estimated that this affect would be limited to the project site and was accepted within the environmental limits. The report concluded that project activity had no negative impact on aquatic environment.¹⁵

Impact on soil environment

Possible negative environmental impacts were considered to arise during soil excavation for foundations of the wind turbines. Excavated soil (the most fertile part) would be used for covering the foundations of wind turbines and to fill the slopes (roads). No surplus soil was left at the project site. Possible impact on soil might come from the leakage of fuel and oil from vehicles to the ground, soil part. However, with good construction practices, fuel and oil leakage did not take place during the construction. Generated waste during the construction was stored in metal hermetic containers. The report concluded that impact of the project activity on the geological environment was found to be ecologically acceptable.¹⁶

Waste management

Generated wastes during the construction was handled as per the laws, stored in special containers and handed over to the waste handling organizations for proper disposal. Wastes generated at the construction were classified as class 1-IV waste. Construction wastes are mixed construction and demolition waste; paper materials; paints; used metal containers; cleaning materials. The report concluded that the handling of these wastes and their disposal has been ecologically accepted.¹⁷

Generated wastes during the operation, the first monitoring period, includes municipal wastes and some hazardous waste that comes from the equipments. These wastes are stored in special containers and a subcontractor company regularly disposes these wastes.¹⁸

Impact on vegetation and animal life (wild life)

The project site is 17 km away from the closest natural reservation area, which is the Dalnytskyi forest of the Velykdolyn Forestry; 9 km away from the national park, Nizhnyodnistrovskiy national park. The report stated that project did not have a negative effect on these natural areas. Regarding the impact of the project activity on plant life and animal life was to be very minimal and acceptable by the report.¹⁹

¹⁴ Expertise Ecological Conclusion, No. 000237, 27/11/2013. p.6.

¹⁵ Expertise Ecological Conclusion, No. 000237, 27/11/2013. p.6.

¹⁶ Expertise Ecological Conclusion, No. 000237, 27/11/2013. p.6-7.

¹⁷ Expertise Ecological Conclusion, No. 000237, 27/11/2013. p.7.

¹⁸ Please see the 04_wastehandling file for pictures of containers and the contract done with the subcontractor company which disposes the wastes.

¹⁹ Expertise Ecological Conclusion, No. 000237, 27/11/2013. p.8.

Noise effect on environment

Noise effect of the operation of wind turbines was estimated that the level of noise pollution was already at a distance of 250 m from the wind power plant reaches the normative values established for residential buildings (45.0 dB(A) - at night and 55 dB(A)). Presence of the large buffer zone between wind turbines and the closest settlement building has reduced the noise to the levels below the accepted values. The report concluded that noise pollution was environmentally acceptable.²⁰

In summary, the during the monitoring period, only possible environmental impacts were the generation of the municipal and hazardous wastes by the operation of the Ovid WFP. These wastes have been handled by the project owner through subcontracting with another company, EDRPOU company, which collects the wastes regularly.

Other affects, such as noise, impact on air, soil and water bodies etc. were limited and accepted within the environmental limits as per the environmental impacts assessment studies.

Socio-economic aspects

All phases of Ovid WFP have been creating positive economic benefits to local life. For accessing the project site, access roads were constructed and some existing roads were improved. These roads have been used by other vehicles as well and improve transportation network in the project area. Additionally, the project activity generated new employment during construction and operation periods of the wind farm and provided training of qualified personnel. There are 13 employees working for the project at the current state, 6 of them is from local villages.

In regard the distance of the project site from facilities that may be affected by the project, there are no facilities in vicinity such as schools, children's playground, sport and recreation ground etc. Hence local people's life is not affected by the project activity in negative ways. Closest settlement is Ovidiopol district and its downtown is about 2 km away from the project site. The nearest house is about 0.75 km away from the project site.

At the current stage, stakeholders can access to plant manager by phone and face-to face ways, as well they can also relay their complaints through the grievance notebook located at the Ovidiopol village head. Stakeholder can also find the phone number of the Ovid Wind LLC through their website and relay their comments. No resettlement or physical displacement of people is associated with the Ovid WFP.

If stakeholders provide negative feedback, project plant manager will contact with the stakeholder and will solve the issue.

Before the implementation of the project, it was estimated that the Ovid WFP would increase the recreational attractiveness of the Odesa region due to that there was no other similar power plant in the region. Ovid WFP is the first wind power plant project in the Odesa region.²¹

In addition to that, on 22/08/2012, project was introduced to the Ovidiopol Settlement Council as per the environmental impact assessment procedures of Ukraine. Meeting was organized by the representatives of the Ovid Wind LCC (project owner), General designer (Delta Proektconsult Ukraine LLP) and EIA executor ("EKOZAKHIST Scientific and Production Enterprise"). Intention for implementation of the project activity was also announced through the local mass media on the Ovidiopol district newspaper, "Naddnistrianska Pravda" N235 (5340)/Thursday 29/08/2013. Local people did not state any negative comments and remarks about the project during the meeting. Project was well accepted by the local community.

²⁰ Expertise Ecological Conclusion, dated as 27/11/2013. p.10.

²¹ Expertise Ecological Conclusion, dated as 27/11/2013. p.9.

Long term positive impact of the project is that it generates energy without emitting greenhouse gas emissions, contributing to 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

Consultation with interested parties for the Ovid WFP was conducted on 15/05/2023 and 16/05/2023. Consultation was done face-to-face to instead of a meeting. The reason is that the current war in Ukraine, missile attacks in Odesa region has created an unsafe situation to gather people into a physical location. Announcing meeting date and location would be dangerous too. Besides its danger, local regulatory agencies do not allow also to hold such meetings due to the war conditions. Therefore, the only way to make the consultation was talking with the stakeholders face-to-face.

On 15 and 16th of May in 2023, with 10 villagers from Ovidiopol district joined to the consultation. They were informed about the Ovid WFP and its positive impacts on mitigating climate change. They are delivered a one page document in Ukraine language about the project activity, project's application to ICR standard, and project's positive outcomes to contribute providing clean renewable energy to the Ukraine grid and to combatting global climate change. After providing this information to each individual villager, their opinion was asked.

Their opinions are provided in the Appendix section of this report and summarized below. Participants have found that project is very positive to their local community through providing job opportunities and generating taxes to the local Odesa budget. They found the project is positive to environment and generates renewable electricity. One participant stated that the project installation is okay for the local residents, they are not negatively affected, and they found the project site as good for relaxing and resting. Interestingly one participant stated that the project site is good for taking photos. One participant stated its positive feelings towards the project owner, Ovid Wind LCC company. In general, esthetically, participants found the project site (wind turbines) is beautiful.

Participants did not state any negative comment.

Project owner shared with the participants its phone number and the grievance book located at the village head office.

During the first monitoring period, no comments have been received from the stakeholders.

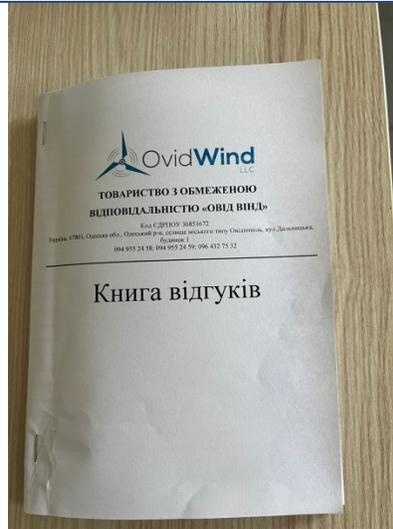


Figure 2 Ovid WFP Stakeholder Grievance book located at the Ovidiopol Village Head Office

3.4 Environmental Impact Assessment (EIA)

As per the law of Ukraine "On Environmental Expertise", Ecological Expertise Conclusion Report which is the final official environmental assessment of the project activity by the official experts of Ukraine government stated the project has no negative environmental effects and its potential environmental impacts were found to be environmentally and ecologically acceptable. The report is dated as 27/11/2013 with the number of 000237.²²

3.5 Risk Management

Before its implementation, project's potential adverse effects during construction and operation were analyzed through conducting an environmental impact analysis. As per the law of Ukraine "On Environmental Expertise", Ecological Expertise Conclusion Report which is the final official environmental assessment of the project activity by the official experts of Ukraine government stated the project has no negative environmental effects and its potential environmental impacts were found to be environmentally and ecologically acceptable. The report is dated as 27/11/2013 with the number of 000237.²³

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 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.

Operation of the Ovid WFP also 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.

²² Expertise Ecological Conclusion, No. 000237, 27/11/2013.

²³ Expertise Ecological Conclusion, No. 000237, 27/11/2013.

4. Methodology

4.1 Reference to the applied Methodology (if applicable)

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

Methodology

ACM0002 Grid-connected electricity generation from renewable sources, Version 21.0.²⁴

Tools

Tool 01: Tool for the demonstration and assessment of additionality, Version 7.0.0.²⁵

Tool 07: Tool to calculate the emission factor for an electricity system, Version 07.0.²⁶

4.2 Deviation from Methodology

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

4.3 Other Information Relating to Methodology Application

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

²⁴ <https://cdm.unfccc.int/UserManagement/FileStorage/ZPFJL01OU2RYC6N3HASIXV7K84QBG9>.

²⁵ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>

²⁶ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>.

5. Monitoring

5.1 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 is the responsibility of the Ovid Wind LLC, which is the project owner.

Monitoring plan will be implemented as per the ACM0002 Grid-connected electricity generation from renewable sources Version 21.0. Data parameters to be monitored are provided in Section 5.2 and 5.3. These parameters have been monitored transparently with meeting the basic quality control conditions.

Generated electricity by the Ovid WFP has been delivered to the Ukraine power grid system. The substation where the project electricity supplies to the national grid has been operated by the Oblenergo company. Oblenergo is a private entity, acting as the electricity distribution system operator.

At the substation, there are two power meters, one is main and the other one is backup. These meters continuously have been measuring the electricity supplied to the grid. Project owner has no control on these power meters; they have been sealed and protected from possible interventions. Oblenergo has been applying remote reading to these power meters.

The main source of the electricity generation by the project activity is the invoices both in hardcopy and softcopy format which have been sent by the electricity purchasing company. Generated electricity by the project activity was purchased by the government owned company, State Enterprise SE Guaranteed Buyer. But the invoices come through Oblenergo company. Every month, Ovid WFP has received an email from the SE Guaranteed Buyer company. The email shows the net amount of electricity generated by the Ovid WFP. Electricity consumed by the Ovid WFP is deducted from the gross generated electricity. Hence the amount of electricity indicated in the emails represents the net amount, which is the $EG_{p,y}$ monitoring parameter. SE Guaranteed Buyer also send monthly mails (hardcopy of those emails), however since the start of the war in February 2022, mailing has stopped. Hence hardcopy data is not available since the start of the war.

Monitoring parameter

$EG_{p,y}$ is the monitoring parameter, which is the quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity in year y (MWh/yr). The source of data is the measurements of the power meters located at the Ovidiopol substation. The invoices both in hardcopy and softcopy format which have been sent by the electricity purchasing company, Oblenergo company, to the project owner is the proof documents of $EG_{p,y}$ data.

Power meters at the substation, operated by Oblenergo:

Itron brand, SY700 type, 3x57, 7/100V, 11I5 (10) A, 50 Hz.

Power meter	Operated by	Brand	Model	Serial No	Accuracy class
Main meter	Oblenergo	Itron	SL7000	83898670	0.2
Backup meter	Oblenergo	Itron	SL7000	83898673	0.2

Cross-check:

Project owner (Ovid Wind LLC) has also power meters (main and backup) installed at the outlet of the project site. The readings of these power meters can be used for cross-checking.

Itron brand, SY700 type, 3x57, 7/100V, 11I5 (10) A, 50 Hz.

Power meter	Operated by	Brand	Model	Serial No	Accuracy class
Main meter	Ovid Wind LLC	Itron	SL7000	83883594	0.2
Backup meter	Ovid Wind LLC	Itron	SL7000	83898710	0.2

Testing and calibration of power meters

Both power meters located at the Ovidiopol substation and Ovid WFP site are calibrated at the factory, and tested during the commissioning process. As first index protocol, power meters at the Oblenergo station were taken into operation on 07/03/2019 as it can be seen in the Passport-record of ASCOE document, signed by the Ovid Wind LLC and LG Smart Energy, which is the contractor of ASCOE.²⁷ ASCOE is the “Automated system of commercial electricity accounting” in Ukraine. ASCOE in Odesa region is operated/managed by the Oblenergo company.

On 08/04/2019, Ovid WFP was commissioned, and started to generate electricity.²⁸ This document signed among the parties of Oblenergo, LG Smart LLC and Ovid Wind LLC. However project officially started to supply the Ukraine grid system on 01/05/2019, and received payment.

Power meters are calibrated every 6 years as 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 of the regulation).²⁹ As per the regulation, If the calibration results show that power meter is not working properly, then the electricity distributor company replaces the power meter. In Ovid WFP, after 6 years, calibration will be applied to the power meters. Therefore, there is no calibration process applied so far.

As per this regulation, the calibration frequency for the monitoring equipment is 6 years.

Other than the calibration, project owner has been making contract with the LG Smart LLC annually which runs the ASCOE program for the Ovid WFP. As per this contract, ASCOE program is monitored on a continuous basis, and correcting the ASCOE software in case a bug recognized. This program also allows checking of the power meters data. In case of a problem recognized by the power meters’ data, LG Smart LLC informs the project owner. Then project owner contacts with the Oblenergo to test the power meters. In Ovid WFP, in 2019 LG Smart LLC provided ASCOE monitoring service under the warranty, hence there was no contract for that year. In 2020 project owner made a new contract with LG Smart LLC.³⁰ In 2021, the contract renewed and it covers the 2021 and upcoming years.³¹ Since the operation start date, as per the ASCOE program, power meters operated smoothly, no malfunction recognized so far.

The power meters installed at the project site were not replaced/changes. They are the same ones since the project start date.

Power meters were tested during the commissioning process.³² Regarding calibration, power meters were already calibrated by the manufacturer.

²⁷ Passport-record of ASCOE.pdf, to be provided to the DoE, in the folder, 05_PowerMeters_and_commissionings.

²⁸ 2019.04.08_Act_ASCOE commissioning_UA.pdf, to be provided to the DoE in the folder, 05_PowerMeters_and_commissionings.

²⁹ <https://zakon.rada.gov.ua/laws/show/z1417-16#Text>. (Due to the current war in Ukraine, accessing to the link outside Ukraine is not allowed. In Ukraine, one can access to the site).

³⁰ 2020 04 01 OW & Smart energy (ASCOE).pdf

³¹ 210201 OW 06-21 LG Smart Energy (ASCOE).pdf

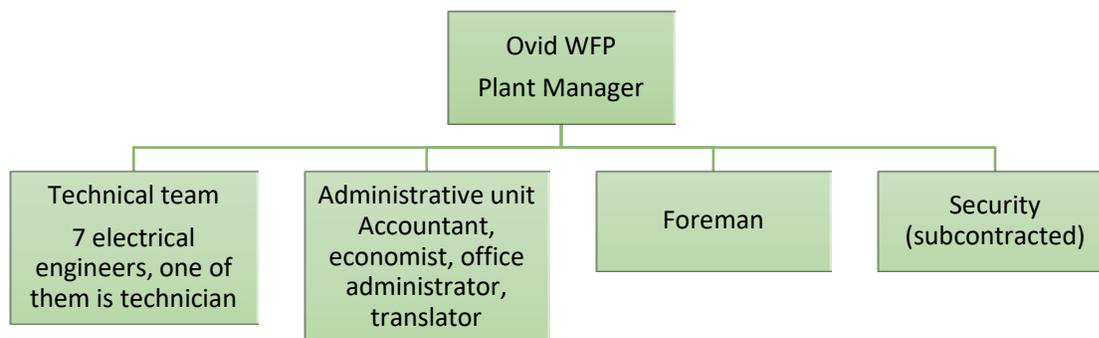
³² Passport-record of ASCOE.pdf, to be provided to the DoE, in the folder, 05_PowerMeters_and_commissionings.

Project's emission reduction calculations

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

Vintage period	Ovid WFP annual electricity generation (MWh)	$BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$	Expected annual emission reduction by the Ovid WFP (tCO2/yr)
01/05/2019-31/12/2019	69,506.60	69,506.60 x 0.643167971743973	44,701
2020	113,913.62	113,913.62 x 0.643167971743973	73,259
2021	116,769.38	116,769.38 x 0.643167971743973	75,097
2022	78,811.04	116,769.38 x 0.643167971743973	50,686
01/01/2023-30/04/2023	46,040.19	46,040.19 x 0.643167971743973	29,609
Total			273,352

Project Monitoring Organizational Structure



Ovid WFP Monitoring Organizational Structure

There are 13 employees working at the Ovid WFP. Out of this, 6 employees are from local districts.

Plant manager is responsible for the full operation of the Ovid WFP. Plant manager is also responsible for implementing this monitoring plan, ensuring proper archiving of the monitoring parameters ($EG_{PJ,y}$). There is no need for monitoring ex-ante parameters which was fixed during the validation process and will not revised during the crediting period.

Technical team consists of 7 numbers of electrical engineers. Four of them are working as dispatcher. One of them is working as a technician. Two of them are responsible for general technical maintenance of the project site.

Regarding administrative unit, there is one accountant, one economist, one office administrator and one translator. Regarding the monitoring parameters, which is the quantity of net amount of electricity generation by the project activity ($EG_{PJ,y}$) is followed by and achieved by the accountant.

There is one foreman who is responsible for general works, such as cutting grass etc.

Security of the project site is outsourced.

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

All data for each monitoring parameters has been be archived during the project and will be kept for 5 more years following the end of the crediting period.

5.2 Data and Parameters remaining constant

Complete the table for data and parameters which **remain constant** throughout the project crediting period. Amend as needed.

Data / Parameter	$EF_{grid,CM,y}$
Unit	t CO ₂ /MWh
Description	Combined margin CO ₂ emission factor for grid connected power generation in year y calculated using TOOL07
Origin of data	UNFCCC IFI Default Grid Factors, April 2022, v.3.2.
Value applied	0.643167971743973 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	<input checked="" type="checkbox"/> Calculation of baseline emissions <input type="checkbox"/> Calculation of project emissions <input type="checkbox"/> Calculation of leakage
Comments	-

5.3 Data and Parameters Monitored

Data / Parameter	$EG_{PJ,y}$
Unit	MWh
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	Project owner's invoices delivered to the project owner by Oblenergo, the electricity distribution company.																		
Monitored value	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Year</th> <th>Generated electricity (MWh)</th> </tr> </thead> <tbody> <tr> <td>01/05/2019-31/12/2019</td> <td>69,506.60</td> </tr> <tr> <td>2020</td> <td>113,913.62</td> </tr> <tr> <td>2021</td> <td>116,769.38</td> </tr> <tr> <td>2022</td> <td>78,811.04</td> </tr> <tr> <td>01/01/2023-30/04/2023</td> <td>46,040.19</td> </tr> </tbody> </table>	Year	Generated electricity (MWh)	01/05/2019-31/12/2019	69,506.60	2020	113,913.62	2021	116,769.38	2022	78,811.04	01/01/2023-30/04/2023	46,040.19						
Year	Generated electricity (MWh)																		
01/05/2019-31/12/2019	69,506.60																		
2020	113,913.62																		
2021	116,769.38																		
2022	78,811.04																		
01/01/2023-30/04/2023	46,040.19																		
Justification of choice of data or description of measurement methods and procedures applied	<p>Project owner's invoices delivered to the project owner by Oblenergo, the electricity distribution company.</p> <p>Invoices are created based on the net amount of electricity delivered to the Ukraine grid system by the project activity. Net amount of electricity is measured by the power meters.</p> <p>At the Ovidiopok substation where the project electricity is connected to the Ukraine grid, there are two power meters, one main and one backup.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Power meter</th> <th>Operated by</th> <th>Brand</th> <th>Model</th> <th>Serial No</th> <th>Accuracy class</th> </tr> </thead> <tbody> <tr> <td>Main meter</td> <td>Oblenergo</td> <td>Itron</td> <td>SL7000</td> <td>83898670</td> <td>0.2</td> </tr> <tr> <td>Backup meter</td> <td>Oblenergo</td> <td>Itron</td> <td>SL7000</td> <td>83898673</td> <td>0.2</td> </tr> </tbody> </table> <p>These power meters were taken into operation on 07/03/2019 as it can be seen in the Passport-record of ASCOE document, signed by the Ovid Wind LLC and LG Smart Energy, which is the contractor of ASCOE. ³³ According to the Ukraine regulations, the same procedure was not applied to the following cross-check power meters installed within the boundary of the project site. Passport-record of ASCOE.pdf document provided to the DoE, represents the first index protocol.</p> <p>Cross-check:</p> <p>Project owner (Ovid Wind LLC) has also power meters (main and backup) installed at the outlet of the project site. The readings of these power meters can be used for cross-checking.</p>	Power meter	Operated by	Brand	Model	Serial No	Accuracy class	Main meter	Oblenergo	Itron	SL7000	83898670	0.2	Backup meter	Oblenergo	Itron	SL7000	83898673	0.2
Power meter	Operated by	Brand	Model	Serial No	Accuracy class														
Main meter	Oblenergo	Itron	SL7000	83898670	0.2														
Backup meter	Oblenergo	Itron	SL7000	83898673	0.2														

³³ Passport-record of ASCOE.pdf, to be provided to the DoE.

	Power meter	Operated by	Brand	Model	Serial No	Accuracy class
	Main meter	Ovid Wind LLC	Itron	SL7000	83883594	0.2
	Backup meter	Ovid Wind LLC	Itron	SL7000	83898710	0.2
	<p>Since the start of the project, 01/05/2019, power meters have not been replaced at both Ovidiopol substation and Ovid WFP project site.</p>					
Monitoring frequency	Measurement done continuously, but monitoring is annually					
Purpose of data	<input checked="" type="checkbox"/> Calculation of baseline emissions <input type="checkbox"/> Calculation of project emissions <input type="checkbox"/> Calculation of leakage					
Quality assurance and control	<p>QA/QC procedure has been applied as per the related Ukraine regulation. Power meters are calibrated every 6 years as per the Ukraine regulations (“On the approval of inter-verification intervals of legally regulated measuring equipment in operation, by categories, 1416-16, 21/02/2020 (edition)”, (item 39 of the regulation).³⁴</p> <p>As per the regulation, if the calibration process show that power meter is not working properly, then the electricity distributor company (Oblenergo) replaces the power meter. In Ovid WFP, official calibration will be applied to the power meters in 2025.</p> <p>Other than the calibration, project owner has been making contract with the LG Smart LLC annually which runs the ASCOE program for the Ovid WFP. As per this contract, ASCOE program is monitored on a continuous basis, and correcting the ASCOE software in case a bug recognized. This program also allows checking of the power meters data. In case of a problem recognized by the power meters’ data, LG Smart LLC informs the project owner. Then project owner contacts with the Oblenergo to test the power meters. In Ovid WFP, in 2019 LG Smart LLC provided ASCOE monitoring service under the warranty, hence there was no contract for that year. In 2020 project owner made a new contract with LG Smart LLC. ³⁵ In 2021, the contract renewed and it covers the 2021 and upcoming years.³⁶ Since the operation start date, as per the ASCOE program, power meters operated smoothly, no malfunction recognized so far.</p> <p>All data for each monitoring parameters will be archived during the project and will be kept for 5 more years following the end of the crediting period.</p>					

³⁴ <https://zakon.rada.gov.ua/laws/show/z1417-16#Text>. (Due to the current war in Ukraine, accessing to the link outside Ukraine is not allowed. In Ukraine, one can access to the site).

³⁵ 2020 04 01 OW & Smart energy (ASCOE).pdf

³⁶ 210201 OW 06-21 LG Smart Energy (ASCOE).pdf

Comments

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6. Quantification of 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:

$$ER_y = BE_y - PE_y$$

Where:

ER_y = Emission reductions in year y (t CO₂e/yr)

BE_y = Baseline emissions in year y (t CO₂/yr)

PE_y = Project emissions in year y (t CO₂e/yr)

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

Date	Ovid WFP annual electricity generation (MWh)	$BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$	Expected annual emission reduction by the Ovid WFP (tCO ₂ /yr)
01/05/2019-31/12/2019	69,506.60	69,506.60 x0.643167971743973	44,701
2020	113,913.62	113,913.62 x 0.643167971743973	73,259
2021	116,769.38	116,769.38 x 0.643167971743973	75,097
2022	78,811.04	78,811.04 x 0.643167971743973	50,686
01/01/2023-30/04/2023	46,040.19	46,040.19 x 0.643167971743973	29,609
TOTAL	425,040,82		273,352

6.1 Baseline Emissions

As per the ACM0002 Grid-connected electricity generation from renewable sources Version 21.0, “baseline emissions include only CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:”

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

Where:

BE_y = Baseline emissions in year y (t CO₂/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 TOOL07 (t CO₂/MWh)

For Greenfield power plant with or without BESS, quantity of net electricity generation ($EG_{PJ,y}$) 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.

$$EF_{grid,CM,y} = 0.643167971743973^{37} \text{ tCO}_2/\text{MWh}$$

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 74,239 tCO₂/yr

6.2 Project Emissions

Since Ovid WFP is renewable type Greenfield energy project, as per the ACM0002 Grid-connected electricity generation from renewable sources Version 21.0,

$$PE_y = 0$$

Where

PE_y = Project emissions in year y (t CO₂e/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. Ovid WFP does not consist of any of these sources. Therefore project emission is taken as zero.³⁸

6.3 Leakage

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

$$LE_y = 0$$

Where

LE_y = Leakage emissions in year y (t CO₂e/yr)

ACM0002 Grid-connected electricity generation from renewable sources Version 21.0 states that "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."

³⁷ IFI Default Grid Factors April 2022 v3.2., [Harmonized IFI Default Grid Factors 2021 v3.2 | UNFCCC](#).

³⁸ ACM0002 Grid-connected electricity generation from renewable sources, Version 21.0, p. 14.

6.4 Risk Assessment for Permanence

For the project activity, the most significant risk is a missile attack to the project site. Ukraine has been in war since February 2022. Such an attack may give significant damage to the project. Besides that, damage to the Ukraine grid system by missile attacks also bears risks. Since the start of the war, project owner received order from the military to stop the operation. Hence, Ovid WFP did not generate electricity from 26.03.2022 to 30.07.2022.

Besides the war, which is out of the control of the project owner, the other risks may include operational and technical risks.

These risks, however, through the routine maintenance activities are eliminated. Routine technical inspections include monitoring of proper operation modes through SCADA, regular visual inspection of equipment, regular maintenance of equipment (substation, wind turbines), operational communication with Ukrenergo (transmission system operator) and Oblenergo (distribution system operator), technical and health and safety trainings for personnel.

These technical measures eliminate the risks that would cause disruption of GHG emission reductions by the project activity.

6.5 Net GHG Emission Mitigations

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage (tCO ₂ e)	Net GHG emission mitigations (tCO ₂ e)	Buffer determination	Credits eligible for activation/ issuance
01/05/2019-31/12/2019	44,701	0	0	44,701	0	44,701
2020	73,259	0	0	73,259	0	73,259
2021	75,097	0	0	75,097	0	75,097
2022	50,686	0	0	50,686	0	50,686
01/01/2023-30/04/2023	29,609	0	0	29,609	0	29,609
Total	273,352	0	0	273,352	0	273,352

7. 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 Ovid WFP. This data is measured by the power meters operated by the Oblenergo. 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 5.1, are parameterized every 6 years as per the national regulations. Hence, the data generated by the power meters are in compliance with the national regulations.

The archive of the annual net electricity generation data on a monthly base has been kept by the electricity purchaser company, SE Guaranteed Buyer, and the accountant office of the project owner.

Appendix

Provide additional information as needed for improved transparency. Additional information can be attached as a separate file to the registry but provide reference to supplementary documentation.