



Non-Technical Report for the Environmental Impact Study (EIS)
of the "OXEILA" Wind Farm (58,8 MW) prepared by TERNAL ENERGY S.A.
in Municipality of Sintiki, Regional Unit of Serres, Greece

August 2025
G. Sioulas & Partners L.P.
K. Karatheodori 1, Komotini 69131, Greece.
e-mail: gsioul@gmail.com

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1 NON-TECHNICAL REPORT

1.1 Brief Description of the Project's Key Elements – Location – Administrative Jurisdiction

The Environmental Impact Study (EIS) and the Special Ecological Assessment (SEA) concern the construction and operation of a Wind Farm (WF) with a total installed capacity of 58,8 MW, as well as its associated infrastructure (access road, external 33kV Medium Voltage network).

The project is located at the site "OXEILA" within the Municipal District of "Agistro and Achladochori", in the Municipality of Sintiki, Regional Unit of Serres. The wind turbines (WT) of this Wind Farm are positioned along an area expanding from the northeast, near the Greek-Bulgarian border, toward the southwest. In relation to the settlement of "Agistro," the proposed project (Wind Farm) will be situated to the east, while in relation to the settlement of "Achladochori," it will be located to the north-northwest.

The key elements of the proposed project are as follows:

- The formation of 14 foundations sites for the installation of an equal number of wind turbines (WT).
- The construction and operation of 14 WTs, each with a nominal capacity of 4,2 MW. The wind turbines will be electrically connected via autonomous step-up transformers of 0,72kV/33kV voltage, with an underground medium voltage (MV) line to be constructed along the roads used for accessing the WT installation sites. The transformers are planned to be placed inside the nacelles of each WT and depending on the technical solutions of the final designs, to ensure smooth and safer maintenance and operation.
- The construction of a Control Center (CC) where the internal branches of the medium voltage (MV) network from all WTs will converge. Each WT of the wind farm (WF) will be connected to the MV network via an electric transformer (0,72/33 kV), followed by a circuit carrying the total power to the licensed 33/150 kV step-up to existing substation in location "Anthotopos", which is connected to the overhead 150 kV transmission line, type 2B, leading to the "Sidirokastro" substation. The construction of CC covers an area of 4.000,63 m², part of which will be restored after the end of construction.
- The underground MV line connecting the WTs to the Control Center (internal MV network) will be approximately 11.106,67 meters (11.1 km) long. The wind turbines will be connected to the interconnected system via the 'Anthotopos' substation, which serves as the connection point between the proposed project (Wind Farm) and the "Anthotopos" substation via an external MV network which will be approximately 10,99 km long. Both the internal and external MV lines will be underground throughout their entire length and will be routed along existing road networks. At the new substation, voltage will be stepped up from 33 kV to 150 kV.

- Road network development (new roads and improvements to existing ones) will total 17.915,42 meters (17,9 km). The length of newly constructed roads will be 13.341,60 meters and improvements to existing roads will total 4.573,82 meters. Access to the wind farm will also be possible via the existing agricultural and forest road network. Equipment means (transportation vehicles) will access the site from the southwest (via Sidirokastro).
- A separate Construction Site (CS) with an area of 4.000,44 m² is planned near wind turbine 12 for the project's construction needs.

The proposed wind farm project is a significant investment in clean energy and will contribute to efforts to address climate change and reduce energy dependence on fossil fuels, thereby contributing to the reduction of greenhouse gas emissions. The project's location at "OXEILA" was selected after careful consideration of alternative sites, considering environmental, technical, and social factors, as well as available climate change projections, aiming to minimize potential impacts and maximize the efficiency of the wind farm, thus enhancing its contribution to clean energy.

1.2 Project Siting

1.2.1 Established boundaries of settlements or approved urban or other regulatory plans.

The location of the proposed wind farm is outside the established boundaries of settlements or approved urban or other regulatory plans (e.g., General Urban Plans, Land Use Plans, etc.).

The nearest settlement to the closest wind turbine (WT) is the village of "Agistro," located 3,78 km to the west-northwest of WT01. The next closest settlement is "Achladochori," located 4,95 km southeast of WT06. In Bulgaria, the villages "Lehovo" and "Goleshovo" are located 5,07 km northwest of WT08 and 5,99 km north-northeast of WT14, respectively.

The new proposed "Anthotopos" substation is licensed for a site south of WT01, at a straight-line distance of approximately 4,8 km.

1.2.2 Boundaries of Protected Areas (Law 3937/2011)

The project area partially falls within protected areas under national legislation (Law 3937/2011). Specifically, it partially overlaps with the boundaries of two Special Areas of Conservation (SAC) of the Natura 2000 European network and with Zone B of the Kerkini Lake National Park, while it is outside the boundaries of Important Bird Areas (IBA).

More specifically, part of Polygon B, which includes the foundation sites for WTs 12, 13, and 14 as well as a section of the Construction Site Facilities area, lies within the Special Area of Conservation named "Peaks of Orvilos Mountain" (code GR1260005) of the Natura 2000 network. Additionally, access road branches "18" through "24" to the proposed wind farm lie within the Special Area of Conservation named "Lake Kerkini – Krousia – Peaks of Beles

Mountain, Agistro – Charopo" (code GR1260001). The proposed wind farm is located beyond the designated priority natural habitat areas.

Furthermore, the above-mentioned access road branches ("18" to "24") are located within the boundaries of Protection Zone B of the Kerkini Lake wetland, as defined under national legislation (Ministerial Decision No. 66272/25-06-1993).

1.2.3 Forests, forest lands, and reforestable areas

The wind farm is located entirely within forested areas, apart from a section of the external MV interconnection network's route.

The total affected area amounts to 289.477,02 m² within forested land and 19,65 m² within non-forested land. It is noted that the 289.477,02 m² also includes the installation works for the underground MV interconnection line connecting the wind farm to the Independent Power Transmission Operator (IPTO or *ADMIE*) S.A. (external MV network), which has a total length of 10,99 km, of which 9.750,50 m fall within forested areas and the remaining 1.241,29 m in non-forested areas. This corresponds to a total area of 6,825.35 m² (9.750,50 m * 0,70 m trench width). However, this network will be installed exclusively along an existing road network.

The surrounding area falls under the supervision and management of the local Forest Service Agency.

1.2.4 Public Utility and Social Infrastructure Facilities

The nearest land access infrastructure to the study area is the agricultural-forest road connecting Agistro to Achladochori, located 370 meters south of the proposed location of WT01. From "Achladochori", road connection to the capital of the Municipality of "Sintiki (Sidirokastro)" is achieved via the Secondary Provincial Road Sidirokastro – Achladochori – Ano Vrontou, south of the proposed wind turbine sites, and about 5,25 km from WT06 (the closest turbine). Similarly, from Agistro, access is achieved via the Secondary Provincial Road Agistro – Promachonas, and then via the perpendicular axis (vertical axis) of the Egnatia Motorway "Thessaloniki – Serres – Promachonas" (Bulgaria – Pan-European Corridor IV) up to the Sidirokastro interchange.

1.2.5 Archaeological and cultural sites of interest

In the area proposed for the installation of the WF, there are no declared archaeological sites, designated cultural monuments, historic places, or traditional settlements. The nearest declared cultural heritage site is located 4,16 km northwest of WT01 and specifically refers to the "Building, Agistro, Serres, purported ownership of the heirs of Theodoridis," which is located within the settlement of Agistro, is a point monument, and is classified as a "modern monument."

1.3 Significant Environmental Impacts

Renewable energy projects, such as wind farms, are generally considered necessary for the transition to a low-carbon economy and for addressing climate change. However, it is important to acknowledge that such projects can also have environmental impacts, especially during their construction phase and when they involve construction activities in forested and protected areas. Specifically, in the case of Greece, renewable energy projects offer several significant positive contributions to the country's economy and environment such as:

- (i) Catalytic contribution to achieving the targets of the Kyoto Protocol for the reduction of greenhouse gas emissions. Delays in promoting renewable energy do not only mean no improvement in atmospheric environment quality, but also significant damage to the national economy, based on the application of the Emissions Trading System in the EU-25.
- (ii) The country's high dependence on fossil fuels makes the promotion of renewable energy imperative, allowing the occupation of a larger share of the nation's energy mix. This clearly demonstrates that economic growth and sustainable development are converging goals
- (iii) Greece possesses one of the highest wind potentials in Europe. This means that to achieve a given energy production, fewer wind turbines and associated infrastructure are required.
- (iv) The country's energy production mainly relies on lignite power plants, which has proven to have serious health consequences for residents residing near such power plants.

Wind farms have zero emissions of solid, liquid, and gaseous pollutants during their operation. Therefore, they do not impose a burden on the natural environment of the area where they are installed, or the planet's climate regarding greenhouse gases (GHG). However, during the construction phase of each project as well as during the decommissioning phase, gaseous emissions, mainly carbon dioxide (CO₂), are produced by the construction machinery.

There is no doubt that, like in every project, from the simplest to the most complex, wind farms also have a series of environmental impacts. In most cases, however, the intensity and extent of these impacts are minor and should not preclude their installation.

Based on the analysis of this Environmental Impact Study (EIS), a concise assessment of the expected environmental impacts from the construction and operation of the proposed project is presented in the tables below.

Table 1: Summary Table of Environmental Impact Assessment of the Project Under Study During the Construction Phase

Environmental parameters	Probability	Extent	Complexity	Time Horizon	Positive (P) / Negative (N)	Intensity	Prevention	Avoidance	Reversal	Minimization	Synergistic (S) or Transboundary (T) impacts
Climate											
i. Microclimate						O					
ii. Climate change mitigation	4	R, N	D & I	P	N	-/O	Partially	Partially	Fully	Partially	
iii. Climate change adaptation	3	L	D	P	N	--	Partially	Partially	Partially	Partially	
Morphological & landscape characteristics	5	L	D	P&T	N	--	Irreversible	Irreversible	Partially	Partially	
Geological, tectonic and soil characteristics	5	L	D	T	N	--	Irreversible	Irreversible	Partially	Partially	
Natural environment	5	L	D&I	P&T	N	--	Partially	Partially	Partially	Partially	S
Man-made environmen	3	L	D&I	T	N	-	Partially	Irreversible	Partially	Partially	
Socio-economic environment	2	L	D	T	P	+					
Technical infrastructure	3	L	D	T	N	-/O	Partially	Irreversible	Fully	Partially	
Human-induced environmental pressures	2	L	D	T	N	-	Partially	Irreversible	Partially	Partially	S
Atmospheric environment – air quality	5	L	D	T	N	--	Irreversible	Irreversible	Fully	Partially	
Acoustic environment & vibrations	5	L	D	T	N	-	Partially	Irreversible	Fully	Partially	
Electromagnetic fields						O					
Water resources	2	L	D	T	N	-	Partially	Irreversible	Fully	Partially	
Major accidents and disasters	2	L	D&I	T	N	--	Partially	Partially	Partially	Partially	

LEGEND	Probability of occurrence	"1" Unlikely to "5" Certain
	Extent	Local (L), Regional (R), National (N)
	Complexity	Direct (D), Indirect (I)
	Time horizon	Temporary (T), Permanent (P), Repetitiveness (R)
	Prevention, avoidance, reversal, or minimization	Fully reversible, Partially reversible, Irreversible
	Intensity of Estimated Impacts	+++ = Strong Positive, ++ = Moderate Positive, + = Weak Positive, +/O = Negligible Positive, O = Neutral, -/O = Negligible Negative, - = Weak Negative, -- = Moderate Negative, --- = Strong Negative

Table 2: Summary Table of Environmental Impact Assessment of the Project During the Operational Phase

Environmental parameters	Probability	Extent	Complexity	Time Horizon	Positive (P) / Negative (N)	Intensity	Prevention	Avoidance	Reversal	Minimization	Synergistic (S) or Transboundary (T) impacts
Climate											
i. Microclimate	5	L	D	P	N	-/O	Irreversible	Irreversible	Irreversible	Partially	P
ii. Climate change mitigation	5	R	I	P	P	+					P
iii. Climate change adaptation	3	L	D	P	N	--	Partially	Partially	Partially	Partially	P
Morphological & landscape characteristics	5	L	D	P	N	--	Irreversible	Irreversible	Partially	Partially	P
Geological, tectonic and soil characteristics						O					
Natural environment	5	L	D&I	P	N	-	Partially	Partially	Partially	Partially	P
Man-made environmen	3	L	D&I	P	N	-/O	Partially	Irreversible	Partially	Partially	P
Socio-economic environment	3	L	D & I	P	P	+					P
Technical infrastructure						O					
Human-induced environmental pressures	4	L	D	P	N	--	Irreversible	Irreversible	Partially	Partially	P
Atmospheric environment – air quality	5	R	D & I	P	P	+					P
Acoustic environment & vibrations						O					
Electromagnetic fields						O					
Water resources						O					
Major accidents and disasters	2	L	D	T	N	--	Partially	Partially	Partially	Partially	T

LEGEND	Probability of occurrence	"1" Unlikely to "5" Certain
	Extent	Local (L), Regional (R), National (N)
	Complexity	Direct (D), Indirect (I)
	Time horizon	Temporary (T), Permanent (P), Repetitiveness (R)
	Prevention, avoidance, reversal, or minimization	Fully reversible, Partially reversible, Irreversible
	Intensity of Estimated Impacts	++++ Strong Positive, +++ Moderate Positive, ++ Weak Positive, +/O= Negligible Positive, O= Neutral, -/O= Negligible Negative, -= Weak Negative, --= Moderate Negative, ---- Strong Negative

1.3.2 Climate Change-Related Impacts

1.3.2.1 Climate - Microclimate

The proposed project is not expected to affect large-scale climatic parameters such as temperature, rainfall, hail, snowfall, or humidity in the wider area during either its construction or operation phase. During construction, any impact on the microclimate will be localized to the construction areas, on site. These temporary impacts will primarily result from heat emissions from construction machinery and, secondarily, from changes in land use, without causing a significant change in the thermal capacity of the WF area. As the works are highly localized, even these microclimate impacts will not be significant. Following vegetation restoration, the area's thermal capacity is expected to return to its pre-project state during the operation phase. Therefore, the construction and operation of the wind farm are not anticipated to negatively affect the area's microclimatic, climatic, and bioclimatic characteristics.

Regarding climate change mitigation, the detailed calculation of the wind farm's carbon footprint shows that the project's final carbon footprint is negative. Specifically, the project will prevent the emission of 1,869,707.05 tons of CO₂ equivalent (CO₂eq) during its construction and operation phases. Wind farms inherently produce no greenhouse gases or other harmful pollutants. Therefore, this project will contribute to a reduction in pollutant emissions by displacing energy production from conventional means that rely on fossil fuels.

Overall, by optimally exploiting the available wind potential, the project will help the country achieve its environmental goals and international commitments while also upholding the principles of sustainable development.

1.3.2.2 Climate change adaptation

The vulnerability analysis of the project revealed moderate to high levels of vulnerability in the following risk sources, which require risk assessment:

- Forest fire
- Landslide
- Subsidence
- Changes in wind characteristics

The risk assessment is summarized in the following table.

Table 3: Summary of Risk Assessment Analysis

Source of risk	Probability of occurrence	Scale of consequences	Inherent risk	
			Rank	Description
Forest fire	Likely	Devastating	20	Very important
Landslide	Rare	Devastating	5	Low
Subsidence	Rare	Devastating	5	Low
Change in wind characteristics	Impossible ¹	Negligible	2	Negligible

The risk analysis indicates that forest fire constitutes a very significant risk for the wind farm project. Therefore, the adoption of mitigation measures is required for this risk. It is noted that although the consequences of a potential landslide or ground subsidence are assessed as potentially catastrophic for the project, their probability of occurrence is considered very low (rare).

Measures for enhancing adaptation to climate change

Based on the risk analysis, the proposed wind farm project requires additional adaptation measures to enhance its resilience to climate change, particularly regarding the following:

Forest fire

- i. Fire suppression system. As the project is located in a forested area, the installation of a fire suppression system will significantly reduce the risk of fire. (Structural measure).
- ii. Perimeter protection. Perimeter protection, including the control of high vegetation and the clearing of dry vegetation, will significantly reduce the risk of fire spread during the fire season. (Non-structural measure).

It should be noted that the risk of forest fire cannot be fully mitigated by the project alone, as it involves a scale far broader than the project area. Therefore, project-specific measures cannot prevent the occurrence of a fire. Instead, the proposed measures aim to prevent a fire from spreading to the project site itself, thus achieving risk containment and mitigation at the project level.

Landslides & ground subsidence

Although the inherent risk of landslide and subsidence for the project is assessed as low, the following measures are recommended to ensure its safety:

¹According to the outcomes of the presented scenarios.

- i. Geotechnical investigation for roadwork and wind turbines (WT) foundations. Conducting a geotechnical study for both the wind turbine foundations and the associated road works. (Structural measure)
- ii. Design of WT support bases and roads. The design of the wind turbine foundations and road infrastructure must consider the potential for landslides and ensure structural stability, based on the results of the geotechnical study. (Structural measure)

The Environmental Impact Study (EIS) and the Special Ecological Assessment (SEA) thoroughly examine the project's potential impacts on a wide range of environmental factors, including flora, fauna, avifauna, landscape, noise, air quality and water. The studies also evaluate greenhouse gas emissions, the project's vulnerability to climate change, and other major risks such as forest fires, landslides, and ground subsidence.

In conclusion, the findings of the EIS and SEA indicate that with the implementation of the proposed mitigation and protection measures, the most significant environmental impacts from the operation of the WF project are assessed to be of low intensity, local, partially manageable and partially reversible.

The project inherently makes a positive contribution to the reduction of greenhouse gas emissions (GHG), in contrast to conventional energy sources. While acknowledging potential vulnerabilities to hazards such as forest fires, specific adaptation and risk management measures have been designed to ensure the long-term and safe operation of the project.

1.3.3 Impacts on morphological and topological characteristics

The project's construction and operation will impact the soil's relief and morphology through excavations for wind turbine (WT) foundations and platforms, trenches for the medium voltage network, the control center installation area, and limited access road works. These structural works are particularly simple and will not cause significant changes to the topography and relief characteristics of the soil.

To mitigate visual disturbance, the project aims for the visual integration of the wind farm with the landscape. This is achieved by applying aesthetic principles and using techniques like integration, concordance, or contrast to align with the dominant features of the landscape. The goal is to create a visually acceptable aesthetic outcome that avoids annoyance or confusion for the observer.

In any case, the degree of alteration to a landscape depends primarily on its sensitivity and vulnerability. The more aesthetically interesting a landscape is, the more sensitive it is to changes. Ultimately, the visual disturbance that a wind farm can cause is influenced by a number of both objective and subjective factors.

For a better evaluation of the project's landscape impacts, a visibility simulation of the wind turbines (WTs) was performed to assess their visual effect on neighboring areas. This analysis aims to calculate and map the number of WTs visible from various points in the broader area.

In every case the distance between each settlement and the project is considered sufficient to prevent any shadow flicker. Furthermore, the WT's painting (tower and rotor) will be 'absorptive,' ensuring that no reflections are created.

The visibility simulation shows the following results for the closest settlements to the project:

- For the settlement of Agkistrion, the closest to the wind farm, the visual impact is considered moderate due to the size and distance of the WTs. At least 12 wind turbines (WTs) will be visible from the two-thirds of the settlement's area, while from the rest of it 13 to all 14 WTs are observable. The nearest WT is located at a distance of 3.78 km.
- For the settlement of Achladochori, which is 4.95 km away from the wind farm, the visual impact is considered negligible due to the apparent size of the WTs. Only 4 WTs are visible from the entire area of the settlement.
- For the settlement of Lehovo, the closest Bulgarian settlement to the wind farm (5,07 km away), the visual impact is assessed as weak due to the apparent size of the nearest WT. A total of 13 WTs are visible from the entire settlement.
- For the settlement of Goleshovo, which is 5,99 km away from the nearest WT, no visual impact arises, as none of the WTs are visible.
- For the settlement of Kapnofyton, which is 6,57 km away from the nearest WT the visual impact is considered negligible due to the apparent size of the WTs. Only 4 WTs are visible from the entire settlement.
- For the Bulgarian settlement of Petrovo (6,66 km away from the nearest WT), the visual impact is considered negligible due to the apparent size of the WTs. Eight WTs are visible from two-thirds of the settlement, while 6 to 7 WTs are visible from the remaining area.

The analysis shows that the wind turbines will be visible in the immediate study area. However, there are no settlements within at least 3,5 km, and the broader area contains only small, mountainous settlements with no other significant human activities. The sparse arrangement of the WTs (in terms of distance between them) also limits visual disturbance, thus reducing the estimated impacts.

To summarize, the aesthetics of a wind farm is a purely subjective factor. As related studies show, the visual impact depends less on the appearance of the wind turbines themselves and more on the observer's perception of the project's overall purpose and utility.

In conclusion, given that no other wind farms have been licensed in the vicinity and the project's adequate distance from the nearest settlements, no significant visual impact on the characteristics and physiognomy of the immediate and wider area is expected. This conclusion is held despite the mountainous terrain, which allows the turbines to be viewed from a wide range.

1.3.4 Impacts related to geological, tectonic and soil characteristics

The impacts on the geological, tectonic, and soil characteristics of the area are limited to the construction phase of the project. The necessary installation works for the wind turbines (WTs) and accompanying infrastructure will cause moderate-intensity negative impacts on the geological and soil characteristics. These impacts are localized and will not cause any changes to the overall topography of the area. Furthermore, as no deep excavations are required, the works will not lead to unstable ground conditions or changes in the geological arrangement of the rock.

These impacts are considered partially reversible because, once the construction phase is complete, all temporary site installations will be removed, and the affected areas will be fully restored and rehabilitated. As a result, no further impacts are expected during the operation phase.

1.3.5 Impacts on the natural environment

1.3.5.1 Construction phase

Flora:

The project area in northeastern Greece is home to a highly diverse range of plant species, including a significant number of Balkan Peninsula endemic species. The broader area is dominated by deciduous oak forests, with some areas of deciduous shrubs and grasslands with sparse woody vegetation.

During the construction phase, the direct impact on vegetation will be a result of land clearing for project infrastructure. The affected areas include roads, turbine platforms, and the construction and control center site.

Of the 14 turbines, three (turbines 12, 13, and 14) are planned to be installed within the boundaries of the Special Area of Conservation (SAC) "Peaks of Mount Orvilos." It is noted that none of these turbines are located within habitat types of Annex I of Directive 92/43/EEC, or within "priority habitats".

Regarding ancillary works, only a very small section of the access road and the platforms for turbines 13 and 14 are located within habitat type 9150. This affected area covers less than 1 ha (approximately 0,7 ha), which is less than 5% of the 14,27 ha of this habitat type within the project's license polygon. More importantly, this constitutes only 0,26% of the total 268,5 ha of habitat 9150 found within the studied SAC.

In the study area, and specifically in the wind farm installation area, the following Corine Land Cover (2018) land use types predominate: 3.3.3 (Sparsely vegetated areas), 3.1.1 (Broad-leaved Forest), 3.2.4 (Transitional woodland-shrub), 3.2.3 (Sclerophyllous vegetation), 3.2.1 (Natural grasslands), 3.1.3 (Mixed forest), and 1.2.1 (Industrial or commercial units).

Regarding the flora composition of the project installation area, from field sampling carried out as part of the SEA, 283 plant species were recorded. Of these 283, two are species listed in Directive 92/43/EEC (*Gladiolus palustris* and *Fritillaria drenovskii*), while only one of them, *Gladiolus palustris*, belongs to Annex II (*Fritillaria drenovskii* belongs to Annex IV). Additionally, seven species are included in the list of protected flora under Presidential Decree 67/81. According to bibliographic sources, the recorded species appear in numerous locations on Mount Orvilos and in other areas of Greece and the Balkans. Therefore, their presence is not considered rare.

According to forest registration, the project is planned to be developed almost entirely within forested lands. The construction will locally alter the natural condition of these habitats, as it requires the clearing and shaping of soil within the project's footprint. Consequently, the direct impact of construction is considered locally adverse for the immediate area's ecosystems and vegetation. The impact is permanent for the surfaces permanently occupied during the operation phase, but it remains strictly limited to the immediate footprint of the proposed works.

Regarding forests and forested areas, it appears that almost the entire surface of the examined project is planned to be developed in areas that, according to forest registration, belong to forest areas in general.

The construction of the works will alter (locally) the natural condition of the habitats on which they develop, as clearing and shaping of the soil within their occupation zone is required. Thus, the direct impact of the construction of the project can be characterized as locally adverse for ecosystems and vegetation of the immediate area and permanent for the permanently occupied surfaces (from the operation phase) but locally limited to the immediate occupation area of the proposed technical work.

The project design indicates the following extents for the proposed technical work:

1. Turbine platforms: The total intervened area is 109.006,43 m², with most of this area to be restored upon completion of the works.
2. Control cabins: The construction of CC covers an area of 4.000,63 m², part of which will be restored after the end of construction.
3. Construction site: The planned CS will occupy 4.000,44 m², and the entire area will be restored after the works are complete.
4. Roads: The total surface area of interventions, including new openings and improvements, is 165.663,82 m².
5. WTs MV line: The medium voltage (MV) line connecting the WTs to the CC (underground internal MV network) will be laid in trenches following the existing and newly developed road networks. This approach ensures that no additional land areas will be occupied.

6. The underground medium voltage line (MV) connecting the wind farm to the national network (external MV network) has a total length of 10,99 km, of this 9.750,50 m pass through forest areas, while the remaining 1.241,29 m are in non-forest areas. This corresponds to a total intervention area of 7.694,25 m² (based on a trench width of 0,70 m), with 6.825,35 m² of that total being within forest areas. It is important to note that this network will be installed exclusively on existing roads, which further limits the impact.
7. Connection to the grid: The project will connect to the network via the already licensed "Anthotopos" substation, thus limiting impacts.

The construction of the project under study is expected to have significant negative impacts on the vegetation and flora of the immediate project area, while impacts on the wider area are negligible. However, these impacts can be considered partially manageable through natural recolonization and appropriate restoration measures outlined in the environmental impact mitigation chapter. Restoration will primarily occur on the slopes of access and internal roads, as well as on parts of the turbine platforms.

Road interventions within the Special Area of Conservation (SAC) "Lake Kerkini – Kroussia – Peaks of Mount Beles, Agkistro – Charopo" (GR1260001) and its Protection Zone "B" primarily involve local improvements to the existing road network (branches 18 to 24). The total intervention area for these improvements is 6,397.08 m². These interventions are very limited and consequently have negligible impacts.

Only branch 18 constitutes a new road opening, with a total intervention area of 8,996.37 m² over a length of 1,096.25 m. This new opening passes through shrublands and grasslands (habitats 6420, 91M0, 925A, and 5350), reducing impacts on vegetation and the protected area.

It is important to note that none of these interventions take place in priority habitats.

Overall, the construction of the project is expected to have moderately adverse impacts on the flora and vegetation within the project area. These impacts are partially manageable with appropriate mitigation measures, partly reversible, and are considered short-term in the wider area but locally long-term. The EIS indicates that regarding habitats, the wind farm is not expected to reduce the spatial extent of, or cause fragmentation of, the habitat types within adjacent Natura 2000 sites, nor is it expected to affect their representativeness or conservation status.

Fauna (excluding avifauna):

As previously mentioned, land occupation is anticipated for the WF construction, a large part of which will be restored upon completion of the works (e.g., turbine platforms, road slopes). The impacts on habitats are expected to be minor in relation to the overall habitat extent within the study area.

Impacts on fauna (excluding birds) are primarily related to the disturbance of reptile and mammal habitats during the installation of the turbines. The localized interventions at the turbine sites are not expected to significantly affect existing habitats, whereas the construction of new roads will have moderate impacts. During the construction phase, noise levels are expected to increase, but not significantly, potentially leading to the temporary displacement of fauna due to disturbance, without causing other major impacts. It is recommended that noise mitigation measures be implemented.

According to the EIS, with respect to the recorded mammal species, the construction is not expected to cause significant or permanent disturbance or adverse impacts. Following the completion of the works, the area will be restored for fauna use without major changes, provided that the recommended mitigation measures are implemented. "Recorded mammals mostly have high adaptability to human impact and their activity or habitat integrity is not expected to be significantly disrupted. These species are common in Greece (e.g., hare, fox).

Special interest is on wolf (*Canis lupus*) and brown bear (*Ursus arctos*). The brown bear is the only recorded mammal species (excluding bats) belonging to Annex II of Directive 92/43/EEC and is a priority species. The wolf is listed in Annex V of the Directive (only wildcat besides bats belong to Annex IV).

The wolf species typically utilizes large home ranges and prefers forested areas with abundant livestock and herds. Its presence in an area does not necessarily imply a strong or permanent association with the site. Wolves may appear seasonally even far from optimal habitats, including anthropogenically influenced areas. The project area is considered one such habitat, as evidenced by the existing road network and cultivated lands. The project is not expected to significantly impact the area for the wolf. Therefore, the presence of the project is not expected to deter the wolf's occasional presence, although potential human-wolf conflicts may still arise. In this type of project, the construction phase generally involves greater disturbance than the operational phase due to the nature of the works. Consequently, the species is expected to be more significantly affected during the construction phase.

The brown bear (*Ursus arctos*) is a species for which the designation of Special Areas of Conservation is mandatory, particularly as it is a priority species. Today, the presence of the brown bear in Greece is mainly associated with the country's three largest mountain ranges and complexes: a) the Pindos Mountain range, b) the Peristeri mountain range, and c) the Central Rhodope Mountain range. According to the recently updated National Action Plan for the Brown Bear, developed under the LIFE project 'IP 4 Natura' (LIFE16 IPE/GR/000002), the proposed project is located within the species' distribution range. The Action Plan indicates that seven of the pressures/threats listed in Form 4 of the Article 17 six-year report under Directive 92/43, along with five additional ones identified after the species' conservation status was re-evaluated in Greece, are related to the degradation, loss, and fragmentation of suitable habitat for the brown bear.

In Greece, brown bear habitats are primarily threatened by anthropogenic pressures, including illegal logging, forest fires, the unregulated construction of new forest roads, and the development of large-scale transport infrastructure, wind farms, and hydroelectric dams. Regarding the medium-intensity pressure/threat posed by wind farm construction and operation (DO1), the following specific impacts have been identified for the construction phase:

- Disturbance from general human activity during construction
- Noise disturbance from construction activities
- Impacts from the construction of ancillary road infrastructure for material transport and site access
- Impacts from the overall degradation of the habitat.

The habitat in the broader area of the proposed project site is already subject to anthropogenic influence, as evidenced by the existing network of forest and rural roads and cultivated lands. This is further substantiated by the fact that only a very small portion of the planned new road construction will take place within the protected area, specifically, the access road connecting the three wind turbines that are located within the protected zone. Moreover, this road does not cross any priority habitat types.

The installation of the wind farm is not expected to significantly impact the area in this regard. Therefore, as previously mentioned for the wolf, the presence of the wind farm is not expected to deter the occasional presence of the brown bear in the area. Any effects that may arise are likely to be minor, especially since the species' presence in a landscape with significant pre-existing human activity often results in negative outcomes for the species (e.g., damage to crops, attacks on livestock, collisions with vehicles, and so on).

Nevertheless, the section of EIS on additional mitigation measures includes proposals aimed at further minimizing the low probability of negative impacts on both the wolf and the brown bear.

The Balkan chamois (*Rupicapra rupicapra balcanica*) is another important fauna species of interest. This subspecies, found in the Balkan Peninsula, are listed in Annex II and Annex IV of Directive 92/43/EEC. The species was not observed during the fieldwork phase of this study (45 field-person-days between January 2024 and December 2024) and the broader project area, due to its relatively low elevation, is not considered part of the species' native range.

The bats, based on field surveys and a review of the existing literature, it has been concluded that the proposed project is located outside areas with important bat roosting caves and significant foraging zones. Therefore, no significant direct impacts on bats are expected within the study area. Furthermore, the project site is located at a considerable distance from their protected areas and foraging zones. Nevertheless, the EIS and SEA include specific mitigation measures in the corresponding section to further reduce any potential, albeit low, negative impact on bat species bats.

Regarding amphibians, no significant presence was detected within the study area due to the absence of water bodies, which are essential for species requiring special attention or protection. One frog species, the Green Toad (*Bufo viridis*), was recorded in the broader area. This species is very common and widespread in Greece. It is not listed in Annex II of Directive 92/43/EEC, although it is included in Annex IV. Given the very limited presence of amphibians, the construction of the proposed project is not expected to impact these common species..

About reptiles, eight species were identified and recorded during field surveys in the broader project area – three lizard species, three snake species, and two tortoise species. Of these, only the two tortoise species, Hermann's Tortoise (*Testudo hermanni*) and Spur-thighed Tortoise (*Testudo graeca*), are listed in Annex II and Annex IV of Directive 92/43/EEC. Even in the unlikely occurrence of accidental loss of individuals during the construction and installation of the wind farm, such losses would be negligible compared to those caused by other anthropogenic activities (e.g., vehicle collisions on regional and national roads within their range). Nevertheless, specific mitigation measures are also proposed for this taxonomic group, aiming to further reduce any low probability of adverse effects.

As for other fauna, particularly invertebrates, the study concludes that the construction and operation of the project are not expected to cause any impact on their populations or conservation status.

Temporary disturbance is considered fully reversible and short-term, with no risk of habitat fragmentation. Once the construction phase is completed, natural recolonization of temporarily disturbed areas will be possible, and no further interventions will be needed during the operational phase of the project.

Therefore, considering that the project area may be occasionally used by important and protected fauna species (excluding avifauna), even if they are not directly associated with the study area, the impacts from the construction of the wind farm on the local fauna can be considered of moderate intensity, limited in duration, and partially reversible upon completion of the works

Avifauna:

During the construction phase of the wind farm, due to increased noise levels, heightened human presence, and the emission of dust and pollutants, avian species in the immediate vicinity of the project area are expected to relocate to adjacent areas. These surrounding areas are extensive and offer similar habitat characteristics. Upon completion of the construction phase, avian species are expected to return to the area.

For other ecological functions, such as foraging, no significant impacts are anticipated due to the wide availability of suitable habitats in the broader area.

Given that the construction phase is of limited duration, the associated impacts on avifauna are generally assessed as being of moderate intensity, localized, short-term, and reversible.

1.3.5.2 Overall assessment of the construction of the Wind Farm

Based on the information presented above, the construction phase of the Wind Farm at the "OXEILA" site is expected to have moderately intense direct and indirect negative impacts on the ecosystem, its functions, and the flora and fauna of the area.

However, these impacts are anticipated to be localized and will not cause fragmentation of priority habitats that are vital for maintaining the ecosystem's integrity. Furthermore, most of these impacts are short-term (lasting only for the construction period), while some are permanent, such as the construction of wind turbine foundation spots and road network interventions. Finally, some of these impacts can be mitigated through the implementation of appropriate measures.

1.3.5.3 Operation phase

Flora:

During the operational phase of a Wind farm and its associated works, there will be no emissions of gaseous, liquid, or solid wastes that could affect the flora and fauna of the installation area.

The flora of the area is not expected to undergo changes during the operational phase. In land areas disturbed by the construction works (e.g., road slopes, etc.), vegetation will naturally or artificially be restored through appropriate landscaping and restoration interventions. In the areas affected by the fire that broke out on July 18, 2024, the landscaping interventions proposed by the study will have a positive effect by restoring vegetation and clearly improving the existing condition.

Neutral impacts on flora and habitats are expected during the operational phase of the project.

Fauna – excluding avifauna:

During the operational phase, a small portion of the surrounding fauna may be affected by noise and lighting (for flight safety reasons) from the wind turbines, resulting in their displacement from the installation area. Furthermore, since the WF site is not fenced, there will be no isolation or reduced mobility of terrestrial fauna in the area.

Consequently, barrier effects on terrestrial fauna are considered negligible.

As previously stated, according to the Environmental Impact Study (EIS), the mammal species recorded in the study area are predominantly species with high adaptability to human disturbances. Their activity will not be disturbed, nor will vital habitat be lost to an extent that affects their presence, population, or the integrity of their habitat. These species are common throughout much of Greece and have satisfactory (e.g., hare) or particularly large populations (e.g., fox).

Regarding the wolf (*Canis lupus*), the EIS indicates that the species utilizes very large home ranges and a wide array of habitats, primarily preferring forested areas with extensive livestock

farming and abundant herds. Therefore, the presence of the species in the area does not necessarily imply a strong association with the site. The wolf may occasionally appear far from its most suitable habitat, even near inhabited and human-impacted areas. The study site is considered one such human-influenced habitat, as confirmed by the existing network of forest and agricultural roads and cultivated lands. The installation of the wind farm is not expected to significantly impact the area in this regard. Thus, the wind farm's presence is not expected to deter the occasional presence of the wolf, though potential conflicts with humans (e.g., vehicle collisions) may have negative effects on the species. The operational phase is considered to be the least disruptive compared to the construction phase, so the impact on the species is expected to be minimal during this period.

Regarding the brown bear (*Ursus arctos*), the following impacts are noted for the operational phase, which fall under the medium-intensity pressure/threat associated with wind farm construction and operation:

- Impacts from noise disturbance during operation
- Impacts from the construction of ancillary road infrastructure for material transport and site access
- Impacts from the overall degradation of the habitat
- Broader-scale impacts of the wind farm's operation

In conclusion, the EIS and SEA state that the wider installation area is a human-influenced habitat, as confirmed by the existing road network of forest and agricultural roads and cultivated lands. The installation is not expected to significantly impact the area. As with the wolf, the presence of the wind farm is not expected to deter the occasional presence of the brown bear, though the bear's presence in human-dominated areas (existing before the project) can often have negative effects due to human-wildlife conflicts (crop damage, livestock attacks and vehicle collisions).

However, additional mitigation measures are proposed to further reduce any small potential negative impacts on wolves and bears.

The chamois (*Rupicapra rupicapra*) is another important fauna species of interest. Accessibility to its habitat will not increase due to the project, and no habitat loss is expected, as the habitats within the project footprint and the field research area are not suitable for this species.

Regarding bats, the EIS and SEA indicate no significant impacts from the project's installation. The site is located at a distance from protected areas or important foraging zones for bats. Additional mitigation measures are also proposed to further minimize any potential, albeit low, negative impacts.

Amphibians are not present in the study area due to the absence of water bodies, and no protected species or species of particular concern are expected. Given this, no impact from the project operation is expected.

Regarding reptiles, even in the unlikely event of accidental loss of individuals, these losses would be negligible compared to those caused by other human activities, such as vehicle traffic across the national road network. Populations will not be disturbed by such accidental losses. Furthermore, the project area is not expected to host significant populations due to its limited size and the use of existing roads. Therefore, the project's operation and associated works are not expected to significantly affect turtle or reptile populations. Additional mitigation measures are proposed to minimize any potential, albeit low, negative impacts on these faunal groups.

About other fauna, particularly invertebrates, the EIS and SEA conclude that the project's operation will not affect populations or their conservation status.

Generally, the most sensitive species (e.g., small mammals) may be displaced by short distances from noise and light sources, as these factors disturb them.

Consequently, the project's impacts are assessed as weak, negative, direct and indirect, localized, partially mitigable, and partially reversible.

Avifauna:

Regarding impacts on birds during the operational phase, it is noted that the planned 14 turbines are sparsely distributed. Therefore, the ability of birds to cross ridgelines is not expected to be significantly restricted, as there are large gaps and unobstructed hill ranges. The analysis of field recordings in the EIS and SEA indicates that the installation will not cause a significant impact on local birdlife, though theoretical impacts cannot be completely excluded, especially for species sensitive to such structures. No notable synergistic effects with other activities are anticipated within the project study area, given that surrounding land uses are of low impact and intensity.

The Special Ecological Assessment (SEA) examines the following potential specific impacts on avifauna from the operation of the proposed wind farm:

1. Collision impacts: The project's contribution to cumulative collision impacts on species susceptible to collisions with energy infrastructure (mainly scavengers, large raptors, and other large species) is considered relatively small.
2. Loss of habitats and associated structural changes: The project's contribution to cumulative impacts is minimal (due to the presence, potential presence-as it's under licensing, of only 14 WT of the under study WF in the wider area) and the overall impact on habitat loss or degradation at both local and regional scales is considered small.
3. Disturbance – barrier effects: Based on the expected reduction of bird activity areas and their sensitivity, the species anticipated to face minor impacts within the study area (even if all wind projects under licensing are installed) are large scavenger raptors and the Dalmatian pelican.
4. Synergistic/cumulative impacts from all projects in the study area: Significant synergistic impacts with existing projects are not expected. Even in the worst-case

scenario of all licensed WFs, are installed, cumulative impacts are expected to be relatively high but not so severe as to negatively affect conservation targets of protected Natura 2000 sites. The proposed mitigation measures for this project will further help reduce impacts.

These conclusions are based not only on estimates but on field data presented in the Special Ecological Assessment (SEA).

With the adoption of the proposed mitigation measures, impacts on birds are expected to be mitigated.

Based on thorough evaluation and summary in chapter 10 of the EIS, the examined Wind project at "OXEILA" site (with full implementation of mitigation measures):

- It is not expected to delay or disrupt progress toward conservation targets of Natura 2000 sites.
- It is not expected to reduce or fragment habitat types in Natura 2000 areas or affect representativeness or conservation status.
- It is not expected to reduce species population sizes or affect habitat conservation status, fragment habitats, disrupt species balance, or affect isolation levels.

Based on a comprehensive evaluation and summary in both EIS and SEA, the WF at the "OXEILA" site (upon the full implementation of mitigation measures):

- is not expected to impede or disrupt progress toward the conservation objectives of Natura 2000 sites.
- is not expected to reduce or fragment habitat types of Natura 2000 sites or affect their representativeness or conservation status.
- is not expected to reduce species population sizes, affect the conservation status of habitats, cause habitat fragmentation, disrupt the balance of species, or affect isolation levels."

1.3.5.4 Overall assessment of the operation of the Wind Farm

Therefore, the project's impacts are estimated to be of low-intensity negative (both direct and indirect), local, long-term, partially mitigable, and partially reversible.

1.3.6 Impacts on the Anthropogenic Environment

1.3.6.1 Spatial Planning – Land Uses

In the siting of a Wind Farm (WF), it is estimated that only 1% to 3% of its total area is occupied by wind turbines (tower bases), the majority of which are underground foundations. Excluding the area required for roads, the remaining area (up to 99% of the total) remains available for other uses (e.g., grazing/cultivation). Therefore, the installation and operation of the project under study are not anticipated to cause changes in the existing anthropogenic activities and

land uses of the wider area, which in the study area are mainly agriculture and livestock farming. The historical isolation of the study area has resulted in its primary land uses and human activities remaining traditional (agriculture, livestock, and forestry), and consequently, no significant environmental problems or pressures have emerged.

1.3.6.2 Structure and Functions of the Anthropogenic Environment

The wind farm will be installed in an area where anthropogenic activities are limited and not intense. The nearest settlements are located at a notable distance of over 3 km (the boundary of the nearest settlement is 3,78 km away). The project generally meets the required distances for residential activities, as set by the National Spatial Planning and Sustainable Development Framework for Renewable Energy Sources.

In conclusion, the implementation of the project is not expected to cause any changes to the residential environment of the study area. Therefore, the project's impacts are estimated as:

- Construction phase: Negligible negative, direct and indirect, short-term, reversible, and partially mitigable.
- Operation phase: Negligible negative, direct and indirect, long-term, partially reversible, and partially mitigable.

1.3.6.3 Cultural Heritage

There are no declared archaeological sites in the immediate study area; therefore, no impacts on historical monuments or other sites of historical and cultural interest are expected from the construction and operation of the WF project.

1.3.6.4 Socio-Economic Impacts

The socio-economic impacts from the construction and operation of the project are mainly positive and concern the broader area where the project is installed.

1.3.6.5 Impacts on Technical Infrastructure

During the construction and operational phases of the project, the technical infrastructure of the surrounding area will not be affected. During the construction phase, there will be temporary, localized disruptions to road traffic due to the movement of vehicles and machinery towards the construction site and from the transportation of the wind turbines and other necessary equipment. Some road sections of the project intersect with an underground natural gas pipeline. Given the nature of the proposed works (road works) and the fact that the pipeline is underground, no impacts on it are expected during construction or operation. In any case, any restrictions imposed by the pipeline operator (DESFA S.A.) at these points will be considered during construction. All necessary safety measures (e.g., construction site signage, safety measures proposals from DESFA S.A.) will be taken to ensure overall safety. Consequently, these impacts during the construction phase are expected to be minor, localized, and short-term negative. No negative impacts have been identified concerning water supply, irrigation, sewage, or telecommunications networks.

1.3.6.6 Impacts regarding anthropogenic pressures on the environment

Given that the wind farm under study includes fourteen (14) wind turbines, and despite general interest in the area for wind farm installations, the examined wind farm is expected to contribute in a limited manner to the density of wind farms in the broader area and consequently add to the existing anthropogenic pressures in the region. Therefore, the impacts of the project's construction on these pressures are assessed as minor negative, short-term, partially mitigable, and partially reversible. In contrast, the impacts of the project's operation on anthropogenic pressures are considered moderate negative, long-term, partially mitigable and partially reversible.

1.3.7 Impacts on air quality

The negative impacts of wind farms on the atmosphere are limited in scope and occur only during their construction phase. It is estimated that there will be an increase in gaseous pollutant emissions during the project's construction, which may cause locally elevated pollutant concentrations. However, this impact:

- It is typical and expected for projects of this type.
- Can be minimized through compliance with current Greek and EU legislation on emissions from machinery and construction vehicles, and by applying proper construction site practices and appropriate corrective measures during the construction phase.
- It is locally limited to the surrounding project area.
- It is temporary and will not cause significant irreversible degradation of the atmospheric environment in the immediate surrounding area.

Given the size and nature of the proposed project, its construction impacts on the atmospheric environment (due to the scale and extent of the affected surfaces) are estimated to be generally of moderate intensity, localized, partially mitigable with the proposed measures and fully reversible upon completion of the construction works. Additionally, the impacts during the operational phase of the project are expected to be slightly positive, direct and indirect, long-term and national in scope.

1.3.8 Noise impact

The expected impacts on the acoustic environment during the construction phase are anticipated to be weak negative, mainly concerning the immediate work area, partially reversible with the adoption of preventive corrective noise reduction measures recommended in chapter 10 of this study, temporary, and fully reversible after construction completion.

The expected impacts on the acoustic environment during the construction phase are anticipated to be of low intensity. These impacts primarily concern the immediate work area, are partially reversible through the adoption of preventive noise reduction measures

recommended in Chapter 10 of the EIS, they are temporary and will be fully reversible upon completion of the construction works.

During the operational phase, based on the calculated noise contour maps, no noise impacts are expected for the nearest settlements to the wind farm, since the estimated noise level will remain below 45dB(A), which is the limit for all residential activities defined by national legislation. Therefore, settlements in the broader area (both in Greek and Bulgarian territory) are not expected to experience any noise impact from the turbines of the examined wind farm. The same applies in the case of synergy with the adjacent wind farm ("OXEILA – LYKOTOPOS"), which is currently in the production license stage, should it be ultimately implemented and operate simultaneously. Consequently, settlements in the broader area are not expected to have any noise impact.

Noise impacts during the operational phase are assessed as neutral.

1.3.9 Impacts related to electromagnetic fields

No electric or magnetic fields are expected during the construction phase of the project. During the operational phase, any radiation emitted from the Medium Voltage (MV) Transmission Lines is negligible and non-ionizing. Since the MV network is underground, electromagnetic radiation is effectively eliminated. Overall, no impacts are anticipated.

1.3.10 Impacts on surface water and groundwater

A wind farm rarely causes disturbances to the hydrological conditions of the broader installation area. No impacts are expected on water flow paths, absorption rates, drainage routes, or soil washout rates, provided that the proposed measures in this study and the environmental permit are followed.

Any potential negative impact is limited to possible small leaks of liquid waste from the on-site construction areas. These are minimized through proper prevention and response practices and the correct use of machinery. No additional water withdrawal or increased consumption of water resources beyond the usual water needs is anticipated. The water needs for construction are estimated at about 4.300 cubic meters over roughly 8 months. These quantities will be sourced from appropriately licensed water abstraction points and transported by tank trucks holding the necessary permits. Therefore, no significant impacts on the quantity of water resources in the study area are expected during construction.

Consequently, potential impacts on surface and groundwater are expected to be minor negative, local, partially mitigable and fully reversible after construction works.

The quality or quantity of surface and groundwater in the broader area will not be affected during the operational phase. Wind farms do not produce liquid waste from production processes nor pose risks of thermal pollution to neighboring surface or groundwater bodies, as no cooling water is used. All wind turbines and transformer circuits are closed and shut down immediately in the event of failure, preventing oil leaks. No new substations are planned

specifically for this wind farm; instead, an already licensed substation used with another renewable energy project will be used. Moreover, the only liquid waste generated during operation consists of lubricants from maintenance and domestic sewage from operational staff. As these wastes are managed in accordance with applicable legislation, no impacts on surface or groundwater are expected.

1.3.11 Vulnerability to serious accidents or disaster risks

The installation of wind turbines is not associated with the emission of chemicals or radiation. Since turbine operation does not require flammable or explosive materials, there is no risk of explosion or combustion. Additionally, turbines operate at ambient temperature, eliminating any risk of accidents from contact with hot surfaces.

The likelihood of accidents or extreme natural events is considered low, while the project manager will be prepared for emergency response. Compliance with legislation during both construction and operation is a prerequisite, rendering accident risk negligible. The project's vulnerability to natural disasters or serious accidents during the construction phase is considered moderate, primarily due to the potential for forest fires caused by external factors rather than construction activities.

Both during the construction and operational phases, if legislation and equipment manufacturer specifications are followed and given the project's location, the probability of serious accidents or disasters is considered moderate, primarily due to the risk of fires from external factors. Based on this, along with technological advances and safety measures, the impacts are expected to be immediate, moderate negative, local, temporary and partially reversible.

1.4 Cross Border impacts

Regarding the cross-border impacts, both the EIS and SEA conclude that no significant negative impacts are expected at a transboundary level, whether for environmental impacts in general or vulnerability to climate change or accident risks. Any anticipated impacts are mainly localized and confined to the project installation area within the Greek territory.

1.4.2 Impacts related to climate resilience

During both the construction and operational phases of the project, no impact is expected on any climatic parameters, such as temperature, rainfall, hail, snowfall, or humidity, within the broader project development area. Consequently, there will be no cross-border impacts. By their very nature, wind farms and their associated works do not have any negative impact on the climatic and bioclimatic characteristics of the areas where they are installed. Therefore, it is evident that no cross-border impacts on the microclimate are expected.

As previously noted, the project's final carbon footprint is negative, contributing to climate change mitigation. With respect to greenhouse gas emissions, the project will not only produce

none, but by its very nature, is expected to reduce the production of such gases, as well as other harmful pollutants in the atmosphere in general, since it contributes to the reduction of atmospheric pollutant emissions from conventional energy production (fossil fuels).

Regarding adaptation to climate change, the analysis (in EIS) indicates that the project has a medium to high vulnerability level to the following sources of risk, for which a risk analysis is required:

- Forest fire
- Landslide
- Subsidence
- Change in wind characteristics

From the risk analysis, forest fire emerges as a highly significant inherent risk for the specific wind farm project. Consequently, specific measures are required to address this risk. It is noted that while the consequences of a landslide or subsidence may be catastrophic for the project, the likelihood of such phenomena is considered very small (rare).

The forest fire risk cannot be fully managed, as it extends to an area significantly wider than the project itself. Therefore, measures taken for the project cannot prevent the occurrence of a fire. At the project level, the proposed measures aim to prevent the spread of a forest fire to the project site, thereby limiting and mitigating the risk.

1.4.3 Impacts related to morphological and landscape characteristics

The impacts on relief and soil morphology from the project's construction and operation are limited to the Greek territory. These impacts mainly arise from soil excavations for turbine foundations, trenches for the medium voltage network, the construction site area, the construction of the Control Center (switchgear), and interventions for access to the turbine installation areas. These structural works are relatively simple and do not cause significant changes to the topography or the relief characteristics of the soil.

In cross-border character, the impacts on landscape characteristics are weak as the nearest settlements in the Bulgarian territory near the WF area are Lehovo (Лехово) at 5.07 km north-northwest of turbine 08 and Golesovo (Голесово) at 5.99 km northeast of turbine 14. From Golesovo no turbines will be visible while from Lehovo 13 turbines will be visible.

From a transboundary perspective, the impacts on the landscape are considered minimal, as the nearest settlements in Bulgarian territory are located at significant distances from the WF area. Specifically, these are Lehovo (Лехово) 5,07 km to the north-northwest of Wind Turbine (WT) 08 and Golesovo (Голесово) 5,99 km to the northeast of WT 14. No WT will be visible from Golesovo, whereas 13 turbines will be visible from Lehovo.

Any visual impact is very small due to the apparent size of the WT at these distances. Additionally, no shadow flicker is created. The turbines (tower and rotor) will have a low-

reflectance finish and therefore will not cause light reflection. Based on these factors and an on-site assessment from various viewpoints, it is concluded that the examined WF project is not expected to constitute a significant visual intrusion on the characteristics and physiognomy of the immediate or broader area. Consequently, any transboundary impacts are considered negligible.

1.4.4 Impacts related to geological, tectonic and soil characteristics

Impacts related to the geological, tectonic and soil characteristics of the area are limited to the project's construction phase and occur exclusively within Greek territory. The impacts of these interventions on the soil are generally characterized as negative in nature, with varying magnitude (intensity) and duration. They are partially or fully mitigable and local in geographic extent, meaning they are confined to the Greek territory, without causing changes to the geological and tectonic characteristics of the broader study area and by extension at a transboundary level.

According to the above, no cross-border negative impacts are expected from the construction and operation of the project related to geological, tectonic and soil characteristics.

1.4.5 Impacts on the natural environment

Regarding the cross-border impacts of the project on the natural environment, it should be noted that within Bulgarian territory and along the borders with Greece, the following Special Area of Conservation (SACs) of the Natura 2000 network are located: BG0002078 "Slavyanka", BG0002072 "Melnishki piramidi", BG0002098 "Rupite" and in the appropriate impact assessment (AIA) accompanying this, extensive reference is made concerning birdlife/avian fauna. It is also noted again that the main project under study is partially located within the protected Natura 2000 area named "Orvilos Mountain Peaks" (code GR1260005), which is a Special Area of Conservation (SAC) located in the northern part of Serres Prefecture.

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The Special Ecological Assessment (SEA) was conducted based on a comprehensive review of literature and field observations from January to December 2024. This study included all necessary data collection and assessments to evaluate the project's potential impacts on the local protected area, the nearest SPAs, and the neighboring Bulgarian SAC "Sreden Pirin – Alibotush" (code BG0001028), in accordance with applicable legislation.

Provided that all mitigation measures described in both the EIS and the SEA are fully implemented, the proposed project is assessed as

- unlikely to cause delay or interruption in achieving conservation objectives of the relevant Natura 2000 areas.
- unlikely to reduce the extent or fragment habitats of the Natura 2000 areas or affect their representativeness and conservation status.
- unlikely to reduce the population size of species or affect the conservation status of their habitats or fragment or affect species balance or isolation.
- unlikely to cause changes in vital parameters (e.g. nutrient balance, soil degradation by erosion, dynamics of biotic and abiotic relations) that define the functioning of the respective Natura 2000 areas.
- unlikely to interact with predicted or expected natural changes in the Natura 2000 areas and the wider region.

The cumulative impacts of the project, in synergy with other related projects in the area, are considered insignificant, provided that the appropriate mitigation measures are implemented. Therefore, no significant negative impacts on the natural environment are expected at a transboundary level. Any potential impacts on the natural environment, particularly on protected areas, are primarily confined to Greek territory and are limited to the construction phase.

1.4.6 Impacts on the anthropogenic environment

1.4.6.1 Spatial planning – land uses

During the planning phase of the wind farm project, it's calculated that the tower bases will occupy only 1% to 3% of the total area, with most of their foundations being underground. When also excluding the area required for roads, the remaining land (up to 99% of the total) remains available for other uses, such as grazing.

Therefore, the installation and operation of the project aren't expected to change existing land uses or human activities (like cultivation and free-range grazing) within the broader study area. As a result, no impacts are anticipated either locally or at a transboundary level.

1.4.6.2 Structure and functions of the anthropogenic environment

Impacts are localized and not transboundary, primarily affecting recreation. During the construction phase, a section of the hiking trail (Drepanoid – Kalis Fort) will be temporarily and partially affected.

1.4.6.3 Cultural heritage

There are no officially registered archaeological sites within the immediate study area. Consequently, no impacts on historic monuments or other cultural heritage sites are expected, either locally or across borders, from the project's construction and operation.

Specifically, in Bulgarian territory, the nearest archaeological sites are located more than 19 km to the north and west of the proposed wind farm project. These include the Medieval church "Saint Nicholas" in Melnik city and "Heraclea Sintica" between the "General Todorov" and "Rupite" settlements.

1.4.6.4 Socio-economic impacts

The socio-economic impacts from the project's construction and operation are predominantly positive and will benefit the broader project area. There are no transboundary impacts.

1.4.6.5 Impacts on Technical Infrastructure

During both the construction and operational phases, the technical infrastructure of the broader area will not be affected. There will be no impacts on infrastructure in Bulgaria, resulting in no transboundary impact.

More specifically, during the construction phase and exclusively within Greek territory, there will be a temporary and localized impact on road traffic due to the movement of construction vehicles and machinery towards the construction site, as well as from the transport of wind turbines and other necessary equipment.

There are no negative impacts expected on natural gas, oil, water supply, sewage, or telecommunications networks and relevant infrastructure. However, regarding the natural gas pipeline that passes between Greece and Bulgaria near Promachonas (Greek-Bulgarian border), it has been observed that certain sections of the proposed access road network intersect with it. Therefore, the consent of DESFA S.A. and adherence to its specific terms will be required for the wind farm's access road.

1.4.7 Impacts on air quality

Negative impacts on the atmosphere are limited in scope and occur only during a wind farm's construction phase. It's estimated that the project's construction will lead to a temporary increase in gaseous pollutant emissions, which may cause locally elevated pollutant concentrations. However, this impact:

- It is typical and expected for projects of this type.
- Can be minimized by adhering to relevant Greek and EU legislation on emissions from machinery and vehicles, as well as by applying proper construction site practices and corrective measures.
- It is localized to the immediate work area.
- It is temporary and won't cause significant irreversible degradation of the atmospheric environment.

Given the size and nature of the project, the impacts on the atmospheric environment during the construction phase are estimated to be moderately negative. These impacts will be localized and partially mitigable with appropriate measures, and they are considered immediately reversible upon the completion of construction works.

In contrast, the impacts on the atmospheric environment during the operational phase are estimated to be moderately positive and long-term.

In conclusion, taking these factors into account, no significant negative impacts are expected locally, and certainly none at a transboundary level. The long-term impacts on air quality are considered positive.

1.4.8 Noise Impact

Impacts on the acoustic environment during the construction phase are expected to be mildly negative. These impacts are primarily localized to the immediate work area within Greek territory. They are temporary and fully reversible upon the completion of the construction work. They are also partially reversible through the implementation of the proposed (in EIS) noise mitigation measures.

Based on the noise contour maps prepared for the EIS, no noise impacts are anticipated for the nearest settlements to the wind farm. The estimated noise level for the settlement of Lehovo (5,07 km northwest of WT08) and Golešovo (5,99 km northeast of WT14) in Bulgaria, as well as Agistro (3,78 km from WT01) in Greece, anticipated to be below 40 dB(A). This is well below the 45 dB(A) limit for all residential activities as defined by national legislation.

Consequently, settlements in the broader area, including those at a transboundary level, are not expected to experience any noise impact from the wind turbines.

1.4.9 Impacts related to electromagnetic fields

There will be no electric or magnetic fields (EMFs) during the project's construction phase.

During the operational phase, the electromagnetic radiation emitted from the Medium and High Voltage Transmission Lines and the "Spileo" Substation will be negligible and non-ionizing. Consequently, no negative impacts are expected at a local or transboundary level.

1.4.10 Impacts on surface water and groundwater

There will be no transboundary impact on water resources. This is because the main wind farm project is not being constructed within or near any water courses. Given the project's location on a ridge, there is no formed hydrological network in the project area.

Any potential negative impacts are limited to small, possible leaks of liquid waste from the on-site construction area. However, using proper prevention and response practices and the correct use of machinery, the chances of these leaks occurring are minimized or eliminated. In any case, these potential negative impacts are strictly localized and do not extend to a transboundary level.

1.4.11 Vulnerability to serious accidents or disaster risks

The installation of wind turbines does not involve the emission of chemicals or radiation. Since their operation doesn't require flammable or explosive substances, there's no risk of explosion or combustion.

Additionally, as turbines are purely electrical and operate at ambient temperature, they don't use combustible fuels, strong acids, or other corrosives. Also, there isn't any risk of accidents from contact with hot surfaces.

In conclusion, given the advanced technology of this type of project and the safety measures to be implemented during its construction and operation, the wind farm and associated works at the "OXEILA" site are not expected to pose any significant environmental risks.

Consequently, there is no risk of a serious accident or disaster that could lead to negative impacts, either locally or at a transboundary level.

1.4.12 Vulnerability to climate change

Based on the risk analysis noted in the EIS, the wind farm is considered vulnerable to climate change and additional adaptation measures must be implemented.

Specifically, for forest fire risk, the following measures are required:

- Firefighting system: Since the wind farm is going to be installed in a forested area, the installation of a firefighting system is a structural measure that significantly reduces risk.
- Perimeter protection: This is a non-structural measure that involves controlling tall vegetation and clearing dry vegetation from open ground around the perimeter of the area during fire season, which significantly reduces the risk of fire spreading.

Despite the low inherent risk of landslides and subsidence, the following safety measure is required for this project:

- Design of wind turbine foundations: The design of the foundations must account for the possibility of landslides to ensure the static stability of the installations. (Structural measure).

1.5 Measures, actions and initiatives for environmental protection

In order to minimize potential environmental impacts and ensure the project's long-term sustainability, a series of measures have been planned. These include the implementation of an Environmental Management System and a Monitoring Program to continuously track environmental parameters and promptly address any issues.

Specifically, to address the project's vulnerability to climate change, several adaptation measures have been planned. These include installing a fire suppression system and

establishing perimeter protection against forest fires, as well as the specialized design of wind turbine foundations to mitigate the risk of landslides and subsidence.

The company is committed to the strict implementation of all environmental terms and measures and to the continuous improvement of its environmental performance.

1.5.1 Environmental Management

To ensure the effective implementation of the proposed measures, it is recommended that the project operator implements an Environmental Management System (EMS) for the wind farm's operation.

The EMS should have at least the following objectives:

- Implement the project's Environmental Terms Approval Decision (Environmental Permit), including all preventive, corrective and compensatory measures outlined in this study.
- Prevent and/or control any environmental impacts caused by unforeseen events.
- Maintain compliance with all applicable legislation regarding the wind power plant's operation.
- Report key environmental performance indicators to the competent authorities through periodical annual reports.
- Adhere to the monitoring program proposed in this study.
- Ensure the smooth operation of the wind farm.
- Train personnel to raise their awareness of environmental issues.
- Guarantee effective environmental protection.

Following the issuance of the Environmental Terms Approval Decision and the imposition of specific terms and restrictions, it's recommended that the EMS include a Project Work Log for recording and management. This log will be a standardized form where all monitoring parameters, as defined in the Approval Decision, will be recorded.

Furthermore, a person responsible for environmental compliance must be appointed. All actions related to the company's compliance with environmental terms and legislation must be kept in a dedicated file and made available at any time for audit by the relevant licensing authorities.

A more detailed reference is made in chapter 11 of the EIS. To ensure the proper design and effective implementation of the EMS, international standards and procedures may be used (e.g., ISO 14001 and 14004).

1.5.2 Monitoring Program

In the following paragraphs, the proposed monitoring parameters are analyzed for each of the environmental aspects covered by the environmental management program.

TARGET – INDICATOR: Flora

PROPOSED MONITORING ACTIONS:

Adhere to the terms of the Environmental Terms Approval Decision and the instructions of the competent forestry department and also obtain all necessary permits.

Flora Monitoring: Record changes in vegetation over time in the immediate vicinity of the wind farm, with special emphasis on the rocky slopes south of the ridge. While changes are not necessarily a direct result of the project's operation, monitoring is crucial for the environmental management of the areas of influence. This allows for the recording of activities that may cumulatively affect existing vegetation and the recovery of plant communities.

In addition, the on-site operating staff should perform routine monthly inspections and cleaning of the project site, including a 100-meter zone around the wind turbines and maintain an environmental inspection record.

TARGET – INDICATOR: Birdlife – fauna

PROPOSED MONITORING ACTIONS:

The actions for monitoring this indicator are detailed in the proposed Monitoring Program for birdlife (Chapter 9 of the Special Ecological Assessment – SEA) and if required for bats also. A more detailed analysis is also included in the proposed mitigation and impact management measures in the Appropriate Impact Evaluation Study (Chapter 8 of the SEA).

The monitoring program will investigate the impacts of the wind farm's construction and operation on birdlife, with a focus on collision impacts and disturbance/displacement, particularly for critical bird species and if required, bats also. The monitoring aims to record any potential changes in density, seasonal abundance, rates and spatial patterns of passage and any other aspect of bird behavior that may be related to the wind farm's operation. This data will provide a periodic feedback loop for the project's impact mitigation program.

During the operation of the wind farm, monitoring and impact recording should be assigned to on-site specialized personnel. These individuals, who should be relevant scientists, will serve as a source of continuous observation and information, with the following key responsibilities:

- Verifying the accuracy of the EIS and SEA predictions.
- Assessing the effectiveness of the proposed mitigation measures.
- Monitoring impacts during both construction and operational phases.
- Identifying any changes in the use of the study area by important bird species due to random or unpredictable factors (e.g., a forest fire creating new open areas).

In parallel with bird monitoring, an appropriate program for bats should be implemented if required, as indicated by the analyses in EIS and SEA. This program would be limited to the period when bats are active.

Specifically, if a significant number of bat fatalities is detected, additional monitoring is proposed. This would involve deploying bat activity recorders for at least 10 consecutive 24-hour periods per month within the turbines' influence zone. The data collected will allow for the immediate and accurate determination of the timing for any necessary seasonal mitigation measures.

The fieldwork proposed under the monitoring program should span at least four years, covering the pre-construction, construction and the first two years of operation of the wind farm. The program should include:

- Regular surveys (every 15 days during critical periods and every 20 days during other periods) to assess collision risk and detect nests in the area.
- Data recording on the use of the project area, including the flight behavior of important species and their interaction with the turbines and mapping the data for a comprehensive status assessment.
- Monitoring and recording of any mortality in a dedicated protocol to be maintained by the company and made available to competent authorities for controlling collision incidents.
- Training for wind farm workers on the proper handling of injured birds and the immediate notification of competent authorities.
- Training for workers on scanning wind turbine areas for bird fatalities and ensuring compliance with the established procedure through regular inspections.
- Annual evaluation of mitigation measures: The permanent monitoring program includes on-site mortality checks beginning before wind turbine installation. The data collected will be used to assess the effectiveness of the mitigation system.
- Ornithological Surveys: The surveys will involve searching for injured or dead animals (birds and bats) or their remains within at least a 300-meter radius of each wind turbine. To account for potential scavenging, the best time to conduct research is in the early morning. Using trained detection dogs is also recommended for an effective search program. All findings will be documented in a dedicated protocol.
- System Data Analysis: The permanent monitoring program will also include the analysis of data from the Collision Avoidance System (CAS) and the Automated Turbine Shutdown system.

TARGET – INDICATOR: Water resources – soil

PROPOSED MONITORING ACTIONS:

To safeguard the aquifer's condition, a clear hazardous waste management plan is proposed in accordance with current legislation. This plan will adhere to all prescribed methods for the collection, storage and disposal of lubricating oils, packaging, batteries and other hazardous

waste, while maintaining all relevant records. Consequently, no additional monitoring actions are required.

To prevent changes in surface water runoff, regular visual inspections of all civil engineering works by operating staff are recommended to detect any changes or failures. This monitoring will be conducted during the construction phase, including road upgrades for equipment transportation, with particular attention to any road crossings of local streams.

TARGET – INDICATOR: Landscape

PROPOSED MONITORING ACTIONS:

The project's design, siting and construction ensure the seamless integration of the wind turbines into the landscape. Consequently, no additional monitoring is proposed, except for the systematic maintenance of metal parts to prevent corrosion. These tasks will be included in the operational work log, with detailed record keeping by the on-site personnel.

TARGET – INDICATOR: Acoustic environment

PROPOSED MONITORING ACTIONS:

The use of modern, certified wind turbine models ensures the acoustic protection of the environment through their design and siting. Consequently, no further monitoring actions are proposed, apart from managing construction and maintenance work to ensure subcontractors use machinery that complies with EU noise certification standards.

1.6 The benefits from the implementation of the project

Following the above, from the construction and operation of the project under study, the expected benefits both at local/regional and national level are summarized below.

The project is expected to have significant positive impacts on the local area.

Job opportunities will be created, primarily during the construction phase. The project will also stimulate the local economy by attracting capital inflow for its implementation and strengthening the local market, as it will require various material supplies and accommodations for specialized personnel.

Furthermore, new infrastructure (e.g., access roads) will be built, and local communities will receive compensatory measures, such as grants.

Finally, in accordance with national legislation, revenue from the project's operation will be returned to the relevant Local Government Authority (Municipality) and consumers through a reciprocal fee.

On a national level, the project is expected to provide several benefits such as:

- The project will help balance the national energy supply and demand, which strengthens the internal energy market.

- It will contribute to Greece's commitments to increase the use of Renewable Energy Sources (RES) within its energy system.
- By utilizing domestic resources, the project helps ensure energy supply and reduces the country's reliance on imported fuels.
- Smoother Electricity Market: The project will facilitate a more stable electricity market, directly benefiting consumers.

The proposed project is more than a simple economic activity. It's a significant contribution to tackling climate change and the transition to a low-carbon economy for a sustainable future.

Indicatively, the project will contribute to the reduction of greenhouse gas emissions and other atmospheric pollutants through the production of clean wind energy. This will improve the country's energy balance, strengthen its energy independence and help it achieve national targets for Renewable Energy Sources (RES) in line with European and international commitments, all of which promote sustainable development and green economy.

The above description (from 1.1 to 1.6) incorporates information on greenhouse gas (GHG) emissions, vulnerability and adaptation to climate change and the project's vulnerability to risks of other serious accidents or disasters.

1.7 Sustainable alternative solutions

Within the framework of the project siting, various alternative solutions were examined and are presented below.

Alternative locations:

In addition to the proposed site, three other locations were examined for the wind project's installation:

- Scenario 1: Approximately 700 meters north of the proposed location at the VOURKOS / MESOKORFI site.
- Scenario 2: Approximately 700 meters east of the proposed location at the PETROTO site.
- Scenario 3: At approximately 2,8 kilometers east of the proposed location at the PSORIARIKO / AKORFON site.

The proposed location at "OXEILA" is the optimal choice, as it combines high wind potential with lower environmental and technical challenges. In contrast, the alternative scenarios pose significant disadvantages compared to the selected solution.

A summary comparison table of the scenarios follows below (Complete documentation on the alternative scenarios is provided in subchapter 7.2.3.1 of the EIS).

Table 4: Comparison of alternative siting

Criterion	OXEILA Location	Scenario 1	Scenario 2	Scenario 3
Wind potential	++++	+	++	+
Interconnection	Acceptable	Limited	Limited	Hard
Access	Easy	Medium	Hard	Hard
Internal road network	Easy	Hard	Very hard	Very hard
Works in forested area	Important	Very high	High	Moderate

Alternatives in terms of size and scale

An alternative scenario involving the installation of 20 smaller wind turbines (2,94MW each) at different positions was examined. Although this alternative was located within the same general topographic area, its implementation would have required more access road openings and the creation of a greater number of wind turbine installation sites.

Essentially, while the overall project area would have remained unchanged, this scenario would have led to a larger land footprint due to the increased number of turbines and associated infrastructure. Consequently, this alternative was rejected in favor of the current proposal, as it achieves a better balance by reducing both the number of turbines and the overall occupied area.

Alternatives in terms of design

Three alternative solutions were examined regarding access to the project site.

Scenario 1: This route would have begun at the commercial port of "Kavala" via the national road to "Sidirokastro", would've continued along the provincial road to "Achladochori" and then via the rural/forest road to the new wf road network (Branch 4).

This proposed route was rejected due to the requirement for a new road alignment and significant upgrades to the rural/forest road to accommodate wind turbine transport vehicles.

Scenario 2: The route would have begun via the national road from the commercial port of "Kavala" to "Sidirokastro", would've continued along the provincial road "Sidirokastro–Achladochori" for 17km, and then via a forest road to the new road network (Branch 4) of the wf. This option appears more feasible compared to Scenario 1, as the need for new road alignment is avoided. However:

- The forest road is the weakest section and requires extensive construction works to become suitable.
- The cost of improving the forest road could be high due to the requirements for widening, slope stabilization and geometric adjustments.

While technically feasible, Scenario 2 would require a detailed cost-benefit study to investigate its economic viability and additional environmental impacts.

Scenario 3: The route would have begun, via the national road, from the commercial port of "Kavala" to "Promachonas", would've continued along the provincial road "Promachonas–Agistro" for 9,47km and then via the rural/forest road "Agistro–Achladochori" to the new road network (Branch 4) of the wf for 8,69km. Despite being a longer approach, this route also presents specific technical and environmental challenges, particularly along the Agistro – wf rural/forest road.

Alternatives in terms of electrical interconnection

An alternative interconnection scenario was examined, which foresaw the construction of:

- a new high-voltage substation 33/150kV in a forest area of 4 acres, south and at a short distance from the proposed control center,
- an underground medium-voltage line, along the existing road network, 488 meters in length from the wf substation to the above new substation,
- a new high-voltage line 150kV of length 18,18km from the new substation to the existing substation "Sidirokastro".

The selected interconnection proposal responds better to the needs of the project as it:

- minimizes environmental impacts,
- requires less land (avoiding the construction of an additional substation),
- is technically and economically simpler, more cost-effective and faster to implement.

This alternative was rejected in favor of the selected interconnection proposal, which better meets the project's needs. The selected proposal minimizes environmental impacts, requires less land by avoiding the construction of an additional substation and is both technically and economically simpler, making it a more cost-effective and faster solution to implement.

Alternatives in terms of technology

The area, due to its wind potential, is only suitable for the development of a wf.

Alternatives in terms of the production process

No alternatives were examined regarding the "production process" since the project concerns the primary exploitation of the wind potential of the area and the generation of clean energy.

Alternatives in terms of construction process

The wind turbines consist of prefabricated sections that are assembled on-site according to the manufacturer's instructions and in a specific sequence as described in detail in Chapter 6 of the EIS. The assembly process is the only technically appropriate method and does not allow any variations.

Similarly, the associated infrastructure, such as installation platforms and roadworks, adheres to specific standards to ensure both the safe transport of the components and the necessary

assembly space. The medium-voltage networks and the substation are also designed in strict accordance with ADMIE's standards.

1.8 Summary of the conclusions of the Special Ecologic Assessment (SEA)

Throughout the SEA, following a literature review and field observations for the period January 2024 - December 2024, all necessary records and assessments were carried out in order to make a specific ecological assessment of the project under study in relation to the protected area in question (as well as to the nearby Special Protection Areas and the neighbouring Bulgarian Special Conservation Area), based on the standards set by the legislation. Based on these and subject to the condition of implementing all the mitigation measures for potential impacts identified in the Special Ecological Assessment, it is assessed that the proposed project:

- It is not likely to cause a delay or interrupt the progress in achieving the conservation objectives of the relevant Natura 2000 sites.
- It is not likely to reduce the extent or fragment the habitat types of the Natura 2000 network sites or affect the representativeness and degree of conservation of their structure and functions.
- It is not likely to reduce the population size of species or affect the degree of conservation of their habitats or fragment them or affect the balance between species or affect their degree of isolation.
- It is not likely to cause changes to vital parameters (e.g. nutrient balance, soil degradation from potential erosion, dynamics of relationships between biotic and abiotic parameters) that determine how the Natura 2000 sites concerned function.
- It is unlikely to interact with predicted or expected natural changes to the Natura 2000 network sites concerned and the wider area.

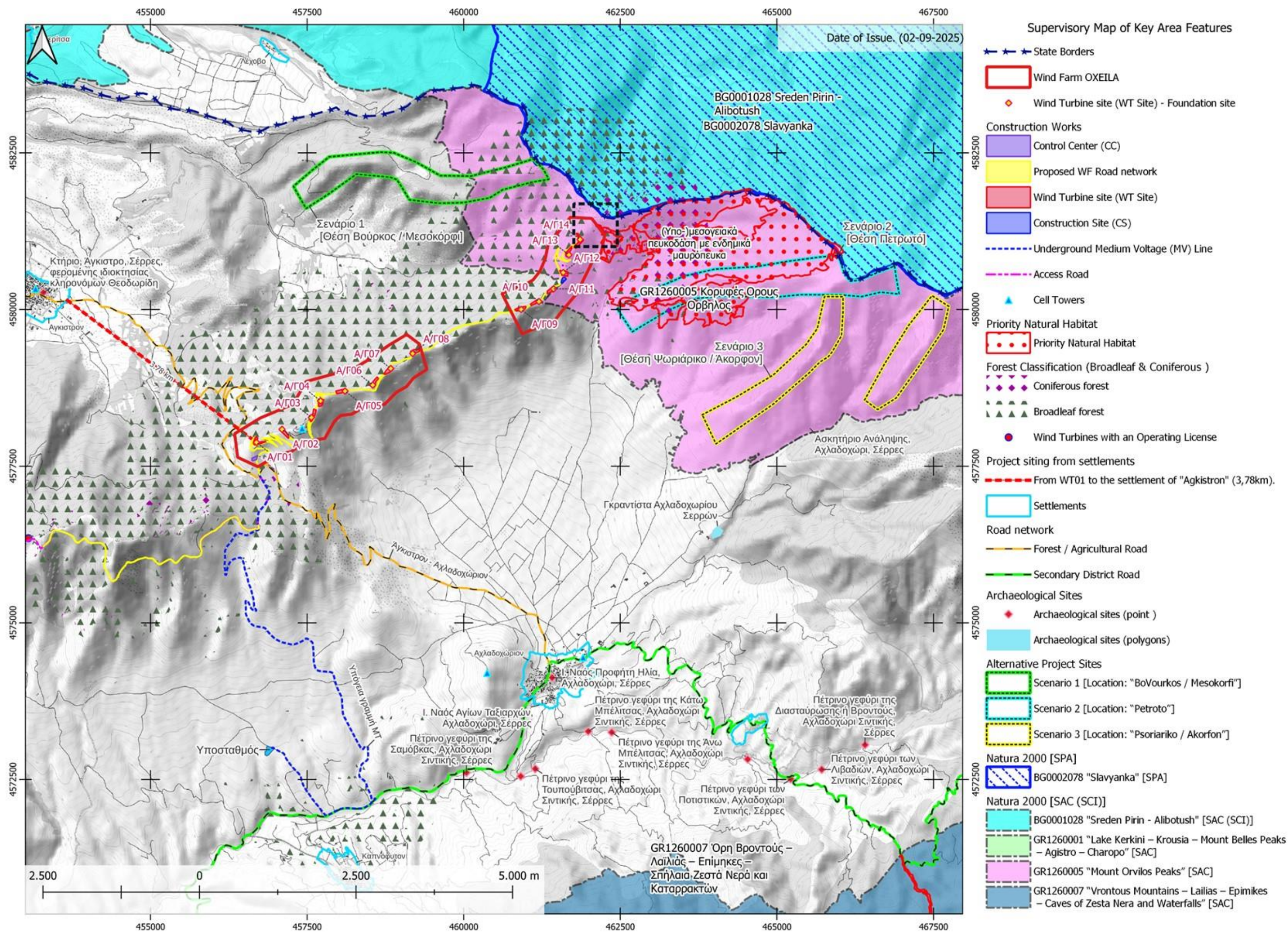
The associated works of this wind farm are not considered to have an adverse impact on the site and its integrity, nor on the species living therein, due to the proposed undergrounding of the cabling for the transmission of the electricity generated, but also due to the care taken to ensure that the sections of the new road are properly laid out, and the proposed mitigation measures mentioned above.

The additive impact of the project synergistically with other related projects in the area is considered to be less than significant given that appropriate mitigation measures will be implemented to address the potential impacts identified in the Special Ecological Assessment.

1.9 Overview Map of the Main Features of the Area

The following map is an overview, highlighting the main features of the area.

Map 1: Supervisory Map of Key Area Features (Wind Farm location)



Map 2: Supervisory Map of Key Area Features (Access Road – proposed road works).

