

SYNOPSIS OF THE ENVIRONMENTAL IMPACT ASSESSMENT STUDY FOR THE PROJECT: "CONSTRUCTION AND OPERATION OF THE 58.5 MW WIND POWER PLANT (WP) "PLAISIO" AT THE LOCATION " POULIA - KOTSION - FARMAKOVOUNI " AND ITS SIDE WORKS LOCATED IN THE MUNICIPALITY UNITS OF FILIATON & SAYADAS OF THE MUNICIPALITY OF FILIATON, REGIONAL UNIT OF THESPROTIA, REGION OF EPIRUS"

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1 INTRODUCTION

The present environmental impact assessment study concerns **the construction and operation of the Wind Power Plant (WP) with the distinctive name "PLAISIO" with a total capacity of 58.5MW at the location "Poulia - Kotsion - Farmakovouni "** and its accompanying works, in the Municipality Units Filiaton and Sayada of the Municipality of Filiaton of the Regional Unit of Thesprotia of the Region of Epirus, according to the provisions of article no. 2 of Law 4014/2011, as it is amended and in force.

1.1 Title of the Project

CONSTRUCTION AND OPERATION OF A WIND POWER PLANT (WP) WITH THE DISTINCTIVE NAME "PLASIO" POWER 58.5MW AT THE LOCATION "POULIA-KOTSION-FARMAKOVOUNI" AND OF THE ACCOMPANYING WORKS IN THE MUNICIPALITY UNITS FILIATON AND SAYADAS OF THE MUNICIPALITY OF FILIATON, R.U. of THESPROTIAS.

1.2 Type and size of the Project

The proposed project, the environmental effects of which are studied in this study, concerns the installation and operation of a Wind Power Generation Plant (WP) and its accompanying projects, in M.Uns. Filiaton and Sayada of the Municipality of Filiaton of R.U. of Thesprotia, Epirus Region.

The project is proposed to be established in areas that, according to the reformed forest map of the P.E. Thesprotia, are mostly forested areas. In summary, the studied project will include the following infrastructures:

Main project:

- Wind Farm installation, consisting of thirteen (13) Vestas V150 W/Ts, with a power of 4.5MW each i.e. a total power of 58.5MW.
- Configuration of building platforms with a total area of 81,364.6 m²
- Construction of Pillar foundations with a diameter of 21 m and a depth of 3 m .
- Construction of an internal medium voltage underground network, earthing and optical fiber control cables, for the transmission of the generated electricity which will end from WTs to the wind plant control rooms, with a total length of 9.85km.
- Construction of two control buildings with an area surface of approximately 200 m², within plots with an area surface of 4000 m² each.

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Accompanying Projects:

- Road construction for the access to the project installation site and the internal road connection of the W/Ts of WP with a total length of 10,895.87 m of which:
 - ✓ 3,003.77m is a new opening and
 - ✓ 7,892.10m is the improvement of existing roads
- Construction of technical rainwater drainage works (rainwater drainage channel and tubular drains of appropriate cross-section)
- Electrical interconnection Networks, which include:
 - ✓ the construction of underground Medium Voltage interconnection lines, which will start from the WP control rooms and will end and connect to the new Substation at the "Manjari " location. The total length of the underground interconnection medium voltage line will be equal to 29.88km.
- Configuration of five auxiliary construction sites, with a total surface area of 31,367.48m², one of which will host, among other things, an aggregate crusher and a temporary complex for the production of ready-mixed concrete.

Other technical support facilities & works:

- Individual technical projects of the main project, i.e. aggregate crusher, concrete preparation silo, use of explosives, sample drilling and research wells.

1.3 Geographical location and administrative affiliation of the Project or activity

1.3.1 Position

The installation site of the studied WP is located in a mountainous area north of the settlement "Plaisio" and south of the settlement "Mavronerion" of Municipality Unit Filiaton of the Municipality of Filiaton of Regional Unit of Thesprotia. The nearest settlements to the project under study and their distance from the nearest W/T thereof are listed below:

- "Kerasochori " settlement, which is located 1.2 km north-east of the installation site of the project's W/T6.
- The "Xechoro" settlement, which is located 1.3 km east of the location of the installation of W/T12 of the project.
- The "Kotsika" settlement, which is located 1.8 km south-west of the installation location of W/T1 of the project.
- "Mavroneri" settlement, which is located 1.8 km northwest of the location of the project's W/T7 installation.
- The "Potamia" settlement, which is located 1.9 km northeast of the location of the installation of W/T7 of the project.
- "Giromeri" settlement, which is located 2 km southwest of the project's W/T9 location.
- The "Plaisio" settlement, which is located 2.1 km southwest of the installation site of W/T3 of the project.

Below is an indicative image of the development area of the projects on scale 1:50,000
General Purpose Map:

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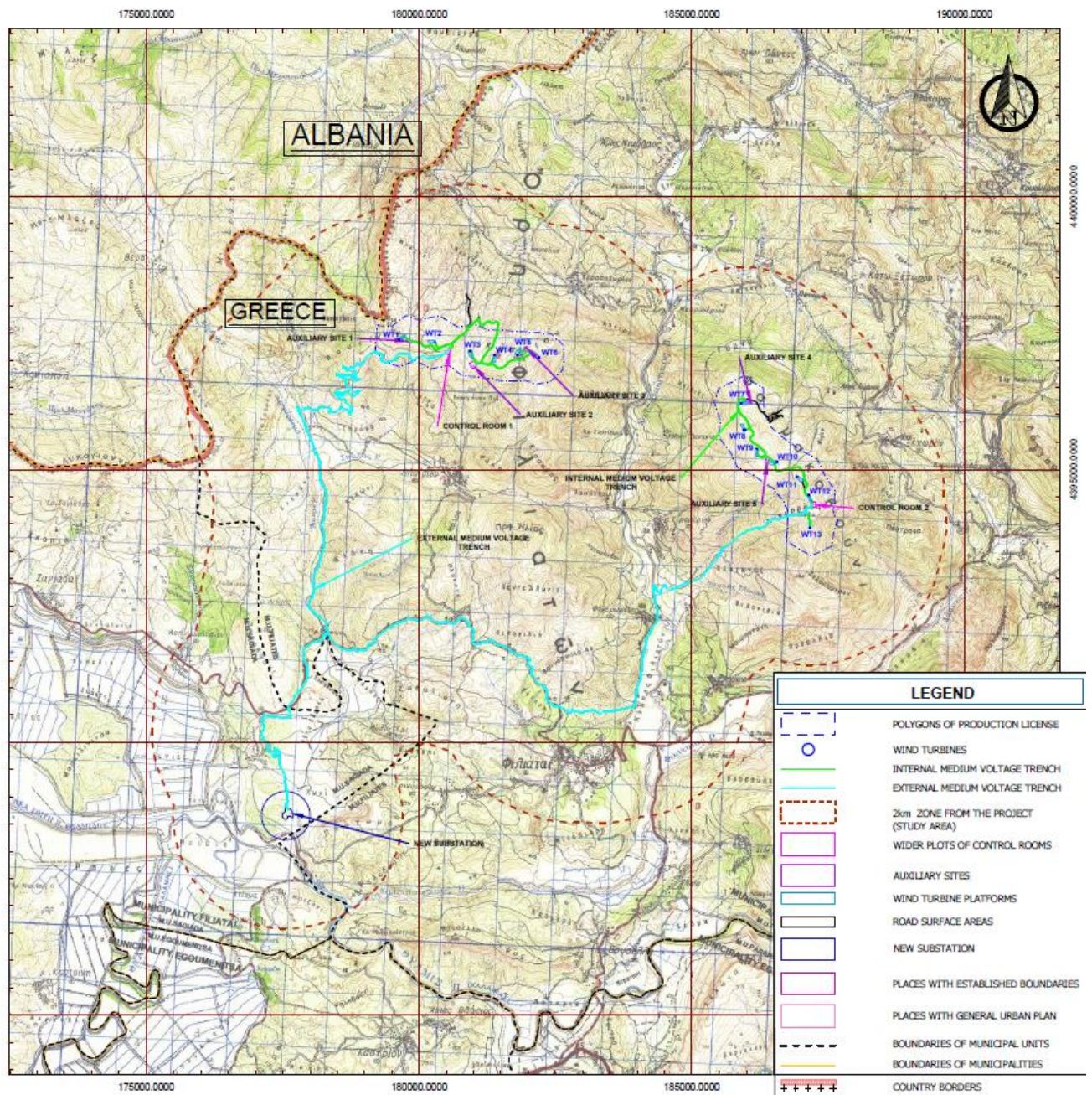


Figure 1-1: General Use map with the project "PLAISIO"

1.3.2 Location of the project

Administratively, the under analysis project is located as a whole:

- In the area of Palamba , Kerasochori , Plaisio, Giromeri , Xechoro , Faneromeni, Filiaton and Smerto settlements,
- In Municipal Units of Filiaton and Sayada,
- In the Municipality of Filiaton,

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- In the Regional Unit of Thesprotia,
- In the Region of Epirus

Regarding the inclusion of the project sites in specific areas of environmental or general interest:

1. in the natural environment of the area the following are highlighted:

The project under study falls within

- the Special Protection Zone (ZEP) GR2120009 and name "Mountains of Tsamanda, Filiaton, Farmakovuni and Megali Rachi",
- The Important Bird Area (IBA), with code GR073 and name "Mountains Tsamandas, Filiaton, Farmakovuni and Megali Rachi",
- Of the other biotope with code AB3090039 and name "Kalamas River".

The project under study located in the vicinity of

- The Landscape of Natural Beauty, with code AT3011028 and name "Charadra of the Kalpakiotiko stream in Finiki", which is located 1.1km southeast of W/T13 of the project.
- The Wildlife Refuge with code K830 named "Agios Pantos, Platanos, Kokkinolithariou, Agios Nikolaos, Kato Xechoros, Keramitsa, Kryonerio of the Municipality of Filiaton", which is located at a distance of 2.2km northeast from the location of W/T7

2. the following are highlighted in the spatial planning of the area:

- The project under study is located outside of institutionalized Local Spatial Plans (GPS or SHOOAP).
- The whole of the studied project is located outside of institutionalized Residential Control Zones (ZOE).

3. the following are marked in the residential network of the area:

- The whole of the main project and the majority of accompanying projects are located outside the boundaries of settlements.

4. the points of archaeological and cultural interest are marked as follows:

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- The whole of the studied project is located outside declared archaeological sites, zones of absolute protection of archaeological sites, historical monuments and historical places.

The following tables list the coordinates of the installation sites of the project under consideration as they are included in the Greek Regulatory Authority for Energy Wind Farm location certificate:

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Table 1-1: Coordinates of production license polygon A of under evaluation Wind Farm "Plaisio"

POINT	WGS 84	
	λ /LONG	ϕ /LAT
A'1	20.26210	39.66677
A'2	20.26230	39.67096
A3	20.26554	39.67104
A4	20.26841	39.67288
A5	20.27111	39.67217
A6	20.27544	39.67305
A7	20.27944	39.67128
A8	20.28293	39.67184
A9	20.28592	39.67107
A10	20.28993	39.67103
A11	20.29475	39.67092
A12	20.29948	39.67082
A13	20.30224	39.66889
A14	20.30222	39.66499
A15	20.29963	39.66290
A16	20.29687	39.66242
A17	20.29448	39.66293
A18	20.28941	39.66275
A19	20.28426	39.66320
A20	20.28087	39.66331
A21	20.27780	39.66495
A22	20.27430	39.66423
A23	20.27076	39.66544
A24	20.26730	39.66440
A25	20.26382	39.66515

Table 1-2: Coordinates of production permit polygon B of under evaluation Wind Farm "Plaisio"

POINT	WGS 84	
	λ /LONG	ϕ /LAT
B1	20.35007	39.64516
B 2	20.34813	39.64680
B3	20.34390	39.64882
B4	20.34034	39.65007
B5	20.33876	39.65241
B6	20.33606	39.65494
B7	20.33624	39.65775
B8	20.33479	39.66069

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POINT	WGS 84	
	λ /LONG	ϕ /LAT
B9	20.33568	39.66293
B10	20.34071	39.66509
B11	20.34509	39.66333
B12	20.34565	39.65913
B13	20.34719	39.65692
B14	20.34926	39.65557
B15	20.35373	39.65327
B16	20.35723	39.65196
B17	20.35864	39.64980
B18	20.36128	39.64693
B19	20.36127	39.64474
B20	20.36095	39.64368
B21	20.36211	39.64203
B22	20.36136	39.63981
B23	20.36104	39.63772
B24	20.35669	39.63599
B25	20.35132	39.63827
B26	20.35147	39.64110
B27	20.35139	39.64335

The following table presents the coordinates of the installation locations of the project's W/Ts as they are registered on the geoinformation map of the Greek Regulatory Authority for Energy:

Table 1-3: Coordinates of W/ T positions of the under evaluation Wind Farm "Plaisio"

a/a	Geographic coordinates (WGS 84)						Type W/T	Ground elevation (m)	Tower height (m)	Wing length (m)	Maximum rotating point height (m)
	λ			ϕ							
01	20	16	1.7	39	40	7.9	V150-4.5MW	929	155	75	1159
02	20	16	29.2	39	40	7.3	V150-4.5MW	935	155	75	1165
03	20	16	56.8	39	40	2.8	V150-4.5MW	975	155	75	1205
04	20	17	15.4	39	40	0.8	V150-4.5MW	975	155	75	1205
05	20	17	32.6	39	40	2.0	V150-4.5MW	1046	155	75	1276
06	20	17	49.4	39	40	0.8	V150-4.5MW	1054	155	75	1284
07	20	20	25.9	39	39	38.4	V150-4.5MW	958	155	75	1188
08	20	20	29.6	39	39	22.4	V150-4.5MW	1047	155	75	1277

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a/a	Geographic coordinates (WGS 84)						Type W/T	Ground elevation (m)	Tower height (m)	Wing length (m)	Maximum rotating point height (m)
	λ			φ							
09	20	20	39.8	39	39	11.6	V150-4.5MW	1096	155	75	1326
10	20	20	55.5	39	39	4.3	V150-4.5MW	1124	155	75	1354
11	20	21	11.1	39	38	56.2	V150-4.5MW	1174	155	75	1404
12	20	21	20.7	39	38	45.6	V150-4.5MW	1192	155	75	1422
13	20	21	23.0	39	38	26.3	V150-4.5MW	1202	155	75	1432

In the following table, the coordinates of indicative points of the route of the accompanying project of the Medium Voltage underground transmission line are listed, which throughout its route is located on the deck of new and existing road network:

Table 1-4: Indicative points of the route of the Medium Voltage underground interconnection line.

POINT	WGS84	
	φ	λ
1	20.27784	39.66736
2	20.27267	39.66613
3	20.26784	39.66649
4	20.26346	39.66557
5	20.25982	39.66503
6	20.25537	39.66409
7	20.25889	39.66196
8	20.25418	39.66266
9	20.25777	39.65999
10	20.25530	39.65970
11	20.25415	39.65923
12	20.25748	39.65645
13	20.25362	39.65647
14	20.24941	39.65662
15	20.24658	39.65603
16	20.24897	39.65198
17	20.25133	39.64798
18	20.25254	39.64367

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POINT	WGS84	
	Φ	λ
19	20.25275	39.63927
20	20.25295	39.63495
21	20.25177	39.63057
22	20.25100	39.62628
23	20.25246	39.62269
24	20.35674	39.64449
25	20.35256	39.64265
26	20.34725	39.64119
27	20.34227	39.63938
28	20.33784	39.63657
29	20.33467	39.63282
30	20.32991	39.63051
31	20.32544	39.62973
32	20.32359	39.62898
33	20.32469	39.62461
34	20.32239	39.62059
35	20.32166	39.61617
36	20.32073	39.61179
37	20.31722	39.60940
38	20.31184	39.60903
39	20.30682	39.60850
40	20.30193	39.61048
41	20.29904	39.61395
42	20.29753	39.61720
43	20.29240	39.61895
44	20.28702	39.61935
45	20.28467	39.62198
46	20.28064	39.62241
47	20.27536	39.62344
48	20.27021	39.62234
49	20.26534	39.61998
50	20.26169	39.61751
51	20.25662	39.61796
52	20.25286	39.61865
53	20.24955	39.61584
54	20.25005	39.61156
55	20.24692	39.60792

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POINT	WGS84	
	Φ	λ
56	20.24436	39.60587
57	20.24169	39.60380
58	20.24300	39.60014
59	20.24526	39.59963
60	20.24672	39.59543
61	20.24711	39.59119
62	20.24758	39.59072

The following table lists the coordinates of the points of the installation plots of the project control rooms:

Table 1-5: Coordinates of control building installation 1

POINT	WGS 84	
	λ /LONG	Φ /LAT
OE1	20.27724	39.66688
OE2	20.27764	39.66657
OE3	20.27824	39.66735
OE4	20.27796	39.66757

Table 1-6: Coordinates of control building installation 2

POINT	WGS 84	
	λ /LONG	Φ /LAT
OE1	20.35667	39.64477
OE2	20.35726	39.64480
OE3	20.35731	39.64408
OE4	20.35673	39.64406

To cover the construction needs of the project, five construction auxiliary sites will be set up. The facilities and works resulting from the technical planning of projects or activities at a stage following the issuance of the Environmental Terms Approval (ETA), such as construction sites, are approved by submitting and evaluating a Technical Environmental Study (TEPEM) to the authority responsible for environmental licensing.

Table 1.9: Ex1 construction site installation points

POINT	WGS 84	
	λ /LONG	ϕ /LAT
Q1	20.26900	39.66845
E2	20.27011	39.66843
E3	20.27013	39.66852
Q4	20.26959	39.66865

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POINT	WGS 84	
	λ /LONG	ϕ /LAT
Q5	20.26923	39.66875
Q6	20.26875	39.66892
Q7	20.26854	39.66891
Q8	20.26847	39.66870
Q9	20.26863	39.66854

Table 1.9: Ex2 construction site installation points

Point	WGS 84	
	λ /LONG	ϕ /LAT
E10	20.28232	39.66535
E11	20.28300	39.66449
E12	20.28392	39.66502
E13	20.28392	39.66519
E14	20.28352	39.66555
E15	20.28318	39.66583

Table 1.9: Ex3 construction site installation points

Point	WGS 84	
	λ /LONG	ϕ /LAT
E16	20.29346	39.66721
E17	20.29406	39.66742
E18	20.29476	39.66810
E19	20.29424	39.66833
E20	20.29362	39.66784
E21	20.29320	39.66749

Table 1.9: Ex4 construction site installation points

Point	WGS 84	
	λ /LONG	ϕ /LAT
E22	20.34122	39.66111
E23	20.34108	39.66090
E24	20.34168	39.66092
E25	20.34218	39.66091
E26	20.34218	39.66076
E27	20.34275	39.66068
E28	20.34289	39.66092
E29	20.34232	39.66108
E30	20.34208	39.66117
E31	20.34153	39.66119
E32	20.34131	39.66118

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Table 1.9: Ex5 construction site installation field points

Point	WGS 84	
	λ /LONG	ϕ /LAT
E33	20.34693	39.65190
E34	20.34684	39.65091
E35	20.34632	39.65096
E36	20.34640	39.65193

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Table 1-7: Points of new 150 kV /33 kV substation installation site

Points	WGS 84	
	λ /LONG	ϕ /LAT
Y1	20.24706	39.59110
Y2	20.24696	39.59030
Y3	20.24651	39.59008
Y4	20.24641	39.58955
Y5	20.24656	39.58931
Y6	20.24695	39.58905
Y7	20.24703	39.58902
Y8	20.24726	39.58902
Y9	20.24758	39.58927
Y10	20.24766	39.58932
Y11	20.24766	39.58956
Y12	20.24775	39.58960
Y13	20.24806	39.58955
Y14	20.24862	39.58933
Y15	20.24874	39.58944
Y16	20.24876	39.58974
Y17	20.24850	39.59021
Y18	20.24844	39.59036
Y19	20.24807	39.59083
Y20	20.24706	39.59110

1.3.3 Location of the project in relation to other countries

It shall be noted, that the entire project is located within the boundaries of the Greek National Area (Municipality of Filiatón, Thesprotia Prefecture, Ipeiros Region). In the context of assessment of possible Impacts in the surrounding area, the buffer zone of Study Area for the scope of EIA falls almost entirely within the boundaries of the Greek National Area, except from a small part which falls within the boundaries of neighboring Albania and more specifically within the administrative boundaries of the Municipality of Konispoli of the Prefecture of Avlona.

In this regard, the Municipality of Konispoli covers an area of 339.02km² and includes the administrative units of Konispoli, Markat and Tzaras. The population of the Municipality, according to the last census of 2011, amounts to 8,245 inhabitants.

The nearest settlements of Albania to the location of the project are:

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- The settlement "Janjar" which is located north of the producer A certification polygon and at a distance of 3.4km from the location of installation of W/T1 of the Wind farm "Plaisio" , and
- The settlement "Verve" which is located northwest of the project and at a distance of 4.5 km from the location of W/T1.

It is therefore considered appropriate to examine the possible proximity of the study area, but also the location of the studied projects to the protected areas of the national network of Albania, as well as the European network of Natura 2000 areas outside the national area.

As can be seen from the geospatial records available in the European repository database (<https://cdr.eionet.europa.eu/al/eea/cdda1/>) for the neighboring country, all of its protected areas are located at long distances, both from the study area and from the location of the Wind Farm under evaluation.

In particular, the closest to the location of the works areas of environmental importance in Albania are:

- The "Butrinti" national park, which is located northwest of the installation location of the main project and at a distance of 17km from the position of W/T1
- The "Bredhi i Sotires" nature monument, which is located northeast of the installation site of the main project and at a distance of 16km from the position of the W/T6.

In addition, it is found that at a distance of more than 160 km, no area of the Natura 2000 network of another country can be found. Below is an indicative image:

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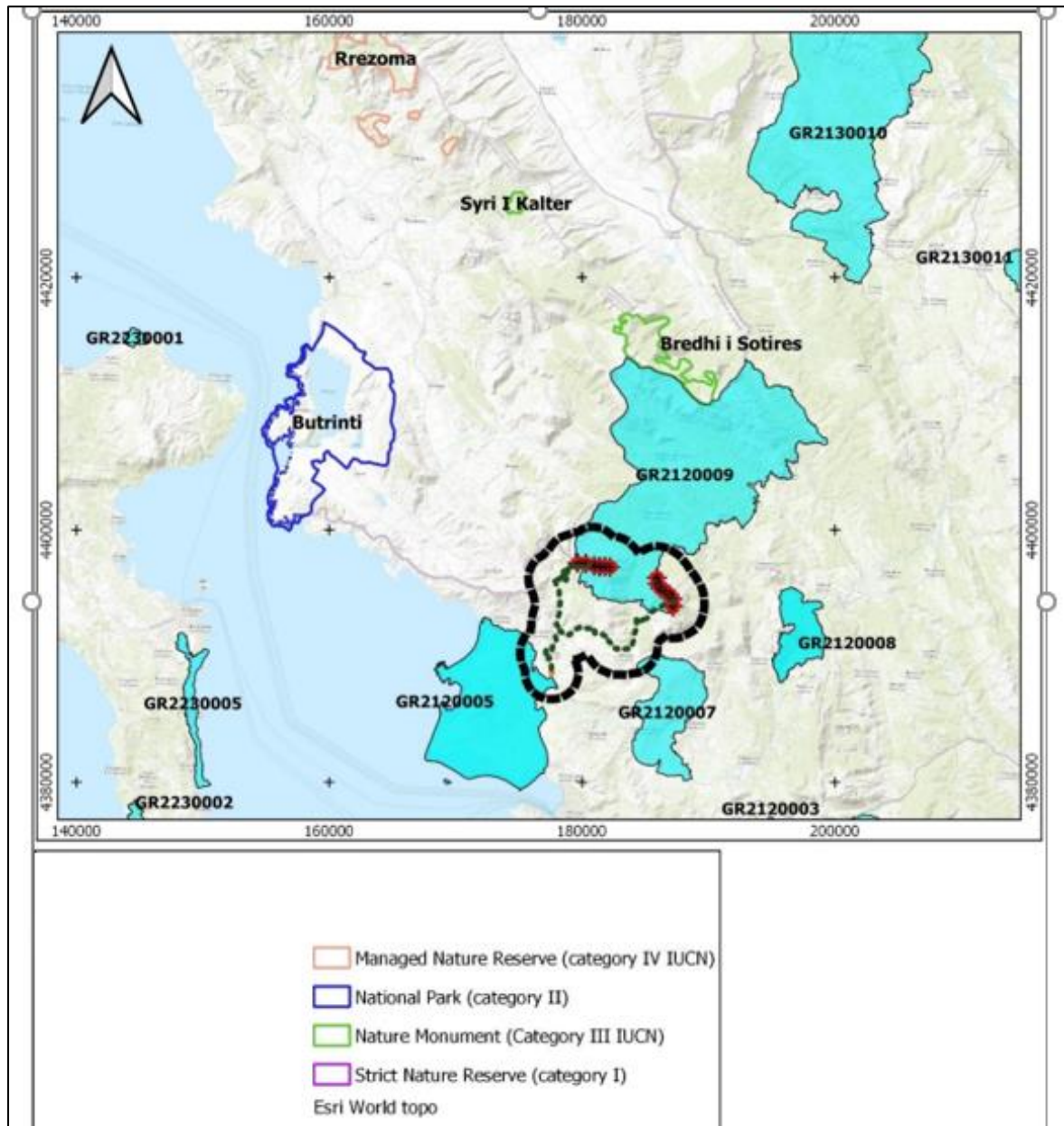


Figure 1-2: National network of protected areas of Albania and European network of Natura 2000 sites

1.4 Project status

Taking into account the categorization set forth by virtue of the **Ministerial Decision No YPEN/DIPA/17185/1069/2022** (Government Gazette 841/B/2022) titled "Amendment and codification of the ministerial decision under the DIPA/ok.37674/27-7-2016 "Amendment and codification of the ministerial decision 1958/2012 - Classification of public and private projects and activities into categories and subcategories in accordance with par. 4 of article 1 of Law 4014/21.9.2011 (A' 209), as amended and in force" (B' 2471) , as well as the Ministerial Decree YPEN/DIPA/64712/4464, (Government Gazette 3636/B/2022) - Amendment of the ministerial decision under documents YPEN/DIPA/17185/1069/2022 "Amendment and codification of the under documents DIPA/ok.37674/ 2016 ministerial decree "Amendment and codification of ministerial decree 1958/2012 - Classification of public and private projects and activities into categories and subcategories in accordance with par. 4 of article 1 of Law 4014/21.9.2011 (A' 209), such as has been amended and is valid" (B' 2471)" (B' 841) the proposed project is categorized as follows :

For the main project (WIND FARM):

- In the **10th group**: Renewable Energy Sources and Individual Energy Storage Stations
- With **serial number in tables 1.a**: Power generation from onshore wind energy
- **Category A and Subcategory A1**: Since the power of the project is $P=58.5 \text{ MW} > 45 \text{ MW}$.

For the accompanying road construction project:

- In the **1st group**: Land and air transport projects – Road construction projects
- With **serial number in tables 11**: Forest road
- **Category B**: Since all the forest roads are classified in category B.

For the accompanying Medium Voltage interconnection project:

- The accompanying project of the medium voltage underground transmission line. it is not classified environmentally in the tables of projects and activities pursuant to YPEN/DIPA/17185/1069/2022 of Ministerial Decision, as amended and valid, but they are an integral part and infrastructure of the main activity (WIND FARM).

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For the new Medium Voltage/High Voltage Substation which is an accompanying project:

- **In the 11th group:** Transport of energy, fuels & chemicals
- Numbered **in Tables 11:** Individual EHV substations and individual substations on the surface of the ground (including extensions to existing substations)
- **Category B:** Since $T=150$ kV so $50 \leq T \leq 150$ kV

With reference to the above, the project is **classified in the environmental category A and subcategory A1 and follows the procedure of drawing up and submitting an Environmental Impact Study** according to the provisions of M.D. 170225/2014 and M.D. 1915/2018 (Government Gazette 304/B/02-02-2018).

Finally, and according to the M.D. No. 3137/191/Φ.15/12 (B'1048) on the matching of electricity activities with the level of nuisance mentioned in the urban planning legislation, the studied Wind Park is classified among the activities of medium degree of nuisance ($P_{inst} > 700$ kW).

1.5 Project Owner

The Owner of the project under study is the company named "C. ROKAS SA", the details of which are listed below:

Address : 3 Rizareiou Street

Postal Code: P.C. 152 33, Chalandri, Athens, Greece

Tel : +302108774101

The contact person for the project is Mr. Gkizas Apostolos whose details are listed below:

Tel : +302108774179, +306976865939

email : agkizas@iberdrola.gr

1.6 Environmental Researcher of the project

The Environmental Impact Assessment Study of the project was carried out by the specialized company "ECOMIND E. KARAPIDAKIS & ASSOCIATES" whose representative is the Forester - Environmentalist Mr. Eleftherios Karapidakis whose contact details are listed below:

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Address : Raidestou 7

Postal Code: P.C. 12241, Egaleo, Athens

Tel : +302105900785

Fax : +302105900386

email : karapidakis@ecomind.gr

2 NON-TECHNICAL SUMMARY

The present environmental impact study concerns the construction and operation of the Wind Power Plant (WP) with the distinctive name "PLAISIO" with a total capacity of 58.5MW at the location "Poulia - Kotsion - Farmakovouni " and its accompanying projects, in Municipality Units of Filiaton and Sayada of the Municipality of Filiaton of Regional Unit Thesprotia of Epirus Region.

2.1 General information about the Wind Farm "Plaisio"

The under - assessment Wind Farm "Plaisio", within its accompanying projects, is located within the following areas:

- Local Settlements of Palamba, Kerasochori, Plaisio, Giromerio, Xechoro, Faneromeni, Filiaton and Smerto
- Municipality units Filiaton and Sayada
- Municipality of Filiaton
- Regional Unit of Thesprotia
- Region of Epirus

The Owner of the studied project is the company with the name "C. ROKAS SA", subsidiary of RES Spanish Pioneer IBERDROLA.

The purpose of the project is the production of electricity from Renewable Energy Sources (RES), in accordance with the provisions of Laws 3468/2006 and 3851/2010. The primary form of energy utilized in the project under study is Wind. The kinetic energy of the wind is converted through the blades of the A/C into mechanical energy in the low-speed main axis of the A/C. Afterwards, the mechanical energy is converted into electrical energy by means of an electrical generator.

Wind farms consist entirely of power generation units (wind turbines) that convert wind energy into electricity. The WTs of the project are thirteen (13), indicatively of type VESTAS V150, with nominal power 4.5MW each, i.e. the total power of the project is 58.5MW (13*4.5MW).

The present environment impact assessment study, as mentioned above, has as its object the evaluation of the environmental impacts resulting from the construction and operation of the

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studied Wind Power Plant (WP). The main project as well as the accompanying projects include the following:

Main project:

- Wind Farm installation, consisting of thirteen (13) Vestas V150 W/Ts, with a power of 4.5MW each, i.e. the total power of the project is 58.5MW.
- Construction of W/Ts erection platforms with a total area of 81,364.6m²
- Foundation of Pillar Bases with a diameter of 21 m and a depth of around 3m.
- Construction of an internal medium voltage underground electrical network, earthing and optical fiber, for the transmission of the generated electricity which from the W/Ts to the WP control rooms, with a total length of 9.85km.
- Construction of two control buildings/rooms with an area surface of approximately 200 m² each, within an area of 4000 m² each.

Accompanying Projects:

- Road construction for the access to the project installation site and the internal road connection of the W/Ts of WP with a total length of 10,895.87 m of which:
 - ✓ 3,003.77m is new opening and
 - ✓ 7,892.10 is the improvement of existing roads
- Construction of technical rainwater drainage works (rainwater drainage channel and tubular drains of appropriate cross-section)
- Network interconnection projects, which include:
 - ✓ the construction of underground medium voltage transmission lines, which will start from the WP control rooms and will end to the new S/S at the "Manjari" location. The total length of the underground transmission medium voltage will be equal to 29.88km.
- Configuration of five auxiliary construction sites, with a total surface area of 31,367.48m², one of which will host, among other things, an aggregate crusher and a temporary complex for the production of ready-mixed concrete.

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Other technical support facilities & works:

- Individual technical projects of the main project, ie aggregate crusher , concrete preparation silo, use of explosives, sample drilling and research wells.

Generally, it takes about 18 months to build a Wind Farm once all the required permits have been secured. The relevant work schedule is listed below.

Figure 2-1: Gantt line chart (task schedule)

No	ACTIVITIES	MONTHS:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Infrastructure Works		■	■	■	■	■													
2	Civil Works			■	■	■	■	■	■	■	■									
3	S/S and interconnection works							■	■	■	■	■	■	■						
4	Tower and W/Ts Transportation															■	■			
5	Tower and W/Ts erection																■	■		
6	Commencement of Operation/ Trials																		■	■

2.2 Project distances from residential areas, protected areas and existing infrastructure

Regarding the natural environment of the project area, the following are highlighted:

- The studied project falls within the Special Protection Zone (ZEP - SPA) with code GR2120009 and name "Tsamanda Mountains, Filiaton , Farmakovuni , Megali Rachi",
- The studied project falls within the Important Area for Birds with code GR073 and name "Mountains Tsamandas, Filiaton, Farmakovuni and Megali Rachi".
- Part of the studied project falls within the biotope with code AB3090039 and name "Kalamas River"

In order to document the above, a table is provided below with **the protected areas of Law 3937/2011**, but also **other areas subject to protective national and international regimes**, the limits of which are assessed in relation to the zone of influence of the proposed project:

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Table 2-2: Correlation of project location with the network of protected areas

Type of Protected Area	Correlation with project location and study area
Areas of Absolute Nature Protection	The project site does not fall within an area of Absolute Nature Protection , while no such area can be found in the wider project vicinity.
Areas of Protection Nature	The project does not fall within a Nature Protection area. The nearest area of this category is the Nature Protection Area of the Straits and Estuaries of Acheron and Kalama and Kalidiki Marshes, which is located to the east and at a distance of 6.9 km (position W/T13).
Preservable Natural Monuments	No preserved Natural Monuments are included in the project site. The nearest monument of this category is Platanos in Lia Thesprotias, which is located outside the study area and at a linear distance of 3.9 km from the nearest part of the project (the route of the MV underground interconnection line).
National Parks	The project site does not fall within National Parks , while no such area can be found in the wider project vicinity.
Special Areas for Conservation (SAC)	The project does not fall within Special Conservation Areas. The nearest area of this category is the Special Areas for Conservation (SAC) with code GR 2120001 and name "Ekvoli Delta Kalama" which is located southwest and at a distance of 7.1 km from the nearest W/T of the project (W/T1).
Special Protection Areas (SPA)	<u>The project falls within the Special Protection Area</u> with Code GR 2120009 and name "Tsamanda Mountains, Filiaton , Farmakovuni , Megali Rachi"
Wildlife Sanctuary	The project does not fall within Wildlife Refuges. The nearest area of this category is the Wildlife Refuge K830 "Agios Pantos, Platanos, Kokkinolithariou, Agios Nikolaos, Kato Xechoros, Keramitsa , Kryoneriou of the Municipality of Filiaton", which is located north and at a distance of 2.2 km from the nearest W/T of the project (W/T7).
Protected landscapes and elements of the landscape	The project does not fall within Protected Landscapes , while no such area can be found in the wider project vicinity.
Aesthetic forests	The project does not fall within Aesthetic Forests , while no such area can be found in the wider project vicinity.

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Type of Protected Area	Correlation with project location and study area
Areas of Ecodevelopment	The project does not fall within Ecodevelopment areas, while no such area can be found in the wider project vicinity.
Areas protected by the Barcelona Convention	The project does not fall within areas protected by the Barcelona Convention, while no such area can be found in the wider project vicinity.
Ramsar Wetlands	The project does not fall within wetlands of the Ramsar Convention, while no such area can be found in the wider project vicinity.
Landscapes of natural beauty	The project does not fall within landscapes of natural beauty. The nearest such area is the Landscape of Natural Beauty, with code AT3011028 and name "Kharadra Kalpakiotikou stream in Finiki", which is located 1.1km southeast of the W/T13 of the project.
Corine habitats	The project does not fall within Corine biotopes. The nearest such area is the Corine habitat with code A00010031 and name "Kalama Outfalls (Thyami)", which is located southwest and at a distance of 7.2 km from the nearest W/T of the project (W/T1).
Other important landscapes	The project does not fall within other landscapes, while no such area is situated in the wider project vicinity.
Other Important Habitats	<u>Part of the project falls within another important biotope</u> with code AB3090039 and name "Kalamas River".
Small Island Wetlands	The project does not fall within small islands, while no such area is situated in the wider project vicinity.
Important Bird Areas (IBAs)	<u>Part of the project falls within the important area for birds (IBA)</u> with code GR0 73 and the name "Mountains of Tsamanda, Filiaton , Farmakovuni and Megali Rachi".

The following are highlighted concerning the spatial planning of the area:

- The studied project is partially located within institutionalized Local Spatial Plans (GPS or SHOOAP).
- The whole of the studied project is located outside the institutionalized Residential Control Zones (ZOE).

The following shall be mentioned regarding the residential network of the area:

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- The main project is located outside existing settlement boundaries. However, as mentioned above, a small section of the MV underground interconnection line (at a short length of 28.45m) runs within the boundary of the "Smertos" settlement.

In particular, the settlements closest to the area of influence of the project are presented in the following table:

Table 2-3: Nearest settlements to the location of the W/F "PLAISIO"

Settlement name	Official Gazette establishing limits	Degree of Protection	Capacity	Degree of dispersion	Size	Traditional settlement	Distance from nearest W/T
Palampas	201/ D/11-03-1987	-	-	-	-	NO	2.6 km NE of W/T2
Kotsika	-	-	-	-	-	-	1.8km SW of W/T1
Plaisio	-	-	-	-	-	YES	2.1km SW of W/T3
Kerasochori	993/D/12-10-1987	interesting	stationary	scattered	small	NO	1.2km NE of W/T6
Mavroneri	993/D/12-10-1987	indifferent	stationary	scattered	small	NO	1.8km NW of W/T7
Giromeri	-	-	-	-	-	YES	2km SW of W/T9
Potamia	992/D/12-10-1987	indifferent	stationary	coherent	medium	NO	1.9km NE of W/T7
Xechoro	-	-	-	-	-	-	1.3km E of W/T12
Vrysoula	-	-	-	-	-	NO	2.4km NE of W/T7
Kato Xechoro	-	-	-	-	-	NO	2.9km NE of W/T7
Sitana	-	-	-	-	-	NO	3.3km NE of W/T7
Faneromeni	-	-	-	-	-	YES	3.4km SW of W/T13
Saint Nicholas	-	-	-	-	-	NO	3.2km NW of W/T7
Agioi Pantes	-	-	-	-	-	NO	5.8km NE of W/T7
Filiates	General Urban Plan (Government Gazette 1159/D/20-09-1996)						5.4km SW of W/T13
Finiki	-	-	-	-	-	YES	3.2km SW of W/T13
Achladia	154/D/21-03-1995	indifferent	descending	scattered	small	NO	5.3km SE of W/T13
Chlomo	154/D/21-03-1995	indifferent	descending	coherent	small	NO	5.3km SE of W/T13
Rizo	-	-	-	-	-	NO	4.7km SE of W/T13
Dafni	-	-	-	-	-	NO	3km SE of W/T13
Kokkinolithari	-	-	-	-	-	NO	3.3km NE of W/T12
Nerochori	-	-	-	-	-	NO	4km NE of W/T11
Cryoneri	-	-	-	-	-	NO	5.9km NE of W/T7
Chocolatika	-	-	-	-	-	NO	5.3km NE of W/T7
Platanos	-	-	-	-	-	NO	5.9km NE of W/T7

It is emphasized that none of the above settlements has an Urban Plan with the exception of the settlement "Filiates" which has a General Urban Plan as stipulated in the Official Gazette

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1159/D/20-09-1996). Also, it is a settlement whose population exceeds 2000 inhabitants, while all the rest belong to the category of settlements with less than 2000 inhabitants.

According to the data in the above table, it is found that the installation positions of the W/Ts of the proposed project meet the minimum distances from residential activities, as specified in Table D of Appendix II of the Special Spatial Planning Framework for RES (Gazette 2464 B'/2008).

Additionally, the points of archaeological and cultural interest are marked as follows:

- The main project (WF) is located outside archaeological sites and outside monument sites. The nearest archaeological site, which is not a monument or an archaeological site, is located at a distance greater than 1.4km from the main project.

In order to analyse the above, a table is provided which presents the declared archaeological sites, historical monuments and attractions of cultural interest in the Municipality of Filiaton as well as their distances from the location of the nearest W/T of the studied WF, according to permanent list of the national declared archaeological sites and monuments of Greece and the archaeological cadastre:

Table 2-4: Declared Places of historical, archaeological and cultural interest in the Municipality of Filiaton

AA	Name of Monument	GAZETTE	Position	Type of Monument	Distance from project
1	Gum anis cemetery	Official Gazette 35/B/2-2-1962	Goumani , near Kalama Dam	Mortuary Sites and Monuments, Archaeological Sites	10.7 km SW of W/T3
2	Dormition Monastery in Rayo	Official Gazette 404/B/6-7-1965		Monastic Groups , Religious _ Spaces	10.9 km S W of W/T1
3	Tower of Ray	Official Gazette 909/B/8-12-1994		Defense Complexes, Towers	15.6 km SW of W/T1
4	Acropolis of Goumanis after the surrounding tombs, ancient Gitani	Official Gazette 35/B/2-2-1962		Citadels, Defense Complexes, Mortuary Sites and Monuments,	9.4 km SW of W/T13

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AA	Name of Monument	GAZETTE	Position	Type of Monument	Distance from project
				Archaeological Sites, Residential Complexes	
5	Church of Agios Nikolaos Malouni	Official Gazette 274/AAP/2013-07-31	Palaiochori , SE of Malouni settlement	Holy Christian Temples, Religious Places	8.5 km SE of W/T13
6	Bridge Let 's go Greek Apple tree	Official Gazette 213/B/2-4-1996		Bridges	10.3 km SW of W/T6
7	Acropolis of Gardiki	Official Gazette 318/B/8-5-1996	Ypsom a Pyrgos - Kastr	Citadels, Defense Complexes, Archaeological Sites	10.7 km NE of W/T11
8	Catholic I. Monastery of the Dormition of the Virgin in Giromeri	Official Gazette 856/B/25-9-1997		Monastic Complexes, Religious Places	14 km SE of W/T13
9	Monastery of Agios Georgios in Kamitsani Tsamanda	Official Gazette 126/B/11-2-1972		Monastic Complexes, Religious Places	11, 5km NE of W/T7
10	Stone-paved only one foot	Official Gazette 473/B/17-12-1962	mountainous volume Lag mar	Road system	4.4 km E of W/T13
11	Evangelos Doupis building in Kokkinia	Official Gazette 239/B/30-6-1964		Urban Buildings	7.7 km SE of W/T13
12	Communal Primary School Stand out	Official Gazette 473/B/17-12-1962		Urban Buildings, Public Utility Buildings	1.5 km NE of W/T12
13	(former) Primary School in Pigadoulia	Official Gazette 239/B/30-6-1964		Urban Buildings, Public Utility Buildings	11.1 km S of W/T13
14	Temple of the Treasury	Official Gazette 1118/B/8-9-2000	east of the settlement and to the left of the Neraida - Filiaton provincial road	Holy Christian Temples, Religious Places	10 km SE of W/T13
15	Church of Prophet Elias in Plaisio	Official Gazette 381/B/30-6-1983		Holy Christian Temples, Religious Places	10.7 km SE of W/T13
16	The watermill, allegedly owned by Th. Papadopoulou, in the M.U. Platanou of M. Filiaton , Prefecture of Thesprotia	Official Gazette 492/B/13-6-1997		Mills	6 km NE of W/T7

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AA	Name of Monument	GAZETTE	Position	Type of Monument	Distance from project
17	The Watermill in Kampor - Rizos of the Municipality of Filiaton , Prefecture of Thesprotia, owned by Konstantinos Balaouras	Official Gazette 788/B/1-9-1997		Mills	4 km SE of W/T13
18	Bridge to Hey, Amanda	Official Gazette 1059/B/3-12-1997		Bridges	1 2 , 9 km NE of A /C 6
19	Buildings owned by Leonidas Bolofis in Finiki	Official Gazette 404/B/6-7-1965		Residential Complexes, Urban Buildings	3.4 km S W of W/T1 3
20	Old Olive Mill with its equipment	Official Gazette 221/AAP/29-12-2006		Rural Economy , Craft / Industry _	3.6 km S W of W/T1 3
21	Stone bridge and well located in Finiki, Filiaton Municipality of Thesprotia Prefecture.	Official Gazette 68/AAP/23-10-2006		Water Supply Systems , Fountains , Bridges	3.4 km S W of W/T1 3
22	Church of Prophet Elias, Plaision, Thesprotia	Official Gazette 1039/B/25-11-1997		Holy Christian Temples, Religious Places	2.5 km S W of W/T 3
23	Catholic Dormition Monastery, Giromeri, Thesprotia	Official Gazette 538/B/21-6-1995		Ancient monument	1.4 km S W of W/T 8
24	Gitana Thesprotias	Official Gazette 755/B/28-8-1997		Cemetery	9.4 km SW of W/T13
25	Finiki Thesprotias	Official Gazette 1892/B/21-12-2004		Residential Totals	3.2km SW of W/T13

According to the table above, the project as a whole is outside archaeological sites and outside historical and cultural monuments.

The installation location of the main project (WF), according to the data in the above table, meets the minimum distances of $7 \times D = 1050$ m from:

- Zones of absolute protection of archaeological sites (Zones A),
- Historic Sites,
- Cultural Monuments,

as it is defined in the exclusion zone criteria of Table C of Annex II of the Special Spatial Planning Framework for RES, given that no area of the above categories was identified within

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the Municipality Units Filiaton & Sagiada and at a shorter distance of 1050 m from the installation location of the project's nearest W/T .

As regards forests and forest lands the following are noted:

- The intervention surface of the studied project occupies forested and non-forested areas, according to the forest map of the Prefecture of Thesprotia.
- The considered project is compatible with the provisions that apply to **forests, forest lands, reforestable and public lands of cases a' and b' of paragraph 5 of article 3 of Law 998/79 as amended and in force.**

In particular, this compatibility is demonstrated by:

- ✓ from the provisions of paragraph 3 of article 45, of Law 998/79, as amended and in force.
- ✓ from the provisions of paragraph 1 and 2 of article 46, of Law 998/79, as amended and in force.
- ✓ from the provisions of paragraph 3a of article 53, of Law 998/79, as amended and in force.

As per social infrastructure and utility facilities the following are highlighted:

- The project is compatible with the existing infrastructure networks (road network, UN transport networks, port facilities, airports, etc.)

The following are marked in the organized activity receptors:

- Within the Municipality of Filiaton there is no organized receiver of activities in the secondary productive sector.
- In the Municipality of Filiaton no intensive quarrying is observed and it consists of an aggregate quarry area and a gypsum quarry (data from the LATOMET portal).

The statutory spatial planning frameworks related to the project are as follows:

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- The General Framework for Spatial Planning and Sustainable Development (Government Gazette 128/A/03-07-2008)
- The Special Framework for Spatial Planning and Sustainable Development for RES (Government Gazette 2464/B'/3-12-2008).
- The Regional Spatial framework of the Region of Epirus, which was revised with the no. MINISTRY/DCHORS/78523/1208/28-11-2018 (Government Gazette 286/AAP/2018).

The project has been found to be compatible with all of the above General, Regional and Special Plans. According to the provisions of article 5 of the Special Framework for Spatial Planning and Sustainable Development for RES, and the classification categories of the national space, the project **is included in the Mainland, in a Wind Eligibility Area (ΠΑΚ)**.

In particular, for the compatibility of the studied project with the Special Framework for Spatial Planning and Sustainable Development for RES, the following are recorded:

- The studied WF is part of the Mainland, in a Wind Eligibility Area - ΠΑΚ (Municipality Unit Filiaton) and where areas or individual positions are judged by the Energy Regulatory Authority (RAE) according to article 3 par. 1.d of law 3468/2006 , as in force.
- The project under study is located outside the exclusion zones for the siting of wind facilities, as defined in article 6 of the Special Framework for Spatial Planning and Sustainable Development for RES
- The studied WF occupies areas of the category of permitted intervention in accordance with the current legislation, for which the issuance of a relevant permission to intervene in a forest area is provided for in accordance with the provisions of the Forestry Code, Law 998/1979, as it is in effect from time to time, to be incorporated into the environmental conditions of the project, in accordance with the provisions of the existing environmental legislation.
- The project maintains minimum distances from infrastructure works and other related technical works to ensure its sustainability.
- The project does not cause incompatibility with neighboring uses and does not cause visual load/nuisance to neighboring settlements or other uses of special interest.

Regarding the compatibility of the project with the relevant River Basin Management Plans

River Basins Flood Risk Management Plans, the following shall be stated:

- The location of the project is situated in the Water Department of Epirus. The first River Basin Management Plan of Epirus Water Division was approved with the no. E.G. 1005/13-09-2013 (Government Gazette 2292/B') Decision and has been revised with the no. 907/29-12-2017 (Government Gazette 4664/B').
 - ✓ According to the updated register of protected areas of the respective Management Plan and the analysis carried out in section 8.13.3 thereof, the underground water system in which the project under study is located is included in the habitat and species protection areas and other protected areas.
- The design of the project is compatible with what is provided for in the relevant Water Management Plan, given the observance of all the protective measures applicable to the nature of the construction work, while it is not expected to undermine in any way the objectives set for Epirus.
- The project location area, as mentioned above, falls within the Water Division of Epirus, for which the relevant River Basin Flood Risk Management Plan has been approved, with the no. ΥΠΕΝ/ΓρΕΓΥ / 41368/326 (Government Gazette 2684B/06-07-2018).
- According to the maps on which the Zones of Potentially High Risk of Flooding are shown:
 - ✓ Part of the route of the underground MV interconnection line of the project
 - ✓ The plot of installation of the new S/S,

They fall within the Zone of Water Reserves Treatment with code EL05APSF008 and name "Katoros - Delta p. Kalamas and coastal zone of Igoumenitsa". The construction of the project and its operation is compatible with the objectives and measures of the relevant water management plan, as listed in chapter 8 of this EIA, but also with the measures defined for the specific Zone of Water Reserves Treatment, within which parts of the accompanying projects are installed.

2.3 Significant environmental impacts

In general, the design of the proposed project was based on the use of the existing infrastructures of the wider installation area (road construction, Electricity Transmission Network infrastructures), so that the total area of intervention is limited to the minimum possible. Also, the individual projects and infrastructures were designed with the aim of minimizing and mitigating the impacts related to the construction as well as the subsequent operation of the project. The result of this approach was, as documented in the 9th chapter of this document, the inclusion of the project in the environment with the lowest environmental cost.

Then follows a table (matrix) of impact assessment in the study area from the studied project.

The environmental impact summary matrices of the project are color coded and more specifically:

- the positive end of the variation range of each property is depicted in green,
- in yellow the intermediate state,
- with the negative end in red, and
- with gray color of neutral effect.

Then follows the result of the above work:

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Table . 2-5: Project Impact Assessment Table

Factors and Characteristics of the Environment	PROJECT IMPACT ASSESSMENT															
	Phase	KIND			INTENSITY			DURATION		RECOVERY			COMPLEXITY		SYNERGIC/ADDITIVE	
		Positive	Neutral	Negative	Patients	Average	Strong	Short term	Long term	Fully Reversible	Partially Reversible	Irreversible	Immediate	Indirect	Yes	No
Climatic and bioclimatic characteristics	Construction Phase	There are no repercussions														
	Operating phase	√			√				√	√			√			√
Morphological and topological features	Construction Phase			√	√			√			√		√			√
	Operating phase			√	√				√		√		√			√
Geological, tectonic and soil features	Construction Phase			√	√				√		√		√			√
	Operating phase	There are no repercussions														
Natural environment: Flora	Construction Phase			√	√			√			√		√			√
	Operating phase	There are no repercussions														
Natural environment: Fauna	Construction Phase			√	√			√			√		√	√		√
	Operating phase			√	√				√		√		√	√		√
Natural environment: Poultry	Construction Phase			√	√			√			√		√	√		√
	Operating phase			√	√				√	√			√	√		√
Natural environment: Forests and woodlands	Construction Phase			√	√			√			√		√			√
	Operating phase	There are no repercussions														
Natural environment: Protected areas of the National System	Construction Phase			√	√			√			√		√	√		√
	Operating phase			√	√			√			√		√	√		√
Natural environment: Other protected areas	Construction Phase			√	√			√			√		√	√		√

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Factors and Characteristics of the Environment	PROJECT IMPACT ASSESSMENT															
	Phase	KIND			INTENSITY			DURATION		RECOVERY			COMPLEXITY		SYNERGIC/ADDITIVE	
		Positive	Neutral	Negative	Patients	Average	Strong	Short term	Long term	Fully Reversible	Partially Reversible	Irreversible	Immediate	Indirect	Yes	No
	Operating phase			√	√			√			√		√	√		√
Anthropogenic environment: Land uses and spatial planning	Construction Phase		√													√
	Operating phase		√													√
Anthropogenic environment: Structure and functions	Construction Phase		√													√
	Operating phase	√			√			√			√	√				√
Cultural heritage	Construction Phase	There are no repercussions														
	Operating phase	There are no repercussions														
Socioeconomic environment	Construction Phase	√			√			√		√				√		√
	Operating phase	√				√		√		√				√		√
Technical Infrastructures	Construction Phase			√	√			√		√			√			√
	Operating phase	√			√				√	√				√		√
Anthropogenic pressures on the environment	Construction Phase		√													√
	Operating phase		√													√
Air Quality	Construction Phase			√	√			√		√			√			√
	Operating phase		√													√
Noise - vibrations	Construction Phase			√	√			√		√				√		√
	Operating phase	There are no repercussions														
Electromagnetic fields	Construction Phase	There are no repercussions														

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Factors and Characteristics of the Environment	PROJECT IMPACT ASSESSMENT															
	Phase	KIND			INTENSITY			DURATION		RECOVERY			COMPLEXITY		SYNERGIC/ADDITIVE	
		Positive	Neutral	Negative	Patients	Average	Strong	Short term	Long term	Fully Reversible	Partially Reversible	Irreversible	Immediate	Indirect	Yes	No
	Operating phase	There are no repercussions														
Waters	Construction Phase			√	√			√		√				√		√
	Operating phase	There are no repercussions														
Vulnerability to accidents	Construction Phase	There are no repercussions														
	Operating phase	There are no repercussions														

2.4 Measures proposed to protect the environment

The effects of the operation of the project are expected to be in general positive, while some weak negative effects are also identified. Weak negative effects, which are temporary and reversible, will exist during the construction works of the studied W/F and its accompanying technical works mainly:

- ✓ From the limited removal of vegetation from the contraction surfaces,
- ✓ From the limited and in intervention areas only smooth alteration of the terrain in the projects' locations,
- ✓ From the temporary and fully reversible disturbance of the living fauna in the development areas of the projects,
- ✓ From the dust, and
- ✓ possibly from the difficulty of vehicles passing through the construction sections along existing and new roads.

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However, by taking the appropriate measures, any adverse effects will be minimized and dealt with.

The proposed measures aim in turn at the following ways of dealing with environmental impacts:

- Prevention – Avoidance,
- Reduction in intensity and extent,
- Restoration.

In general, the installation of a Wind Farm and its accompanying works, as can be expected, entails some effects and changes in the environment of the places where the operations are carried out. However, a series of measures are proposed to minimize any nuisances arising from the construction of the project:

- Appropriate design of the road construction, taking into account the local peculiarities of the relief, the existing vegetation as well as the avoidance of a large volume of excess excavation materials with the maximum possible leveling of embankments and trenches.
- Planting of the road construction slopes with appropriate plant species of the area and in the appropriate manner.
- Collection, removal and appropriate disposal of all types of waste that will result from the construction work, after separating the recyclables, with their subsequent disposal in recycling centers.
- Operation of construction sites and movement of transport vehicles in compliance with common quiet hours to minimize acoustic disturbances in the nearest settlements.
- Provision for the appropriate sorting, temporary and final disposal of excavation products resulting from earthworks in accordance with the provisions of current legislation.

Furthermore, for all the construction interventions of the entire project, care will be taken to remove as little forest vegetation as possible and replenish it with phytotechnical works, as

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the principles of sustainable development also require. The plant species selected for restoration will be consistent with local bioclimatic conditions and fauna needs.

Particular emphasis will be placed on restoring the site to its original natural state, in order to reduce to the minimum possible any disturbance of the landscape and the in site topography. The same effort will be made during the excavation stage in order to limit them to the technical minimum required which will at the same time ensure the smooth and safe work of the crew members and construction machinery.

During the construction of the project, the necessary measures will be taken to ensure:

- Compliance with environmental conditions set by the contractor,
- The ability to deal with and restore environmentally undesirable situations, due to actions or omissions of the contractor.

It is also noted that:

- The scope of the contract for the earthworks will include the planting / restoration works as well as the obligation for their maintenance, where this is deemed appropriate.
- The relevant archaeological services will be notified in writing upon the start of Project's construction.
- To limit dust during the period of the foundation of the park, systematic wetting of construction site roads, materials, etc.
- Any kind of useless materials (expendables, old machines) will be removed from the project site and disposed of in accordance with the applicable regulations.
- Burning of materials of any kind and form will be prohibited in the project area.
- For surface and underground waters, there will be special prevention to prevent their contamination by any kind of liquids (oils, lubricants etc.). The uncontrolled discharge of liquids on the ground will be strictly prohibited. The management of the used mineral oils will be done according to the current regulations.
- During the construction of the project, the smooth traffic of vehicles to and from the residential areas will be ensured.
- There will be planting of all surfaces that are suitable for bearing vegetation. Planting operations will begin after the formation of the final surfaces.
- The Contractor of the project should undertake:

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- ✓ The control and supervision of the construction of the external interconnection network
 - ✓ The construction of the new Substation
 - ✓ Monitoring its proper operation.
 - ✓ Taking immediate measures if deemed appropriate.
 - ✓ The supply of the required materials for the construction of the project from legally operating quarries in the wider area.
- Care shall be taken to prevent runoff of temporarily deposited materials by rainfall.

In addition, since the project is located within protected areas of the Natura 2000 network, additional specialized measures are proposed.

In particular, according to the Specific Ecological Assessment (EOA) and based on the due assessment and evaluation for the populations of the species of the examined Special Protected Area (SPA) GR2120009 that may be affected, the following are mentioned:

“Regarding the majority of species examined, no significant impacts (direct or indirect habitat loss from the project) are expected in relation to the extent of habitats in the study area, or the ecological requirements of the species, and their conservation status. The same applies to impacts in relation to both the Conservation Objectives and the existing reference values for the population of the species in the study area and the wider area (and their dynamics). For the Golden Eagle and the Serpent Eagle, it is necessary to take mitigation measures so that the effects of collisions, mainly, are sufficiently limited.”

Finally, it is emphasized that **the project operator has and maintains in force an ISO 14001 certified Environmental Management System for its projects in operation**, to which the project under study will be included after the completion of its construction. In the context of the said Environmental Management System, all management actions concerning the environmental parameters of the project are included and integrated.

2.5 Benefits from project implementation

The main purpose of the project under study is the generation of electricity by exploiting wind energy, which, as already analyzed in the above paragraphs, is a renewable and sustainable form of energy. The goal is that the W/F "Plaisio", in addition to its economic and technical viability, leads through its contribution and with the other planned projects to a substantial environmental relief, both of the islands and of the country, but also of the planet, to the extent that it naturally belongs.

Based on the aforementioned, the implementation of the under analysis WF will bring significant benefits both at the local-regional and national level. From an energy point of view, it will give the electricity transmission system additional stability, upgrading the quality characteristics of the current and decentralizing the electricity production. In addition, for each kilowatt-hour produced by the proposed project, the emissions of Carbon Dioxide are reduced by approximately 1 kg, protecting the environment and financially benefiting the state by reducing the sums of money spent on the purchase of emissions rights.

At the local level, the implementation of the W/F will boost employment, both during the construction phase and during its operation phase, given that in both phases, local primarily workforce is selected. At the same time, the local market is utilized for all kinds of needs (hotels and accommodations, supplies and materials, etc.).

Also, both the Municipality in which the planned project is located and the domestic consumers will benefit financially, as the relevant legislation and in particular Law 4964/2022 (Government Gazette A' 150, article 87) stipulates that €1.2 per MWh produced is attributed to the relevant municipalities of administrative affiliation of the entire project and €0.8 per MWh produced is returned through the electricity billing accounts to the residential consumers of the municipalities, in which RES stations operate.

Also, benefits arise for the local community from the construction of public utility projects as a compensatory measure from the installation and operation of the W/F, such as community roads, schools, kindergartens, etc. as well as sponsorships that serve local needs. These should also include the accompanying projects of the W/F (opening and improvements of roads, electricity networks) which, as infrastructure projects, offer the opportunity to upgrade the standard of living of the local community.

2.6 Main and alternative solutions

In the context of this EIA, a series of alternative solutions regarding the design of the project were examined in order to adopt the most environmentally friendly design of it, ensuring at the same time its sustainability. Specifically, the studied alternatives are the following:

- The zero solution,
- Alternative solutions for access road construction,
- Alternative solutions for electrical interconnection,
- Alternative solutions for siting, technology and size of wind turbines.

A brief presentation of the above alternatives is carried out below:

Zero solution

The **zero solution**, i.e. not locating and installing the project in the area, it would make sense for an analytical presentation and evaluation only in the case when the effects of the construction and operation of the project under study were significant and compared to the benefits that will result from the development of the project.

Briefly they state :

- The project under study utilizes wind energy, a renewable natural resource whose exploitation does not produce any kind of solid, liquid or gaseous waste.
- The installation of W/F is done away from human-made activities that may be affected.
- The environmental impacts from the construction and operation of the project, which are assessed and evaluated in detail in the next chapter, are generally mild, of local importance and a large part of them are treatable and reversible.
- The positive environmental effects from the operation of the project are not only limited to avoiding the release of greenhouse gases from the replacement of conventional fuels for power generation, but also extend to satisfying the principles of sustainable development.

Alternative solutions for road construction

The following two scenarios were considered for the selection of the design of the project's access and interconnection road:

Alternative 1 (Main solution)

For the access to the installation locations of the W/Ts of the project, it is proposed to use the existing road network from the city of Filiaton to the settlement "Mavroneri". From this point, for access to production license polygon A, the existing road network will be used, which passes through the "Kerasochori " settlement and ends north of the installation locations of W/T1 to W/T6. Accordingly, for access to production license polygon B, the existing road network will be used which passes through the settlements of "Potamia", "Kato Xechoro" and "Sitaina" and ends east of the location of the installation of W/T7 and W/T8. W/F's road construction will start from the above points, which has a total length of 10.9 km , of which 3.0 km are the improvement of existing road sections and 7.9 km concern the opening of new roads.

An important advantage of this alternative solution is the utilization of the existing road network to the maximum, in order to achieve, as far as possible, a reduction in the requirements for extensive improvements and the opening of many kilometers of new roads. The result is the relatively straight layout of the W/F road construction and its relatively short length. In addition, the engraving is mostly located on terrestrial lands with little scrub and scrub vegetation, without occupying forest areas with a significant density of forest species of shrubs or trees.

Alternative 2 (Rejectable solution)

With this specific alternative, it is proposed that access to the location of the studied W/F will be carried out:

- For the production license polygon A of the project, using the existing road network from the city of Filiaton, to the south of the " Kotsika " settlement, and then using the forest road network that ends between the installation locations of W/T2 and W/T3.
- For production license polygon B of the project, using the existing road network, from the city of Filiaton, up to the height of the "Giromeri " settlement and then to the Holy Monastery of Giromeri, from this point it is proposed to improve the existing dirt road

and then the opening of a new road from the western side of the ridge of the location of W/T7 to W/T13.

The specific solution provides for the improvement of existing road sections with a total length of approximately 6.8 km and the opening of a new road construction of approximately 11.7 km.

It is obvious that the second alternative solution is accompanied by almost double the length of improvements on the existing road network compared to the first alternative solution, as well as a significantly longer length of new road construction, for the final approach to the locations of the W/T installations. For the alternative solution, interventions on a longer length of roads (compared to the proposed one) and therefore a greater extent of habitat loss are foreseen. Thus, as far as the poultry issues are concerned, this alternative solution is more burdensome.

For the above basic reasons, this particular solution is rejected.

Alternative solutions for the electrical interconnection of W/F

For the selection of the method and means of electrical interconnection of the project, the following two scenarios were considered:

First alternative (main solution)

The electrical interconnection of the studied W/F with the National Electric Energy Transmission System will be made through an underground M.V. interconnection line of 33 kV, which will have as its starting point the control rooms of each polygon of the production license of the project and the end to a new substation, which is proposed to be erected within a plot with a total area of 28.100 sq.m. , located south of the " Smertos " settlement.

The interconnecting medium voltage line will follow an underground route of 29.9 km in trenches.

The reasons why the first alternative is chosen as the main one are the following:

- The effects on the flora are minimized, since the construction of the medium voltage transmission line will take place (underground cable) within the deck of the new and existing forest road, thus preventing the removal of additional forest vegetation, beyond that which will be removed during the road construction work of the project.

- The effects in terms of aesthetic nuisance are minimized since the M.V. interconnection line is planned to be underground, therefore not visible from any part of the wider area.

Second alternative (rejectable solution)

As a second alternative solution, the electrical interconnection of the studied W/F with the National Electric Energy Transmission System through an underground M.V. interconnection line was studied. The line in question will, in accordance with the main alternative solution, start from the control rooms of each production license polygon of the project and end at the existing NV/HV substation of Igoumenitsa.

The interconnecting medium voltage line will follow an underground route of approximately 37.6 m in trenches, corresponding to the route of the main alternative solution. The trenches for the interconnection line cables will be constructed within new and existing road construction.

Although the existing S/S Igoumenitsa has sufficient electrical space for the interconnection of the project, the interconnection with it implies a very long length of MV underground line (about 10 km more than the main alternative). This fact implies significant energy losses, which will reduce the efficiency of the project and therefore its environmental balance. In addition, the route of the line (in order to have the shortest possible length) is planned on the "Ioannina - Igoumenitsa" national road and passes through the residential fabric of the settlements "Elea", "Bryssella" and "Mavroudi", so during the construction phase it is expected stronger effects on the anthropogenic environment of the region.

For the above reasons, this solution is rejected.

Alternative solutions for the location, technology and size of wind turbines

For the correct and optimal exploitation of the wind potential at the location of the project, the following two scenarios were examined:

First alternative (main solution)

The main solution proposes the installation of thirteen (13) VESTAS -type W/Ts V150 with a rotor diameter of 150 m and a nominal power of 4.5 MW each along two production license

polygons (specifically A and B), at appropriate points to optimally exploit the wind potential of the project installation location. The total power of W/F is 58.5 MW.

The reasons why this particular solution is chosen as the main one are the following:

- Smaller number of wind turbines compared to the second alternative that is examined below and therefore smaller requirements for road construction and the opening of erection platforms, thus smaller-scale interventions in the environment due to the reduction of excavations that accompany the opening of roads, erection platforms and underground electrical interconnection channels,
- Greater territorial cohesion of the project,
- Achieving the same power with a smaller number of W/Ts than the second alternative.
- Less acoustic disturbance, due to the smaller number of machines compared to the second alternative.
- Thinner zoning , given that the project is installed within a Special Protected Area (SPA).

Second alternative (rejectable solution)

The case of increasing the number and changing the type of wind turbines of the W/F (smaller W/Ts compared to the main solution) and their placement in an appropriate way in order to optimize the use of the wind potential of the installation location was examined. The wind turbines proposed for this solution are seventeen (17) W/T VESTAS type V 105 with a rotor diameter of 105 m and a nominal power of 3.45 MW each, i.e. a total power equal to 58.65 MW which is slightly bigger than the licensed power of the project.

The reasons why this particular solution is chosen as the main one are the following:

- A greater visual nuisance is caused to the points of interest in the surrounding area, due to the greater number of W/Ts, due to the greater coverage of the horizon.
- It is necessary to open a greater number of internal interconnection roads of the W/Ts and a greater number of squares around each wind turbine, in relation to the main solution, resulting in greater volumes of excavations and greater intensity and spread of environmental impacts, on the flora and on the morphological and soil

**SYNOPSIS OF THE ENVIRONMENTAL IMPACT ASSESSMENT STUDY FOR THE PROJECT:
"CONSTRUCTION AND OPERATION OF THE 58.5 MW WIND POWER PLANT (WP) "PLAISIO" AT THE
LOCATION " POULIA - KOTSION - FARMAKOVOUNI " AND ITS SIDE WORKS LOCATED IN THE
MUNICIPALITY UNITS OF FILIATON & SAYADAS OF THE MUNICIPALITY OF FILIATON, REGIONAL UNIT
OF THESPROTIA, REGION OF EPIRUS"**

characteristics of the installation location of the project but also greater topological disturbance.

- Greater acoustic disturbance due to the greater number of machines compared to the first alternative.
- As far as the avian fauna is concerned, this alternative solution is more burdensome (compared to the proposed one of 13 W/T), since the greater number of W/T implies a larger disturbance zone/perimeter around them as well as a denser arrangement of W/T therefore greater risk for bird crossings that take place between pairs of W/T. Also, the greater number of W/T implies a greater area of internal road construction (and a greater loss of habitat area).