REPORT ON THE EVIRONMENTAL IMPACT STUDY

ON THE

” Construction of electricity producing facilities – 5 wind generators, necessary construction work, extension of distribution networks, build up, modification, repair, modernization and rehabilitation of communications – access”

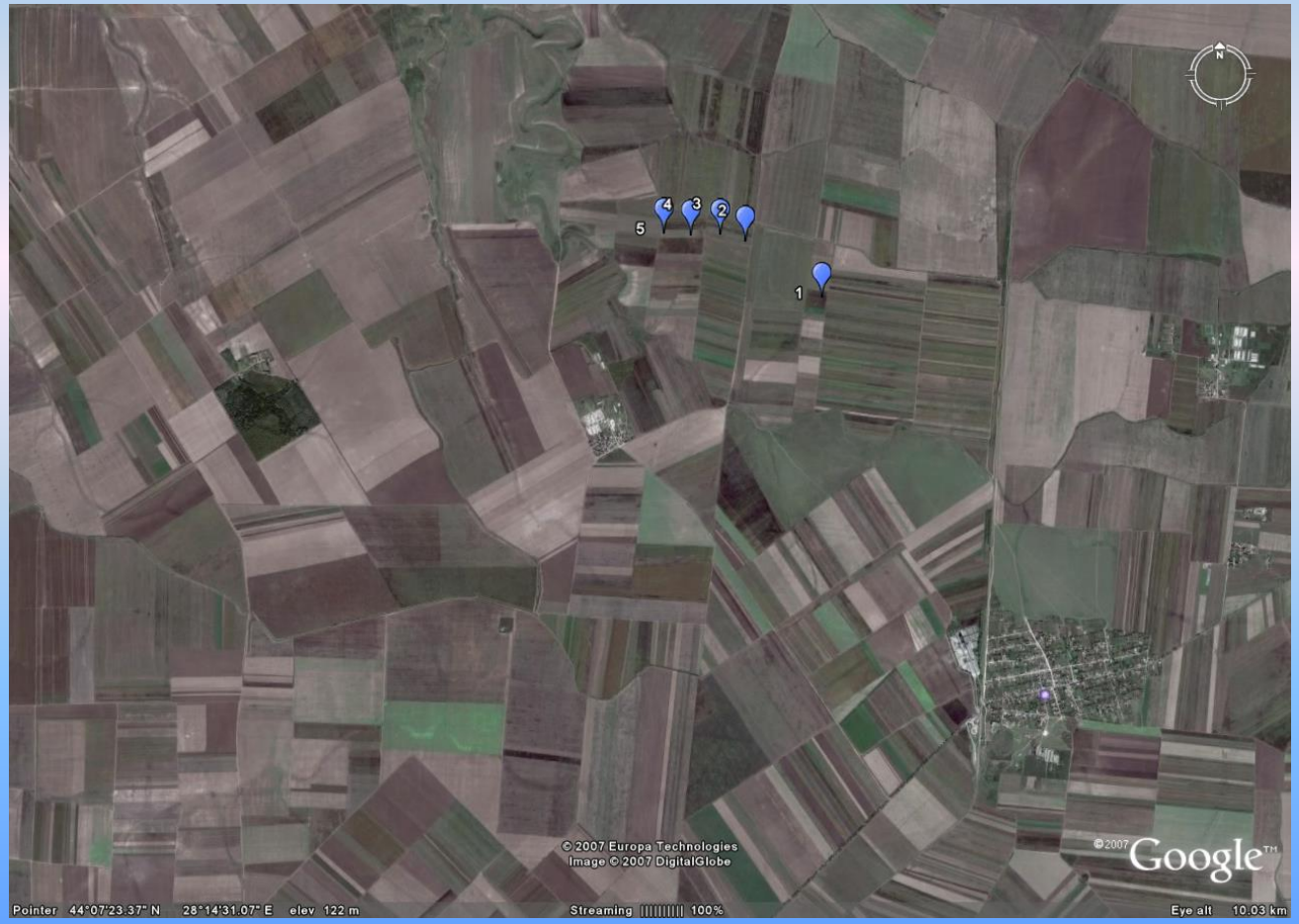
Ciocarlia Commune , Constanta County

Beneficiary:
TURBATU MARIAN
TEUT JAN
S.C. ROMWIND SRL
S.C. NEG PROJECT TWO SRL

Elaborated by:
CABINET EXPERT MEDIU - PETRESCU TRAIAN

PROJECT DESCRIPTION

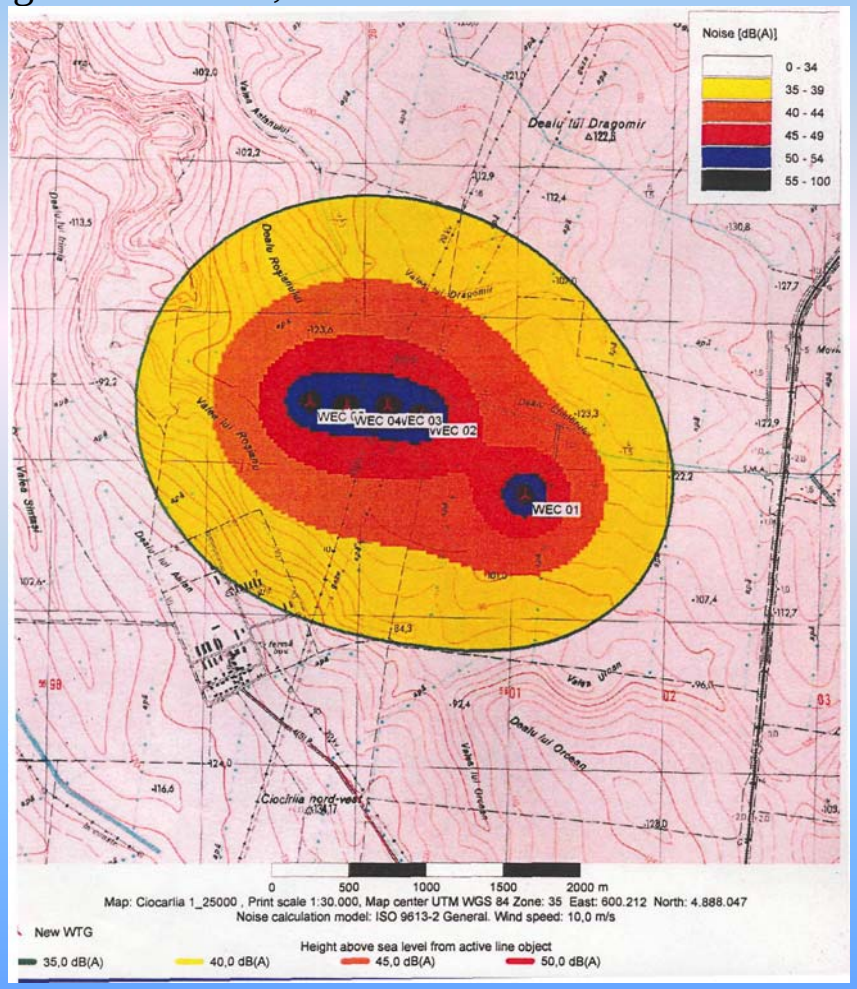
The proposal is for a layout af a wind farm assembly which produces renewable energy. The complex includes **5 wind turbines type ENERCON E 53, 800 kW each, with a total output of 4 MW,** including the necessary auxiliary installations. The entire facility is located in unincorporated area of Ciocarlia Commune, Constanta County, **on a piece of field with the surface of 6 ha, of which 0,3352 ha will be withdrawn from the agricultural useage.**



NOISE PRODUCED BY THE AEOLIANS

Regarding noise produced by the ENERCON E – 53 Aeolians, a study was made for the Ciocarlia location, having as a reference the 10 m/s wind speed at 10 m altitude, using a specialized simulation program.

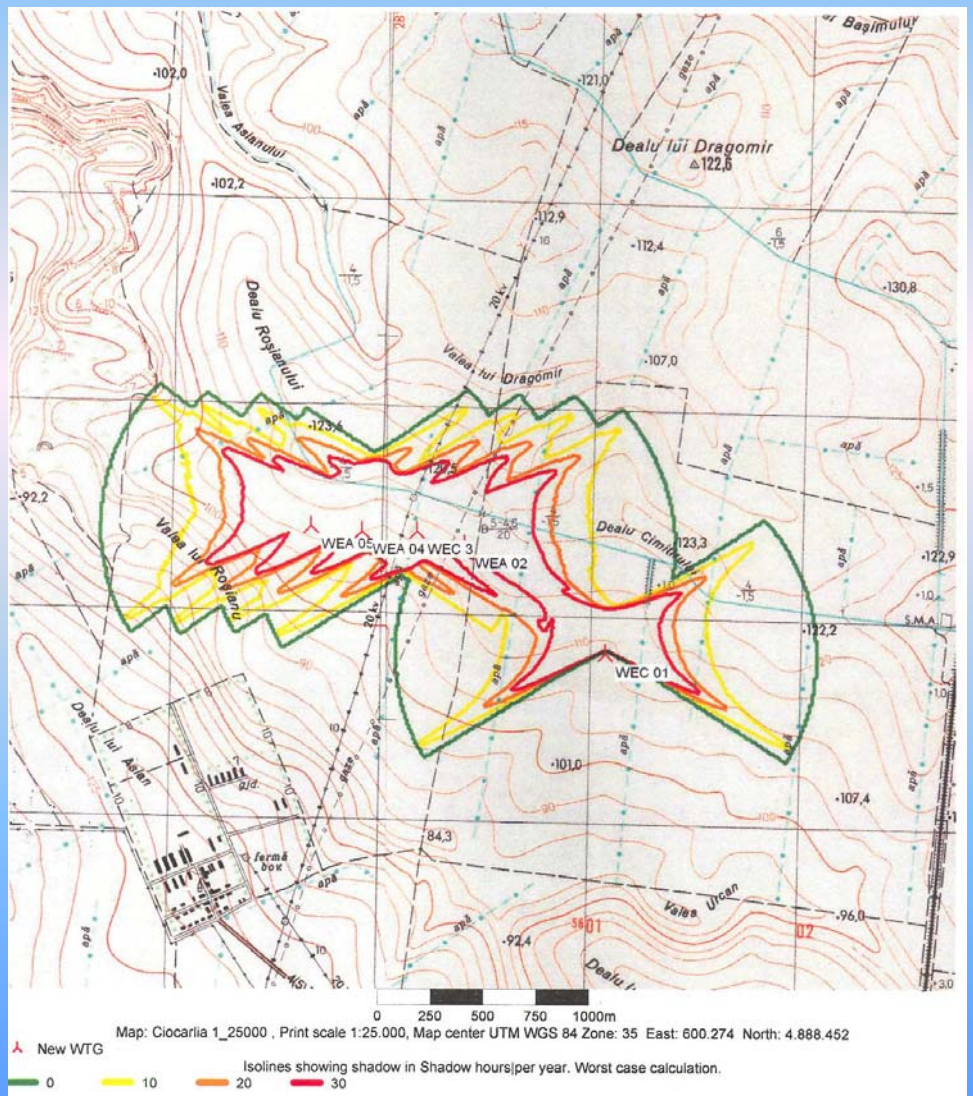
The calculation was made based on the Aeolians technical characteristics: 800 kW power, 73,3 m high mast and 52,9 m wheel diameter.



Mast high Wind at 10 m high	60 m	73 m	75m
4 m/s	92.0 dB (A)	92.5 dB (A)	92.8 dB (A)
5 m/s	93.7 dB (A)	94.2 dB (A)	94.5 dB (A)
6 m/s	97.2 dB (A)	97.7dB (A)	97.8 dB (A)
7 m/s	99.7 dB (A)	100.1 dB (A)	100.3dB (A)
8 m/s	101.3 dB (A)	101.5 dB (A)	101.8dB (A)
95% nominal power	102.5 dB (A)	102.5 dB (A)	102.5dB (A)
10m/s	102.5 dB (A)	**102.5dB (A)**	102.5 dB (A)
Measured value at 95% nominal power			100.9 dB (A)

MAXIMUM SHADING EFFECT

The following images shows the location of the wind farm and the way how the shading effect will influence the selected area, in conformity with the data offered by the beneficiary, respectively shading in annual shading hours based on a worst case scenario.

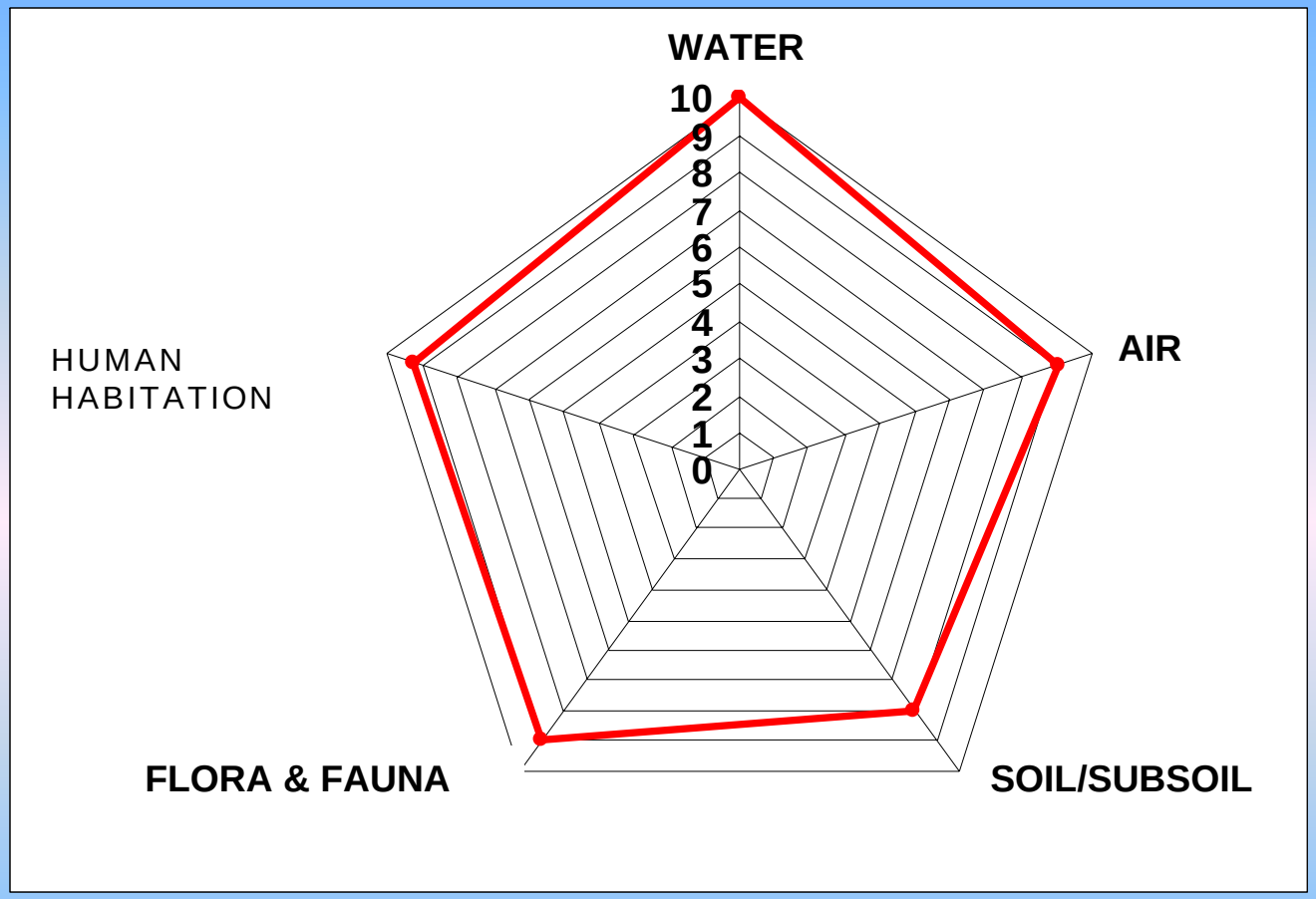


The maximum distance of influence through glowing effect is 996 m.

At a greater distance from the Aeolian, the shading effect is too diffuse to generate negative impact.

Wind mill	Mast high (m)	Wheel diameter (m)	Distance of influence (m)
ENERCON E – 53	73	53	996

THE PREDICTED IMPACT ON THE ENVIRONMENT



Calculation to establish “The global pollution coefficient” - IPG leads to the following value: **IPG = 1,22**.

In accordance with the “Quality index” for IPG = 1,22 it is determined that by the projected objective accomplishment, **the environment governs the admissible limits to the human activity.**

RECOMENDATIONS

1. The blade tops of the Aeolians will be painted in fluorescent colors in order to prevent impact from birds;

2. The towers will be fitted with red blinking lights;

3. Affected areas have to be refurbished with fertile soil, starting from the towers bases, so that all of the affected land will be re-integrated into the agricultural circuit;

4. During the construction activities ecological toilets and specialized containers to collect garbage will be utilized;

5. Excessive use of vehicles and storage of materials on the grass plots should be avoided, except for what is needed for the imminent construction on the grounds;

6. In case of possible accidents with spills of waste water, oil or fuels exiting from the machinery used in the construction process, the collaboration with companies specialized in de-polluting is recommended ;

7. The fire prevention activities should be sustained with adequate measures, in conformity with active legislation and manufacturer recommendations.

FINAL CONSIDERATIONS

After executing the study, consulting a wide range of bibliography and statistical data, the following conclusions were deducted:

- The Aeolians have a positive impact on the landscape and they will contribute to the local economical development.

- During operating, the Aeolians do not produce any kind of pollution on the environment s, Aeolian energy being a source of clean (green) energy.

- The benefit of electricity production using non polluting methods cannot be denied. In this way the contribution to reduction of the total level of emissions resulting from energy production will be increased.

- Being located outside of protected areas (parks, reservations, etc.), the wind farm at the proposed site will not affect flora and fauna in any significant way.

- Aeolians in the proximity of human agglomerations are recommended by experts because migratory birds avoid these areas, and choose their nesting and feeding areas outside of populated areas.