

Zonal Urban Plan - "INSTALLATION OF WIND FARM, REHABILITATION OF THE SERVICE ROAD, CONSTRUCTION OF ACCESS ROADS AND CONNECTION TO POWER GRID", VALEA NUCARILOR commune, NUFARU, TULCEA locality

12. NON-TECHNICAL BRIEF FOR THE INFORMATION SUPPLIED IN THE ENVIRONMENTAL REPORT

According to Governmental Decision no. 1076/2004 regarding the environmental evaluation of some plans/programs for the Zonal Urban Plan: "INSTALLATION OF WIND FARM, REHABILITATION OF THE SERVICE ROAD, CONSTRUCTION OF ACCESS ROADS AND CONNECTION TO POWER GRID", VALEA NUCARILOR commune, NUFARU, TULCEA locality" the present Environmental report was elaborated. For compiling it, according to the requirements of Governmental Decision no. 1076/2004 – Annex no.2, Work Groups were organized in order to identify the environmental issues.

The remarks/ recommendations/ issues raised by the participants were registered in the Official reports elaborated by the ARPM Galati representative and can be consulted at the headquarters of APM Tulcea, at the holders and environmental expert.

The environmental report was structured in 12 chapters, respectively:

1. GENERAL DATA - presenting the PUZ (Zonal Urban Plan), beneficiary, RM elaborator, collaborators and some generalities referring to the environmental strategic evaluation.
2. PRESENTATION OF THE CONTENT AND MAIN OBJECTIVES OF THE PLAN AND PROGRAM, AS WELL AS THE CONNECTION WITH OTHER RELEVANT PLANS AND PROGRAMS

The scope of the Zonal Urban Plan: "Installation of wind farm, rehabilitation of the service road, construction of access roads and connection to the power grid, Valea Nucarilor commune, Nufaru, Tulcea locality" is to exploit the wind potential of the area.

The project has the following location:

- in the North of Tulcea locality, at approximately 5 km
- in the West: Valea Nucarilor locality, at 800 km and Agighiol at 4.0 km;
- in the South: Iazurile locality, approximately 1.0 km
- in the East: Nufaru locality, approximately 2.5 km

In the studied perimeter, on the properties of the beneficiary, evinced with property or concession deeds, the following can be found:

- networks of irrigation tubing and major canals for irrigations.
- power grids.
- areas protected for archeology vestiges (cairns, roman traces 3rd-4th century, funerary tumulus).

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Based on the plan, the wind farm shall be formed of 91 turbines Gamesa G90 type of 2MW/each and Siemens of 2.3 MW/each. The height regime shall be maximum 150 meters.

This chapter also presents the Stereo 70 coordinates of the turbines to be constructed, the territorial balance, the stages for erecting a wind farm, the component parts of the wind turbines.

The following aspects shall also be taken into consideration in the Zonal Urban Plan proposed for analysis:

- Changing the destination of the land, from outside the built-up area, with agricultural destination, to a land with constructions and courtyards, in order to arrange the wind farm;
- Assuring the functional compatibility and some functional connections with the other areas of Valea Nucarilor, Nufaru, Tulcea localities;
- Assuring the present and future road access, local traffic as well as the transit traffic;
- Concisely establish the alignment and the height regime afferent to the constructions;
- The technical - constructional team corresponding to the development of the area

The sub chapter with other plans and programs discusses Romania's Power Strategy for 2007-2010, the National Strategy for Romania's sustainable development - Horizons 2013-2020-2030, the Master Plan of the Biosphere Reservation of Delta Dunarii, the relation with the other approved Zonal Urban Plans (for the same activity - wind farms).

3. THE RELEVANT ASPECTS OF THE ACTUAL ENVIRONMENT STATE AND ITS POSSIBLE EVOLUTION IF THE SUGGESTED PLAN OR PROGRAM IS NOT IMPLEMENTED - presenting the present state of the environment: climate, geomorphology, geology, natural risks, water network, natural resources of Tulcea locality, « Zero alternative» .
4. THE ENVIRONMENTAL CHARACTERISTICS OF THE AREA TO BE POSSIBLY SIGNIFICANTLY AFFECTED - this chapter discusses the hydrology and hydrogeology issues, soil, atmosphere, social-economic environment, biodiversity, scenery, cultural heritage.
5. EXISTING ENVIRONMENT ISSUES, RELEVANT FOR THE PLAN AND PROGRAM - the issues referring to SPA Dealurile Mahmudia-Bestepe and the vicinity with SPA Delta Dunarii and Razim Sinoe Complex, SCI – Delta Dunarii were detailed.
6. THE ENVIRONMENT PROTECTION OBJECTIVES ESTABLISHED AT NATIONAL, COMMUNITY OR INTERNATIONAL LEVEL, THAT ARE RELEVANT FOR THE PLAN AND PROGRAM AND THE WAY IN WHICH THESE OBJECTIVES WERE TAKEN INTO ACCOUNT AND ANY OTHER TYPE OF ENVIRONMENTAL CONCERNS DURING THE PREPARATION OF THE PLAN OR PROGRAM -

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presenting the environmental protection legislation, which transposes the legislation of the European Union and the international conventions and the way in which these were taken into account for elaborating the Zonal Urban Plan.

7. POTENTIAL SIGNIFICANT EFFECTS OVER THE ENVIRONMENT, INCLUDING ISSUES SUCH AS: BIODIVERSITY, POPULATION, HUMAN HEALTH, FAUNA, FLORA, SOIL, WATER, AIR, CLIMATE FACTORS, MATERIAL VALUES, CULTURAL HERITAGE, INCLUDING THE ARCHITECTONICAL AND ARCHEOLOGICAL PATRMONY, SCENERY AND OVER THE RELATIONSHIP BETWEEN THESE FACTORS - among the potential effects over the environment mentioned in the name of the chapter or treaty and the aspects referring to shadowing, flickering, noise and vibrations, radiation, electromagnetic waves. The impact matrix describes the positive, negative, direct, indirect, short, medium and long term effects, cumulated and synergy effects.
8. POTENTIAL SIGNIFICANT EFFECTS OVER THE ENVIRONMENT AND HEALTH WITHIN THE CROSS BORDER CONTEXT - were identified only from the point of view of reducing the green house gas emissions.
9. MEASURES SUGGESTED FOR PREVENTING, REDUCING AND COMPENSATING, AS MUCH AS POSSIBLE, ANY ADVERSE EFFECT OVER THE ENVIRONMENT FOLLOWING THE IMPLEMENTATION OF THE PLAN OR PROGRAM - were mentioned in this chapter.
10. PRESENTING THE ARGUMENTS THAT HAVE LEAD TO SELECTING THE CHOSEN VERSIONS AND A DESCRIPTION OF THE EVALUATION METHOD, INCLUDING ANY DIFFICULTIES (SUCH AS TECHNICAL DEFICIENCIES OR THE LACK OF KNOW-HOW) MET DURING PROCESSING THE REQUIRED INFORMATION - starting from the "Zero alternative" and after establishing the criteria for evaluating the impact, the best plan version was chosen from the point of view of the impact over the environmental factors, which is relevant for the analysed plan.
11. DESCRIPTION OF THE MEASURES TAKEN INTO CONSIDERATION FOR MONITORING THE SIGNIFICANT EFFECTS OF IMPLEMENTING THE PLAN OR PROGRAM - presenting the favorable periods for monitoring, the monitoring plan for the flora and avifauna, establishing the target species, measured parameters, reporting periods and authorities where the post-construction monitoring reports will be submitted.
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CONCLUSIONS :

Wind power is used on a very large scale in the European Union. In Romania, a Member State of the European Union, this issue should be addressed more seriously and even more insistently. If before 1989 using unconventional power (as called then) was a national problem, in the last 19 years it has been neglected. The scientists who have dealt with this subject have emphasized the issue regarding direct usage or the power storage possibilities with the scope of using it during calm periods. The studies carried out up to 1989 have evinced a few type of rotors that can be used depending on the wind regime, especially those with horizontal axis, multi-blade (more than 3 blades) or with vertical axis.

Romania's classification within the established targets for EU require sustained efforts and especially political will and administrative capacity. As you know, the administrative capacity is the most criticized field of EU.

- The construction of the wind farm shall contribute to the fulfillment of the commitments made by Romania through the Treaty of Accession to the European Union with regard to the power percentage obtained from renewable sources.
- According to a PHARE study, Romania's wind potential is approx. 14.000 MW installed power, respectively 23.000 GWh power production per year (total potential).
- Considering only the arrangeable technical and economical potential of approx. 2500 MW installed power, the corresponding power production is approx. 6000 GWh, which represents 11% from Romania's total power production. The following aspects should be evinced:
 - 6000 GWh can be obtained by burning 6.5 million tons of coal, 1.5 billion mc of methane gas or 1.2 million naphtha, that shall eliminate over 7 million tons of carbon dioxide into the atmosphere. By producing the same amount of energy in the wind farms, the carbon dioxide emissions would be ZERO.
 - 6000 GWh = 1.2 million tons of naphtha = 300 million dollars
 - 6000 GWh = 7.500 permanent jobs and an equal number of temporary jobs

The wind power is neutral from the point of view of CO₂ emissions.

The wind power can have a reduced impact at national level, but can be very important for the local communities that can sustain themselves with the power production at local level.

The exploitation of the local wind power sources and the infrastructure construction for using these resources may use local labour forces and have a positive impact on the economy of the localities.

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From the biogeographical point of view, the studied area is classified in the Steppic Region, and in terms of flora is part of Danube-Black Sea province which means that the flora is represented by the dry climate grass species, characteristic of Ponto-Sarmatian steppes and steppe characteristic species. The location studied in the Zonal Urban Plan is **not** part of the Nature network 2000 –SCI-North Dobrogea Plateau.

In terms of avifauna, 199 ha are part of the SPA BestepeMahmudia .

In order to have a more complete picture of the avifauna, a program was elaborated to monitor the perimeter of the wind farm location. In this respect the monitor needs have been established, the study area has been limited as well as the work and data collection methods.

The study area has been established in order to include the entire perimeter of the wind farm, as well as the adjacent areas depending on the monitored bird species.

After processing the monitoring data, the variant with the smallest agricultural land was suggested for the location of the wind turbines, their arrangement shall be in rhomboidal shape on the migration direction N-E, S-V of the birds, and the power cable route shall be underground.

Near the area where the biggest bird population was identified, the investors suggest developing a project together with the Romanian Ornithological Society (SOR), to arrange areas with different cereals as a food source. The project shall evolve in time with help of ornithological experts and SOR members.

There are also plans to build a theme park on an area of 3 hectares, in which an archaeological cairn shall be arranged, an information center for students (that shall present the evolution of wooden windmills in time with the help of models) as well as a house model that is independent from the energy point of view - with solar panels, wind mini turbine). This area shall be destined for the wide audience, as a potential tourist area.

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