Flora and Fauna Report Summary by

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2020

This project name is Habibler TM Energy Transmission. It is to connect the source of energy produced from waste. The facility for Incineration and Energy Production is located 4.5 km to the transmission network. The project will involve the installation of national transmission line with 154KV double circuit 2x1272 MCM conductor energy transmission line. The planned transmission line route is based on the satellite imaged given in Figure 1. Below are the findings of the report:

Potential Project Impacts on Flora

- In the project area, bushes and trees are quite dominant. Potential change in biomass and habitat loss will be inevitable due to project impacts; however It is anticipated that it will not change the vegetation cover in short term.
- The seeds of the plants propagated by seeds in the project area will automatically spread to other areas. It will not cause a significant loss in terms of floristic biodiversity.
- Although it was not observed during the field studies, according to the literature records, there are 4 endemic taxa in the area. Whole other species in the area belong to LC (Least Concern) status.
- Construction phase should not be scheduled within the flowering season for flora.

Potential Project Impacts on Fauna

- Common Tortoise (Vulnerable), Thrace Tortoise (Near Threatened) and Mediterranean horseshoe bat (Near Threatened) were observed in the project area or in close vicinity. These animals should be protected primarily during the construction of the poles and in every subsequent process, and these endangered species should be taken into account in all measures to be taken.
- It is thought that the breeding grounds of animals may be affected by stress factors such as noise and vehicle traffic. However, these negative effects will be limited only during the construction phase. During the operation phase, although there will be partial permanent habitat losses, the area will be largely reusable by other fauna.
- Bird nests were observed in the dense forest cover in the area. At the stage of planting the poles, some or all of these trees on the project route will be removed. This might have impact on species that benefit from these trees. However, the bird species close to the project area will consider alternative habitats for nest-building or feeding purposes.
- Transit bird species will not be impacted.
- Construction phase should not be scheduled within the breeading season for fauna.

Potential Project Impacts on Ornithological

- There will be 17 poles erected, at a min height of 19 m and a max height of 44,25 m.
- Birds at the highest risk of collision are large-sized birds that glide through and have low maneuverability. These birds could be storks. These birds generally migrate in the 100-150 m and 200+ m altitude bands. Most of the bird species detected in the region are in the LC (Common) category. Together, it is in the category of 2 types of EN (Endangered), 2 types of VU (Vulnerable), 1 type of NT (Near Threatened) – (Little Vulture/Endangered, Great Forest Eagle/Vulnerable, Little Kestrel/Vulnerable, Gokkuzgun-Coracias garrulus/Near Threatened, Little Vulture/Endangered)

- Since the Energy Transmission Line (ETL) is an overhead line and the height of the poles is lower than the migration heights of the birds, it is not anticipated to have any major negative impact.

Mitigation Measures for Flora and Flora in Scraping and Operation Phases of the Project

- An environmental management program should be established for the personnel who will work in the project area and the system should be implemented when fauna elements are observed. Thus, the personnel to be employed will be conscious of how to take precautions against the fauna and endemic plant species that they encounter during the construction.
- All environmental controls required by the relevant regulations should be carried out regularly.
- The dust and noise generated by the vehicles to be used during the activities will have a negative effect on the fauna, and the dust on the flora. The dust that may arise from the project may limit the respiratory physiology and reproductive capacities. For this, it is recommended that the vehicles do not go out of the routes determined at the project site and that these roads are regularly wetted with a sprinkler in order to minimize dust formation.
- Setting tools to prevent birds from nesting.
- Establishment of line protection relays that will cut off the electricity in the line in case the ETL breaks down as a result of natural disaster or accident.
- It should not be forgotten that the project area is located on an important and intense migration route. In order to minimize the effects of the project on gliding birds such as storks and hawks, which are frequently killed as a result of collisions with the wires; the measures implemented in Eski Karaağaç (Bursa) were taken as an example. According to this; in an area where large numbers of white storks nest each year, storks and other gliding birds collide with transmission lines. Fire-fly diverter, which is hung on the wires at intervals of 3 to 6 meters, was used to prevent it and it was found to be quite effective in other studies (Feng-Shan et al. 2011). It is recommended to use these stimuli throughout the project route.
- The most common phenomenon in transmission lines is electric shock. In order to prevent this, it is recommended to use insulation materials.
- It is known that the materials to be used vary according to the model of the poles and distribution lines that pose a risk. Especially when the birds stay on the poles, they open their wings or when they land on the wires on the pole, they turn their tails to another wire. In order to prevent them from being bumped by contact, the types of poles on the transmission line should be determined and plastic insulation caps (bird caps) and vertical cable sheaths (jumper lead covers) to be selected according to the distribution line and pole type should be used.
- All machinery that will enter the study area should not go out of the defined roads and should not cause natural vegetation and habitat degradation. All machinery and equipment to be used during operation should not be located outside of the defined parking areas.
- Vertebrates living in the soil and their nests may be destroyed during the excavation works for the areas and roads where the poles will be erected. For this, the areas to be scraped or stripped should be scanned by a Biologist and the catchable species should be transported. If other species cannot be caught, they should be removed by stimulating sounds or vibrations.
- Biological activity in the project area has been increasing since March and breeding activities for both flora and fauna begin to take place. Therefore, except for essential cases, in March, April, May and June, as much as possible, tree cutting, scraping, etc. are not recommended.

- It is known that forest areas have decreased gradually in recent years in Istanbul region where this Project is being planned. It is seen that there are settlements, industrial and mining activities in the region and these activities narrow the natural habitat areas of the region and limit the ecosystem. It is extremely important to minimize the damage that may occur or to rehabilitate the damaged areas. In this context, a biorestoration plan should be prepared in order to eliminate the negative impact in the treated areas in a short time, the necessary biorestoration studies should be carried out as soon as possible in the areas where the works are completed, and special attention should be paid to the use of the natural species of the region during this arrangement. During biorestoration processes, it is preferable to use the vegetative soil previously excavated from the region. Because in shaping the vegetation of the project region, the ecological conditions of the region's soil are also of great importance.