

SGHN. Position paper

Wind power

Wind farm projects must:

- Avoid all damage to priority conservation habitats in the EU (DC 92/43/CEE) as there are no compelling reasons of public interest (DC 92/43/CEE Article 6, Article 45 State law 42/2007) that justify it.
- Minimize impacts over habitats of community interest (DC 92/43/CEE) when it is technically and environmentally possible.
- Minimize the visibility of wind turbines (considering the actual total height of the wind turbines up to the tip of the blades in their highest position) from the best known and appreciated natural viewpoints of the area, to reduce the impact on the landscape.
- Assess in detail and rigorously possible damages of the project over ALL of the species included in Annex I of the Birds Directive, in Directive 92/43/CEE, in the Spanish Catalogue of Endangered Species (Royal Decree 139/2011) and in the Galician Catalogue of Endangered Species (Decree 88/2007) present in the area and consider the adaptation of the project to avoid them completely if they are species of community interest and/or endangered, as there are no compelling reasons of public interest (DC 92/43/CEE Article 6, Article 45 State law 42/2007) for them to be affected by a wind farm project, or to mitigate them in the case of the remaining species listed. Furthermore, in the case of species listed as vulnerable or endangered, EIA should:
 - Adapt the tracing of roads and the placing of wind turbines to avoid damages to flora.
 - Assess alternatives and corrective measures to minimize the deaths of amphibians, reptiles and small mammals in the access roads from being struck by vehicles and entrapment in ditches, drains, cattle grids, etc.
 - Assess alternatives and corrective measures to minimize the deaths of birds and bats from hitting wind turbines and disturbances over their use of the habitats in the area of the wind farm during all phases of the life cycle.
 - Assess the inclusion of all the preventive and/or corrective measures recommended for essential habitats (sites for feeding, breeding, scattering, shedding, resting, migratory stopover and wintering) in the endangered species conservation plans elaborated (or in the process of being produced) by Xunta in accordance with Decree 88/2007 Articles 15 and 16.
- Assess the mortality of amphibians, reptiles, birds and mammal in access roads (road-kill and entrapment in ditches, drains, cattle grids, etc.) and in evacuation lines and the implementation of efficient measures to mitigate it.
- Assess the accumulative and synergic impacts along with other wind farms (authorised or projected, including repowering), as well as the remaining infrastructures associated (power lines, substations, access roads, etc.), within a 10-15 km radius.
- Meet the recommendations of SEO/BirdLife (see Atienza et al., 2011) and of the Spanish Society for the Conservation and Study of Bats (SECEMU; see González et al. 2013) to reduce the impact of the wind farm over bird and bat populations:
 - Avoid building wind turbines at a distance of less than 200 m from threatened habitats: natural wooded formations, water streams and masses, summits and saddles between hills.
 - Avoid building wind turbines at a distance of less than 2 km from refuges of regional, national or international interest for the preservation of bats.
 - Reduce the attraction caused on birds (and indirectly bats, because of the attraction of insects) by the air security beacons positioned in the upper part of the wind turbines, installing models that don't emit light continuously, but intermittently and with the shortest possible lighting intervals.

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- Avoid building wind farms in areas where there is an estimate of more than 20 foggy days per year, as low visibility conditions (less than 200 m horizontally) are linked with the risk of collision of birds.
- Increase the visibility of blades for birds, painting them with distinguishable paint or UV.
- Build wind turbine models that work with slower rotation speeds.
- Stop turbine activity if there are conditions that worsen the risk of death by collision: unfavourable meteorology and nights with a significant migratory stopover.
- Establish the start of the wind turbines at wind speeds higher than 5-6 m/s in the high mortality periods for bats (first hours of the night and months from July to October), since it allows to reduce bat mortality by more than 50% with a loss of power production of hardly 1% yearly.
- Build systems of remote detection of birds and bats in real time, that automatically turn on the alert system and stop wind turbines when there are birds or bats present in the collision risk area.
- Implement a rigorous Environmental Monitoring Programme (see Atienza et al., 2011; González et al. 2013) that considers:
 - Monitoring the death rate of birds and bats by qualified personnel with the use of trained dogs (simple visual inspections have low reliability), with an appropriate frequency (fortnightly in winter, weekly in spring and autumn, and every two days in summer) for a year before authorising the construction work of the wind farm and at least for three years after it becomes operational, supplemented with control studies after 5, 10 and 15 years.
 - Making corpse detection tests by observers and the disappearance rate by them depending on the climatology and the consumption by scavenger species, to be able to estimate the real mortality from the mortality detected.
 - Assessing the impact of the wind farm through loss or deterioration of habitats and disturbances to bird and bat fauna. As a control area, an area with vegetation and similar landscape structure located at least 500 m apart from the wind turbines should be established.

BIBLIOGRAPHY CITED

- Atienza, J. C., I. Martín Fierro, O. Infante, J. Valls and J. Domínguez. 2011. *Directrices para la evaluación del impacto de los parques eólicos en aves y murciélagos (Guidelines for assessing the impact of wind farms on birds and bats)* (3.0 version). SEO/BirdLife, Madrid.
- González, F., Alcalde, J. T. and Ibáñez, C. (2013). *Directrices básicas para el estudio del impacto de instalaciones eólicas sobre poblaciones de murciélagos en España. (Basic guidelines for the study of the impact of wind farms on bat populations in Spain.)* SECEMU. Barbastella, 6 (special issue): 1-31.

Santiago de Compostela, 29 December 2019

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