

Commitment to Biodiversity

1 – Motivations and Principles

The commitment of the Terna Group to respecting biodiversity is inspired by the guidelines and goals expressed in the main international documents on the subject, and the following references in particular:

- UN CBD New Strategic Plan (Convention on Biological Diversity)
- European Biodiversity Strategy for 2020, implemented in Italy with the “National Biodiversity Strategy”
- Guidance on Energy Transmission Infrastructure and EU Nature Legislation (European Commission, 2018)

Furthermore, the commitment is in line with the principles of the Integrated Group Policy and implemented at an operational level through the environmental management system, certified according to standard ISO 14001.

The Group’s focus on biodiversity arises from the belief that Terna, in implementing works and electricity services in the public interest, must necessarily show be sensitive with regard to Italy’s natural and cultural heritage, of which biodiversity and its associated ecosystems are an essential component.

The relationship between Terna’s activities and biodiversity concerns the environmentally sensitive insertion of grid elements (lines, substations) in the area, and is therefore based on the characteristics of the given area and the type of activity, distinguished by the construction of new works and the management of existing plants. In the first case, the Group’s attention to biodiversity focuses on the consideration of environmental aspects in the planning, design and implementation of construction activities; in the second case, focus is primarily on the execution of maintenance activities.

One of the main impacts is that the presence of lines can present a potential risk of birds colliding with the conductors; however, lines can also represent an opportunity to concentrate biodiversity in a given area, particularly in intensively farmed zones. Construction and maintenance activities can generate other impacts, particularly on vegetation, which are generally temporary in nature.

Terna is committed to minimising its impacts on biodiversity, subscribing to the principle of “No net loss of biodiversity” and, where possible, “Net improvement”. These objectives are pursued through the rigorous application of the “mitigation hierarchy” of potential impacts: firstly, solutions are sought to avoid and prevent the occurrence of negative impacts on biodiversity; secondly, if the impacts cannot be avoided, the effects are reduced or mitigated, or measures are taken to offset any residual negative impacts. In this sense, the minimisation of the activities carried out in protected areas and/or sites of interest or value (National protected areas, SCIs [Sites of Community Importance] and/or SPAs [Special Protection Areas], also in relation to the species and territorial characteristics of IUCN World Heritage sites). For instance, World Heritage sites fall under the

“Exclusion” category of the ERPA criteria, which commits Terna not to perform works (infrastructure construction) and the protected areas, which include the relative IUCN categories, fall under the “Repulsion” category that commits Terna not to perform works, unless there are no alternatives or the only alternatives are less environmentally compatible. For the ERPA criteria see the following section, “Action lines”.

To effectively put its commitment into action, Terna actively collaborates with leading environmental organisations.

2 - Courses of Action

Planning and design of new network infrastructures

The importance of preserving biodiversity by adopting the aforementioned mitigation hierarchy is taken into consideration at the earliest stages of the planning process. The prevention of negative impacts is based above all on **full compliance** with biodiversity protection regulations. In particular, these concern:

- the Strategic Environmental Assessment (SEA) procedure introduced by EU Directive 2001/42/EC and transposed by Italian Legislative Decree no. 152/2006, Part II. By taking a top-down approach to planning decisions with the aim of “contributing to the integration of environmental aspects in the development of plans and programmes”, Terna is able to promote a sustainable and environmentally compatible approach to the development of the electricity grid shared with local government and regional authorities;
- the Environmental Impact Assessment (EIA) procedure. This represents another safeguard both in the prevention phase and in the implementation of the necessary mitigation or monitoring measures. In fact, the organisations which verify that the project has been executed correctly also monitor compliance with provisions, thereby guaranteeing the utmost protection and attention for the environment;
- the implementation of the European “Habitats” Directive (92/43/EEC) and “Birds” Directive (79/409/EEC). In line with the “Guidelines for the management of Natura 2000 sites” issued by the Ministry for the Environment and Protection of the Land, Terna subjects its activities to Environmental Impact Assessments (EIAs) in order to identify, assess and mitigate any interferences with surrounding ecosystems.

The observance of national and EU legislation is supported by a number of additional **voluntary initiatives** implemented by Terna to ensure maximum protection for biodiversity. These include:

- the strategic partnership between Terna and the WWF, which involves integrating the WWF conservation strategy criteria in the planning of new lines;
- Terna’s use of the selection criteria for the most suitable environments for new infrastructure, known as the ERPA location criteria (Exclusion, Repulsion, Problematic nature, Attraction). According to this set of criteria, areas are classified based on their

suitability to host the electricity infrastructure. The use of GIS technology (Geographic Information System) enables the comprehensive consideration of all information relating to the land use and any protection restrictions (territorial, naturalistic, cultural, landscape, etc.) and enables the identification of possible sustainable locations for the development of the NTG.

This approach enables construction works in areas of particular interest or value (such as protected areas or World Heritage Sites) to be kept to a minimum, as well as minimising the impact on the environment and biodiversity in general.

Furthermore, in accordance with internal procedures, the preferred solution is selected based on accurate surveys and environmental reports, including but not limited to geological and archaeological surveys, habitat assessments and IUCN species assessments. Each project is supervised by a multi-disciplinary team of internal professionals, aiming to optimise technical decisions and mitigate the impact of the infrastructure on the surrounding environment.

Construction of new network infrastructures

The impact on biodiversity at the building stage concerns construction site works, particularly the opening of routes in order to erect pylons, excavate earth and remove residual materials. Again, activities are carried out in strict compliance with environmental protection regulations and any provisions, adopting the best solutions to limit the effects on biodiversity and monitoring their effectiveness over time. Terna manages the environmental impact of its construction works through a specific operating procedure that entrusts verification and control activities to a qualified environmental expert, who also supervises the activities carried out by contractors.

Existing network infrastructures

In terms of the relationship between existing lines and biodiversity, the main courses of action include:

- the study of the interaction between electrical lines and birdlife. In 2008, through an agreement signed with the Italian Bird Protection League (LIPU), a partner of Birdlife International, Terna launched a scientific evaluation programme to assess the significance of bird collisions with transmission lines, aimed at identifying the environmental conditions that influence the risk of collision and enabling the proposition of appropriate mitigation measures. Furthermore, Terna has worked with internationally respected external ornithologists for over 20 years;
- the installation of various types of deterrents, devices whose colour and shape, as well as the noise generated when blown by the wind, increase the visibility of the shield wire;
- vegetation control. When implementing these activities, which are required to prevent vegetation from coming into contact with conductors which can lead to problems for the electricity service and, potentially, negatively impact biodiversity (fires), the surrounding environment must be taken into close consideration. Terna adopts strict criteria in the selection of its suppliers and has commissioned a study of alternative systems, such as planting plant species with differentiated growth in order to ensure security without having to resort to pruning the vegetation.

Application of the “No net loss” or “Net improvement” principles: bird boxes on pylons:

Terna is committed to the development of alternative uses for electrical infrastructure, including those to promote biodiversity. Numerous studies have shown how electricity lines are used as observation points for the hunting activities of birds of prey, which perch on the pylons due to their height and the protection they offer from predators. Based on these studies, Terna has begun to install artificial bird boxes on pylons. This project has produced excellent results in terms of use by different species of birds, with effects classifiable as “net improvement”. The “Nests on pylons” initiative, carried out in collaboration with the ornithological association “Ornis Italica”, offsets the rarefaction of natural nesting environments and contributes to safeguarding rare and endangered species.

In 2015, the survey and georeferencing with GIS technology (localisation through geographical coordinates) of the nests installed in recent years began, aimed at optimising the effectiveness of monitoring activities. The “Birdcam” project is the final installation of this initiative, which provides for the installation of remote cameras on artificial nests to follow the birds’ reproduction period online on Terna’s website and on www.birdcam.it.

Avian Team

In line with the focus that the Group has always had on birdlife protection, following the trial launched in 2012, in 2017 Terna established an internal Avian Team composed of specialist operational personnel from the Territorial Areas and a team of experts. The Team’s main objectives are:

- to resolve any issues in the electricity system due to birdlife while respecting biodiversity;
- to develop solutions in line with Italian and international regulatory frameworks;
- to improve relations with environmental associations;
- to improve the external disclosure of Terna’s actions to promote biodiversity.

In February 2017, Terna implemented the Operating Instruction (OI) “Use of Terna’s assets to mitigate effects on birdlife” in order to provide operational indications for the management of internal and external applications to install bird boxes, webcams and deterrents on all Terna lines.

3 - Goals

In line with the approach adopted thus far and the guidelines presented in this document, the Terna Group’s biodiversity goals are:

- To resolve issues in the electricity system caused by birdlife or bats while respecting biodiversity;
- To improve relations with environmental associations and facilitate more effective disclosure to the public of Terna’s activities to promote biodiversity;
- To produce a Biodiversity Action Plan and, in particular, a Birdlife Protection Plan to identify priority measures and increase their effectiveness in safeguarding biodiversity;
- To increase the awareness among the public, and the scientific community in particular, of the surveys and environmental monitoring activities conducted on its electrical infrastructures, such as



the Environmental Impact Assessments and the implementation of the provisions received from Local Authorities.

These measures will be performed in line with the corporate management systems certified by the Company, in particular the quality, environment, security and asset management systems.