COUNCIL OF EUROPE
CONSEIL DE L'EUROPE

Strasbourg, 20 November 2014 **T-PVS/Files (2014) 43**
[files43e_2013.doc]

CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Standing Committee

34th meeting
Strasbourg, 2-5 December 2014

Follow-up of Recommendation No. 110 (2004) on minimising adverse effects of above-ground electricity transmission facilities (power lines) on birds

REPORTS BY THE PARTIES

Compilation prepared by
the Directorate of Democratic Governance
The reports are being circulated in the form and the languages in which it was received by the Secretariat

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BULGARIA / BULGARIE

Implementation of the Recommendation No 110 (2004) on minimizing adverse effects of above-ground electricity transmission facilities (power lines) on birds, for the period 2011 -2014

BULGARIA

In connection with the implementation of Recommendation 110 (2004) of the Bern Convention **for the period 2011 -2014**, Bulgaria presents the following information:

GENERAL INFORMATION

The electric transmission network in the country is owned by **National Electric Company LTD.** The total length of the gride is 15 210 km., It incorporates the following types of power lines; 400 kV with a total length of 2 451 km, 220 kV with a total length of 2 805 km and 110 kV with a total length of 9 954 km. The substations of the system include 32 system substations 400/220/110 kV, 400/110 kV, 220/110 kV with a total transformer capacity 15 888 MVA and 256 lowering 110/20/10/6 kV substations with a total transformer capacity 15 143 MVA.

The implementation of the Bern Convention Recommendation 110 (2004) in Bulgaria is important because: 118 protected sites for the conservation of wild birds have been declared on the territory of the country, as part of the NATURA 2000 (22.6% of the total territory); around 383 species of birds (of which 100 species are listed in the Red Data Book of Bulgaria and 327 species are placed under the protection of the Bulgarian Biodiversity Act); two main bird migration routes pass through the country - *Via Aristotelis* and *Via Pontica*.

The activities, related to the safety of the grid, which have been undertaken in the last four years include : research on the experience and the existing practices in other countries, related to securing the electricity networks ; research on the most appropriate tools and technologies to be implemented in Bulgaria, taking into account the restraints coming from the structural characteristics of the electricity networks, its operation and conditions of use ; establishing contacts and meetings with stakeholders ; discussion of practical approaches and actions for the use of technologically applicable and environmentally acceptable means of improving the safety of the grid to the birds ; attracting business support, for the implementation of mutually beneficial activities, in order to enhance the security of the facilities and to provide safest environment for the birds ; establishing partnerships with businesses and NGOs to implement the recommendation.

The analysis of the situation showed, that in order to achieve the best possible environmental outcome, without the needed investments in the sector to lead to sharp increase in the electricity transfer cost, the activities should be implemented during relatively longer period of time, within the scheduled maintenance and replacement of the equipment, in priority areas with the highest mortality of birds, caused by unsafe transmission lines, gradually including other areas. Means of implementation are sought from different sources, including the private sector, European funds and partnerships.

Development of regulations and preparation of Action Plans for threatened bird species

In connection with the implementation of Recommendation 110 (2004), the following administrative measures were taken:

1. The requirements of Recommendation 110 (2004) were taken into account and reflected in the texts of several orders for the proclamation of protected sites under the Birds Directive, prohibiting the construction of overhead electric power lines. Such protected sites are the SPAs BG0002021 Sakar and BG0002066 West Strandzha;

During the procedures for Appropriate assessment of investment projects, conditions for the construction of bird safe grids are being set out in order to avoid the likelihood of accidents with birds and bats, and to avoid the possibility of landing and nesting on the pols;

A strategic document called *National Action Plan for the Conservation of the most important wetlands in Bulgaria* have been developed and consequently approved by the Ministry of Environment and Water in October 2013. The Action Plan is an instrument of national importance for the conservation and management of the 11 wetlands included in the list of Ramsar Convention, including Atanasovsko, Vaya and Poda Likes near Bugas, that are located in a priority to secure region on bird migration route *Via Pontica*;

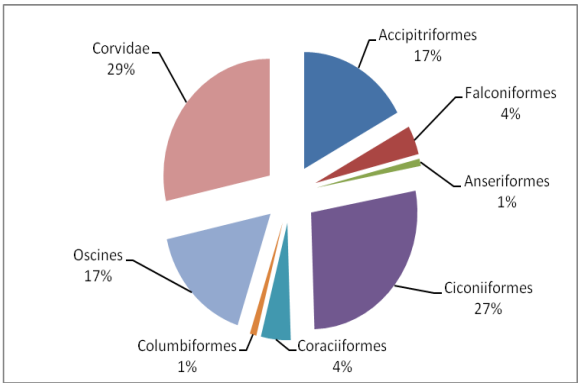
In the approved by the Minister of Environment and Water, during 2014, five Action Plan for the protection of endangered species - *Pelecanus crispus, Botaurus stellaris, Phalacrocorax pygmeus, Aythya nyroca, Oxyura leucocephala* are included activities for the isolation of potentially dangerous for the birds electric infrastructure.

RESEARCHES AND STUDIES

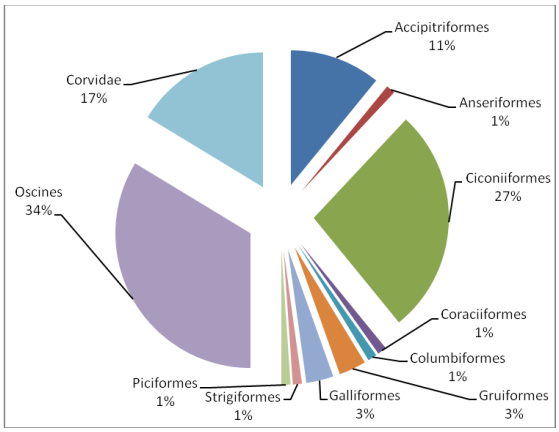
During the reporting period the conduction of specialized studies and collection of information related to the safety of the electricity grid continued.

1. The regions of Bulgaria, with an increased risk for the birds, have been identified including locations which represent "bottleneck" on the migratory routs; locations with concentration of a large number of individuals; locations, inhabited by world endangered species; combination of intense migratory route (*Via Pontica*) and preserved habitats with significant populations of endangered species;

2. Within the project LIFE07 NAT / BG / 000068 Conservation of Imperial Eagle and Saker Falcon in key areas of the NATURA 2000 network in Bulgaria, implemented by Bulgarian Society for the Protection of Birds (BSPB), a report on Mortality rate in wild birds caused by 20kV power lines. Electrocution in six studied protection sites in the Natura 2000 Network in Bulgaria was prepared The distribution of the victims of electric shock, among the bird species, is shown in the following figure:



and distribution of victims collided with wires:



3. Summary report for monitoring of the mounted platforms to safeguard stork nests and the reaction of the birds to them for the period 2011- the licensed territory of "EVN Bulgaria" LTD.

4. Study was conducted on Factors Influencing Bird Mortality Caused by Power Lines within Special Protected Areas and undertaken Conservation Efforts: http://www.acta-zoologica-bulgarica.eu/downloads/acta-zoologica-bulgarica/2014/66-3-411-423.pdf

5. During 2012 and 2013 experts from BSPB-Bulgaria mapped over 7300 poles, from different types, tracking along the power lines in Bulgaria over 500 km. The mapped poles are within the 14 brooding territories of Egyptian vultures, which are situated in 9 sites of the Natura 2000 network.

6. For the period from 2011 to 2014, on the territory operated by EVN Bulgaria LTD, a total of 2 214 electricity poles were isolated. This area includes important habitats for large raptors, as well as habitats and migration routes of waterbirds and storks. Approximate length of the isolated aerial electric power lines between 2011-2014 - 115 km. Secured stork nests, through platforms, for the period 2012-2014 – 788.

The data for the rest of the country are incomplete and therefore not presented in this report.

PROJECTS, CARRIED OUT BETWEEN 2011 AND 2014, INCORPORATING ACTIVITIES AIMED AT ISOLATING AND SECURING THE BULGARIAN ELECTRIC NETWORK.

1. LIFE12 NAT/BG/000572 - *LIFE for safe grid - Enhance conservation of the globally threatened Imperial Eagle in Bulgaria by reducing mortality caused by power lines*; project implementation: 2013–2018. http://bspb.org/en/projects/preview/229.html

The long-term objective of the LIFE for safe grid project is to reduce the mortality in the population of the Imperial Eagle (*Aquila heliaca*), by insulating dangerous poles and avoiding electrocution and collisions with overhead power lines in the most important Bulgarian NATURA 2000 network sites for the eagle.

The project is implemented by the distribution company in Southeastern Bulgaria EVN Bulgaria Elektrorazpredelenie in partnership with the Bulgarian Society for Protection of Birds(BSPB). This is the first time a LIFE+ programme is financing an infrastructure company in Bulgaria.

The project takes place in eight protected sites within the NATURA 2000 network in Bulgaria: BG0002094 Adata – Tundzha (within the Sliven and Yambol regions), BG0002026 Derventski Heights and BG0002014 Madzharovo (in Haskovo region), BG0002021 Sakar (in the Haskovo and Yambol regions), BG0002071 Arda Bridge (in the Kardzhali and Haskovo regions), BG0002066 Western Strandzha (in the Burgas and Yambol regions), BG0002058 Sinite Kamani (the Blue Rocks) – Grebenets and BG0002059 Kamenski Bair (Kamenski Hill) (in Sliven region).

In the time frame of the project EVN Bulgaria will perform the following actions:

- Reduced electrocution risks for at least 16 breeding pairs (about 80% of all known pairs) of imperial eagle; at least 2,740 dangerous poles insulated;
- Reduced electrocution risks in the main temporary settlement areas for juveniles harbouring more than 15 individuals; at least 700 dangerous poles insulated;
- Reduced collision and electrocution risk for five breeding pairs and at least 10 juveniles birds per year;
- The conversion of 45 km of overhead power lines into underground lines; the replacement of a 15 km bare conductor power line with an insulated cable;
- Construction of a PAS System. Within this activity, a covered conductor line will be installed on the 20 KV Balgarin transmission line in the Harmanli Municipality, with a total length of 15 km. The area is situated within the special protected site Sakar.

Hitherto 560 electricity poles and 49 km grid have been isolated.

2. LIFE08NAT/BG/000277 - *Life for the Bourgas Lakes*; project implementation: 2010–2013. http://bspb.org/en/projects/preview/74.html

The project was implemented by BSPB in partnership with the Bourges Municipality, Chernomorsk solnitsi LTD, Bulgarian Biodiversity Foundation and the Royal Society for the Protection of Birds (RSPB / BirdLife UK). The Project objectives is to ensure long term conservation of the protected sites from the ecological network NATURA 2000 - BG0000271 Mandra-Poda, BG0000271 Atanassovsko and BG0000273 Vaya lakes which are important for the survival of priority bird species – Dalmatian Pelican, Pygmy Cormorant, Bittern, White-headed Duck and Ferruginous Duck. The project includes a variety of activities, one of which is the insulation of dangerous electricity infrastructure which causes electrocution of birds. This action will be implemented in cooperation with EVN BulgariaIn the time frame of the project, during 2012, 20 electric pools were insulated near Atanasovsko lake; for the first time in Bulgaria, 796 diverters were installed over 7.5 km from the grid. During 2013th, 40 electric pools were insulated.

3. LIFE10 NAT/BG/000152 - *Urgent measures to secure the survival of the Egyptian vulture (Neophron percnopterus) in Bulgaria and Greece*; project implementation: 2011–2016. http://bspb.org/en/projects/preview/163.html

Goal/ Tasks: Prevent extinction of the Egyptian vulture in Bulgaria and Greece; Target areas: 27 Natura 2000 zones (12 in Bulgaria and 15 in Greece); Coordinating beneficiary Bulgarian Society for The Protection of Birds (BSPB), partners: Hellenic Ornithological Society (HOS); World Wildlife Fund-Greece (WWF); Royal Society for the Protection of Birds (RSPB).

The project includes a range of activities, including:

- Identification of potentially dangerous for the species electric grid, in the target areas of the project, in Bulgaria and Greece;
- Securing dangerous electric network in the target areas of the project in Bulgaria and Greece;
- Limiting mortality caused by electrocution.

In the time frame of the project, during 2013, 10 electric pools were insulated.

Priority objectives for 2014 – isolation of 61 electric poles, in four breeding areas of the species, in the Eastern Rhodopes.

4. LIFE07 NAT/BG/000068 – *Save the raptors - Conservation of imperial eagle and saker falcon in key Natura 2000 sites in Bulgaria;* project implementation: 2009–2013. http://bspb.org/bg/projects/preview/8.html

The project aims to: Remove or reduce the direct and indirect threats in the habitats and migration areas of the target species; Maintain and enhance habitat 8 in Natura 2000 sites; Prevent further loss of nest sites and create new sites; Ensure best practice for conservation is mainstreamed into Natura 2000 site management; Create positive attitudes to the imperial eagle and saker falcon among key stakeholders.

The project was implemented by BSPB in partnership with the following partners: Central Balkan National Park, Bulgaria Royal Society for the Protection of Birds/BirdLife, United Kingdom MME/BirdLife, Hungary Fund for Wild Flora and Fauna, Bulgaria.

The project takes place in eight protected sites within the NATURA 2000 network in Bulgaria: BG0002005 Ponor; BG0002021 Sakar; BG0002053 Vrachanski Balkan; BG0002054 Sredna Gora; BG0002057 Besaparski ridove; BG0002058 Sinite kamani – Grebenets; BG0002059 Kamenski Bair; BG0002066 Zapadna Strandzha; BG0002071 Most Arda.

Under the project are isolated unsafe electrical poles within 5 km around the nests of Imperial Eagles; during the period 2011-2013, 595 electric pools were insulated.

thanks BSPB-Bulgaria and EVN Bulgaria LTD for the information and assistance provided.

October 2014

CYPRUS / CHYPRE

REPUBLIC OF CYPRUS
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RURAL RESOURCES AND ENVIRONMENT

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5 September, 2014

URGENT – VIA EMAIL

Mrs. Ivana d'Alessandro
Secretary of the Bern Convention
Council of Europe

FOLLOW-UP OF RECOMMENDATION NO.110 (2004) ON MINIMISING ADVERSE EFFECTS OF ABOVE-GROUND ELECTRICITY TRANSMISSION FACILITIES (POWER LINES) ON BIRDS

Dear Mrs. d'Alessandro,

I am referring to your letter dated 27.2.2014 regarding the aforementioned subject and after consultation between the competent authorities of the Republic (Game and Fauna Service and Electricity Authority of Cyprus), we hereby inform you on the following:

a. All new power lines are required to undergo a thorough environmental impact assessment where all environmental concerns are being scrutinized.

b. Additionally, before the undertaking of environmental impact assessment, a consultation is being conducted between the EAC and the Game & Fauna Service, which is the competent authority for wild birds and the implementation of the Birds Directive. During the consultation great effort is given so that new power lines are not built within important bird areas (particularly for raptors) or Special Protection Areas (SPAs). This has been proven very useful in a number of cases where power lines have been diverted from original plans.

c. In a limited number of cases where power lines should cross or are near-by an important bird area, mitigation measures are introduced like the placement of markers and fire fly diverters.

d. The provisions of Recommendation No. 110 (2004) are being implemented.

We remain at your disposal.

Sincerely,

Elena Stylianopoulou
for Director

ΔΖ –04.05.003.001.001 To Bern Convention for Rec.110-2004 - via email 05/09/2014

CZECH REPUBLIC / RÉPUBLIQUE TCHÈQUE

THE CZECH REPUBLIC
IMPLEMENTATION OF RECOMMENDATION NO. 10/2004 OF THE CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE AND NATURAL HABITATS (BERN CONVENTION)
STANDING COMMITTEE ON MINIMISING ADVERSE EFFECTS OF ABOVE-GROUND ELECTRICITY TRANSMISSION FACILITIES (POWER LINES) ON BIRDS
(2010 - 2014)

The Czech Republic is cut across by 70,000 kilometres of high voltage overhead transmission and distribution power lines. The transmission system also includes more than 750,000 transmission towers and electricity pylons. Overhead power lines affect birds by injuring and killing them on unsuitable high voltage utilities resulting from causing short circuits (short circuit between energised wires, or short-to-ground) or by collision into the cables of power lines.

Due to unsuitable technologies, most of the utilities are fatally dangerous particularly for medium-size and large birds including rare and threatened species, *e.g.* the White-tailed Eagle (*Haliaeetus albicilla*), Osprey (*Pandion haliaetus*), Peregrine (*F. peregrinus*), Saker (*F. cherrug*) or the Red Kite (*Milvus milvus*). Power lines passing through the open landscape and through sites of higher bird accumulation are extremely dangerous. Since 1980, preventive measures against electrocution, *e.g.* installing protective utilities or developing new designs have been applied in the Czech Republic. Pursuant to the national legislation, a transmission system operator is obliged to implement technological measures to protect birds on new, existing or renewed high voltage transmission utilities by June 6,2024.

In collaboration with the Ministry of the Environment of the Czech Republic, the Nature Conservation Agency of the Czech Republic (NCA CR) deals with the topic both technically and by making every effort to closely co-operate with main electric energy distributors in the country. Particularly due to activities carried out by E.ON Distribuce, Ltd. suppliers had been called to develop new safe technologies for all the types of transmission towers and electricity pylons. New proposals from some of them helped to make energy distribution utilities safer and the NCA CR could issue its preliminary recommendations on the technologies. These products may be considered as a considerable progress in protection of birds on high voltage overhead transmission power lines. Due to active collaboration between the State Nature Conservancy authorities and electric energy distributors, proper attention will be given to the issue and the current positive trend will be soon reflected by decline in numbers of birds killed on electric transmission lines (HLAVÁČ *et al.* 2012).

In 2014, the NCA CR issued *Guidelines for Protecting Wild Birds from Injuries on Overhead Power Lines* (NCA Cr 2014). The comprehensive and detailed methodology based on the experience and lesson learnt not only in the Czech Republic, but also in abroad, has been used by the NCA CR´s regional branches in the field as well as NGOs or other stakeholders involved.

References:

Hlaváč V., Koubová M. & Neuwirthová H. (2012*): Protection of birds against high voltage lines. Is there a sheet lightening?* Ochrana přírody 67 (5): 7-9 (in Czech, with an English summary)

NCA CR (2014): *Guidelines for Protecting Wild Birds from Injuries on Overhead Power Lines.* Nature Conservation Agency of the Czech Republic Prague, 33 pp. (In Czech).

Prepared by Václav Hlaváč and Jan Plesník, Nature Conservation Agency of the Czech Republic Havlíčkův Brod and Prague

FRANCE / FRANCE

NOTE AU SECRETARIAT DE LA CONVENTION DE BERNE SUR LE SUIVI DE LA RECOMMANDATION N°110 (2004) VISANT A MINIMISER LES EFFETS NEFASTES DES LIGNES ELECTRIQUES SUR LES OISEAUX

Septembre 2014

La plupart des activités humaines qu'elles soient industrielles ou domestiques requièrent aujourd'hui l'utilisation d'électricité et ont donc nécessité le développement de réseaux de transport, dépendant de Réseau de transport d'électrécité (RTE) et de distribution d'électricité, dépendant de Eléctricité Réseau Distribution France (ERDF) ou de Entreprise Locale de Distribution (ELD). Ainsi, les réseaux électriques et plus particulièrement le réseau de transport d'électricité en raison de sa densité de câbles, induisent une « fragmentation » de l'habitat des animaux volants et principalement des oiseaux. Cela a pour conséquence principale la mort d'individus par collision avec les câbles électriques. Les réseaux électriques sont aussi la cause d'électrocution lorsque les oiseaux se posent sur les supports, en particulier sur les réseaux de distribution du fait du faible écartement entre les parties à la terre et les parties au potentiel. L'entretien de ces réseaux est également source de dérangement des espèces ou de modifications de leur comportement.

Les oiseaux font l'objet d'une attention particulière dans les aménagements de lignes électriques car ils sont exposés à deux types de dangers :

- la collision, le plus souvent avec les lignes hautes et très haute tension, mais parfois aussi avec le réseau moyenne et basse tension,
- l'électrocution, le plus souvent sur des ouvrages moyenne et basse tension (lignes ou poteaux), mais parfois aussi sur le réseau haute tension, pour certaines configurations de pylônes.

Les collisions avec les lignes électriques impliquent un grand nombre d'espèces d'oiseaux y compris des espèces protégées et pourraient affecter la viabilité des populations. L'identification des facteurs influençant la collision aviaire, l'évaluation de son impact sur les populations et la réduction de cet impact constituent donc un enjeu fort de conservation. Selon les espèces, et en particulier selon leur envergure, leur maniabilité en vol et leurs comportements, la vulnérabilité vis-à-vis des lignes électriques diffère.

1. Prendre des mesures rentables qui s'imposent pour réduire chez les oiseaux la mortalité imputable aux lignes électriques

Conscients de l'impact des lignes électriques, les gestionnaires de réseaux (RTE, ERDF et les ELD) réalisent des actions de protection. Celles-ci reposent essentiellement sur des contacts réguliers engagés dès les années 90 entres les associations naturalistes et Electricité de France (EDF). Dès 1992, EDF s'est engagée en signant avec l'Etat un "Accords réseaux électriques et environnement" pour limiter l'impact environnemental des réseaux, et la Ligue pour la protection des oiseaux (LPO) a réalisé la première synthèse nationale sur les cas d'électrocution et de collision avec les réseaux électriques. Cette première étude a permis d'évaluer le risque de certains équipements et la sensibilité de milieux fragiles.

Ces accords triennaux ont régulièrement été signés depuis pour devenir des contrats de service public entre EDF et ses filiales et l'Etat. .

Ces contrats de service public triennaux entre l'Etat au niveau central et chacune des sociétés publiques de transport ou de distribution d'électricité (RTE sur réseau haute et très haute tension et ERDF sur réseau moyenne et basse tension) intègrent des objectifs généraux de prise en compte des questions environnementales (par exemple des engagements à enterrer les lignes nouvelles) et de

résorption de sites problématiques pour l'électrocution et/ou la collision de l'avifaune. Ces accords d'objectifs globaux, ont ensuite été relayés localement par des conventions entre associations et EDF puis entre associations et les filiales d'EDF à leur création, avec souvent une faible précision dans leurs objectifs et délais d'application et également des retards fréquents d'application de la part d'EDF, puis de ses filiales.

Les gestionnaires de réseaux électriques et associations de naturalistes ont multiplié les contacts pour mener ensemble des actions d'insensibilisation des lignes. Depuis 2004, ces contacts se sont organisés sous la houlette d'un organe de pilotage original : le Comité National Avifaune (CNA). Ce comité regroupe deux grandes associations de protection de la nature : la Ligue pour la Protection des Oiseaux (LPO) et France Nature Environnement (FNE) et les principaux gestionnaires de réseaux électriques en France : Réseau Transport Electrique (RTE) et Electricité Réseau Distribution France (ERDF). Ce comité a pour objectif de discuter et de mettre en place des actions visant à réduire les impacts des lignes électriques sur les oiseaux. Il existe en effet un engagement de la Commission européenne, des entreprises de distribution et de transport d'électricité ainsi que des organisations non gouvernementales à réduire l'impact des réseaux de distribution et de transport d'électricité sur les oiseaux par le biais de conventions internationales (Convention sur les espèces migratrices appartenant à la faune sauvage, 1979) et de déclarations (Budapest declaration on bird protection and power line, 2011).

Le CNA associe des organisations non gouvernementales et des entreprises. Le CNA aide RTE et ERDF à orienter leurs efforts de protection de l'avifaune vers les actions les plus efficaces. Il favorise notamment, au niveau régional et local, les relations entre les opérateurs et les naturalistes, veille à la cohérence des actions en cours et futures, et aux priorités de mise en œuvre.

Le CNA se réunit quatre fois par an et permet d'aborder les points suivants :

- retour d'expériences des initiatives en région,
- partage des bonnes pratiques,
- analyse des difficultés rencontrées sur le terrain,
- mobilisation des acteurs locaux.

Le ministère de l'écologie, du développement durable et de l'énergie (MEDDE) participe aux travaux du CNA.

Le CNA diffuse deux bulletins : « Oiseaux et Lignes Electriques » - bulletin thématique sur des problématiques espèces ou techniques, et « Oiseaux et Lignes Electriques – Actualités » - axé sur les évènements locaux.

Deux colloques ont également été organisés par le CNA en 2005 et 2009 sur le thème des Oiseaux et des Lignes Electriques. Un troisième colloque se tiendra le 2 octobre 2014 à Paris.

Sous l'impulsion du Comité National Avifaune le lien entre les partenaires a été consolidé depuis le 1er septembre 2011 : un poste de Médiateur Environnemental, chargé de faciliter le dialogue entre les associations et les opérateurs de réseaux électriques et de prévenir les difficultés, a été créé dans le cadre d'un mécénat de compétences de la part des opérateurs RTE et ERDF. Un ingénieur des entreprises a ainsi été détaché auprès de la Mission Rapaces de la LPO pour une durée de trois ans. Depuis sa prise de fonction, il a participé à différentes rencontres locales et 19 dossiers locaux sont en cours d'instruction par le médiateur: 14 ERDF et 5 RTE. 15 dossier sont à la demande du milieu associatif et 4 des opérateurs.

2. Appliquer autant que possible les mesures en faveur de la sécurité des oiseaux proposées dans le rapport cité dans les considérants ci-dessus, et notamment celles de son annexe 1

Il reste difficile d'établir un bilan complet de ce qui se fait concrètement en matière de neutralisation par toutes les sociétés d'électricité nationale (sans parler des ELD), faute d'un véritable dispositif de suivi informatisé de la part des sociétés nationales d'électricité. Néanmoins, des activités très concrètes ont été réalisées.

a) Proscrire les types de support les plus dangereux

Dans le cadre du Plan national d'action « aigle de Bonelli » un projet est en cours en Languedoc-Roussillon avec la DREAL et RTE. Cette espèce très rare est présente dans trois régions (Languedoc Roussillon, Provence-Alpes-Côte d'Azur et un département de Rhône-Alpes : l'Ardèche). Plus de 50 % de mortalité de ces oiseaux constatée l'est par électrocution et quelques cas de collision avec les lignes. Résoudre ce problème à l'échelle de l'aire nationale de présence de l'espèce est considéré comme l'un des principaux facteurs clés pouvant permettre un redémarrage de la dynamique de cette espèce toujours très fragile et celui sur lequel il est le plus facile d'agir en pratique. Les actions menées en Camargue-Crau (principale zone de concentration d'oiseaux non territoriaux en France) dans les années 90 semblent avoir eu un effet positif : le CNRS détecte une différence significative de survie adulte et immature après l'équipement de cette zone. Il y a encore cependant beaucoup de cas d'électrocution (3 en 2008-2009 en Hérault et au total 24 aigles de Bonelli décomptés en France depuis début 1990 malgré la quasi absence de suivi régulier des lignes).

En 2010, un chiffrage global minimal (sans tenir compte des cartographies non encore réalisées et des territoires non gérés par ERDF) et plusieurs priorités y ont été définies pour l'Aigle de Bonelli, en ce qui concerne les lignes moyenne tension (en gestion ERDF) :

- Total des poteaux très dangereux identifiés en zone de référence Bonelli : 5 100 environ (dont ~ 1 000 en Languedoc-Roussillon)
- Total des poteaux très dangereux neutralisés en zone de référence Bonelli : 1 700 environ (dont ~ 268 en Languedoc-Roussillon)
- Total des poteaux très dangereux identifiés et restant à neutraliser en zone de référenceaigle de Bonelli : 3 350 environ (dont ~ 705 en Languedoc-Roussillon)

Des priorités ont été définies par les acteurs du Plan national d'action « aigle de Bonelli »:

- neutraliser les domaines vitaux occupés et zones de rassemblements d'oiseaux non territoriaux (en particulier une zone attractive pour l'aigle de Bonelli, très quadrillée de lignes « accidentogènes » a été identifiée vers Bessan (Est Béziers) avec 4 oiseaux morts en 2 ans. Le cœur de ce secteur sensible a été cartographié plus précisément en mars 2010.
- neutraliser les domaines vitaux vacants les plus favorables
- neutraliser les autres sites vacants : Au total avec la première priorité pour la région Languedoc-Roussillon (~ 1 000 poteaux à neutraliser (~ 10 % de l'ensemble national prévu), en les attribuant spécifiquement aux sites à aigles de Bonelli. Cette action serait déjà une avancée significative, atteignable en 3 ans. Pour ce qui est des lignes haute tension (RTE), ce travail de chiffrage n'a pas encore été réalisé mais les deux nouveaux oiseaux trouvés électrocutés en 2010 relèvent de ces lignes selon toute vraisemblance et il est certain que le risque d'électrocution y existe (d'autres rapaces ayant déjà été affectés sur certains pylônes). Les collisions sont quant à elles peu documentées mais les cas en augmentation. Une évaluation complémentaire doit donc être faite pour les lignes HT des secteurs à aigles de Bonelli.

La mise en place de ces actions répond à une nécessité (espèce protégée et responsabilité finale de l'Etat pour sa conservation sur les sites Natura 2000).

b) recourir aux normes techniques de pointe recommandées

Dès 1979, RTE a intégré des mesures favorisant la protection de l'avifaune, et ce bien avant la parution des premiers inventaires des Zones Importantes pour la Conservation des Oiseaux (ZICO). Deux dispositifs complémentaires ont été développés et sont installés depuis le début des années 80 afin de limiter le risque de collision des oiseaux avec les lignes électriques :

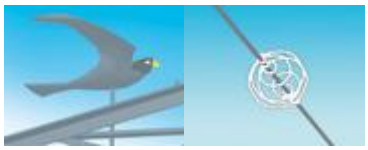
- *L'avertissement visuel :*

des spirales ou balises avifaune en matière plastique colorée (blanche pour les oiseaux à activité crépusculaire et rouge pour les oiseaux à activité diurne) ont été mises au point afin d'être installées sur les câbles pour les rendre plus visibles. Cette technique a démontré son efficacité : elle permet de diminuer de 65 % à 95 % le nombre d'accidents par percussion.

- L'effarouchement visuel :

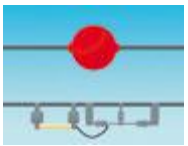
des effigies de rapace peuvent aussi être mises en place en haut des pylônes de manière à effrayer certaines espèces d'oiseaux. En effet, à la vue d'un prédateur, les oiseaux modifient leur hauteur de vol pour passer au dessus du « prédateur » ou s'éloignent de la ligne

Protection des oiseaux :



Les spirales et les silhouettes de certains rapaces permettent d'éloigner les oiseaux de l'ouvrage et de prévenir les risques de collision sur les câbles.

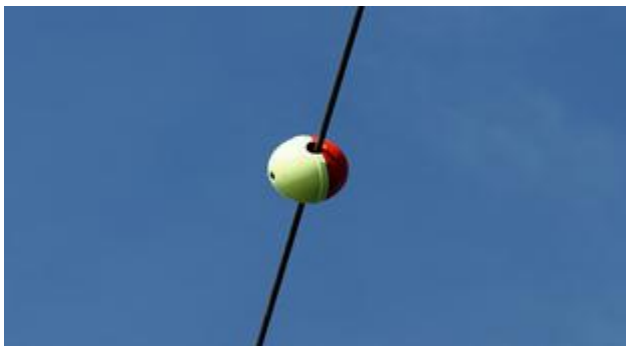
Balises aéronautiques :



Des balises diurnes et nocturnes, insérées sur les câbles à proximité des aéroports, permettent une meilleure visualisation de la ligne par les pilote. Elle sont également efficaces pour l'avifaune.

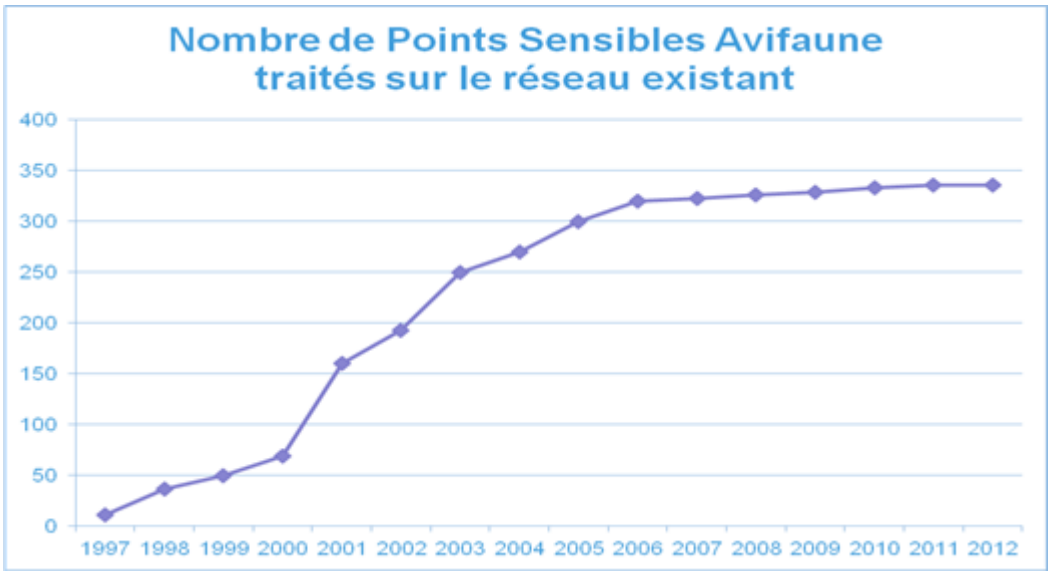
La mise au point des dispositifs de protection a été le fruit d'un travail collégial entre les experts ornithologues et les experts de RTE. Le savoir-faire de chacun a permis de résoudre des difficultés de conception. Les premières balises avifaune ont été créées au sein de RTE dans le Nord de la France dans les années 1980. Leur but était de réduire la mortalité des pigeons d'un colombophile riverain d'une ligne électrique. Les fameuses spirales rouges et blanches ont alors été imaginées par des techniciens d'exploitation du Réseau de Transport d'Electricité. Elles ont ensuite été fabriquées artisanalement à partir de bandes plastiques chauffées à l'aide d'un décapeur thermique. A la fin des années 80, la fabrication des spirales a été perfectionnée par des industriels.

Avec l'appui du CNA, RTE a fait développer par TE Connectivity (fournisseur de matériels HT et THT) une nouvelle balise, appelée « avisphère », permettant d'équiper les câbles de phase THT, les câbles de fortes pentes et les câbles en zone de neige collante ou givre fort, où la spirale classique ne pouvait pas être installée. C'est une sphère métallique bicolore : rouge pour les oiseaux diurnes et jaune luminescent pour les oiseaux nocturnes. Posée à titre expérimental sur plusieurs tronçons de lignes, ses qualités d'avertisseur pour l'avifaune sont en cours de validation. Ce fut également l'occasion de définir un protocole de mesure de l'efficacité de telles balises. Ce développement d'un nouveau matériel fait partie des engagements de RTE à la Stratégie nationale pour la biodiversité.

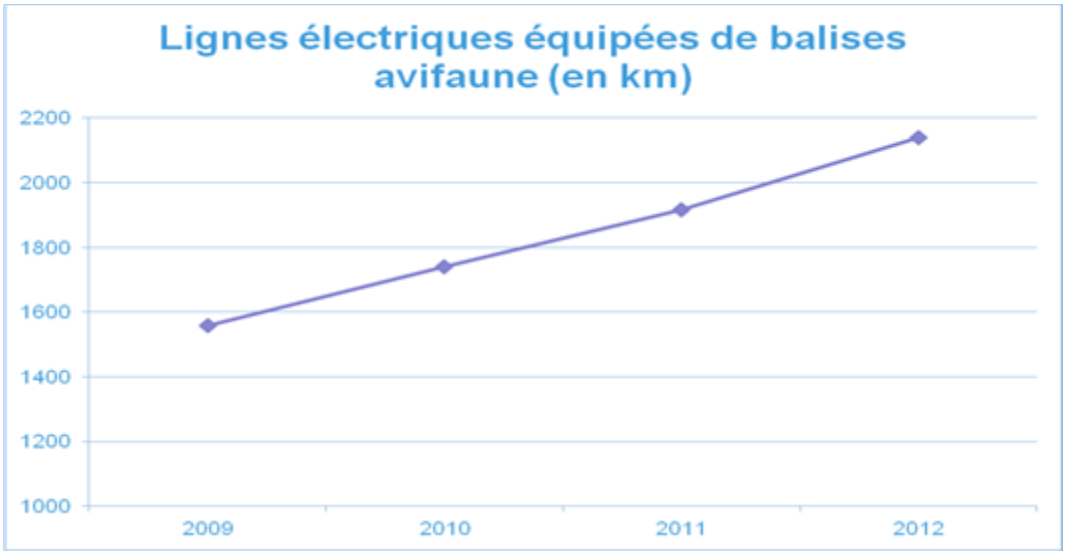


Pour le réseau existant, RTE a procédé à un recensement systématique des lignes qui peuvent être à l'origine d'accidents d'oiseaux par percussion avec les câbles. Il a été mis en œuvre dans les années 90 avec la participation d'une centaine d'ornithologues et d'une trentaine d'associations

ornithologiques. Grâce à cet inventaire, un programme de neutralisation des points les plus dangereux sur le réseau existant pour l'avifaune (appelés Point Sensible Avifaune) a été mis en place permettant de traiter plus de 270 tronçons à risque pour un budget total de 15 M€.



Dans le cadre d'accords avec les associations locales RTE poursuit l'équipement des tronçons dangereux de ligne encore non équipés. En additionnant les longueurs de lignes neuves équipées dés la construction, fin 2012, 2100 km de lignes de transport étaient équipées de balises avifaune



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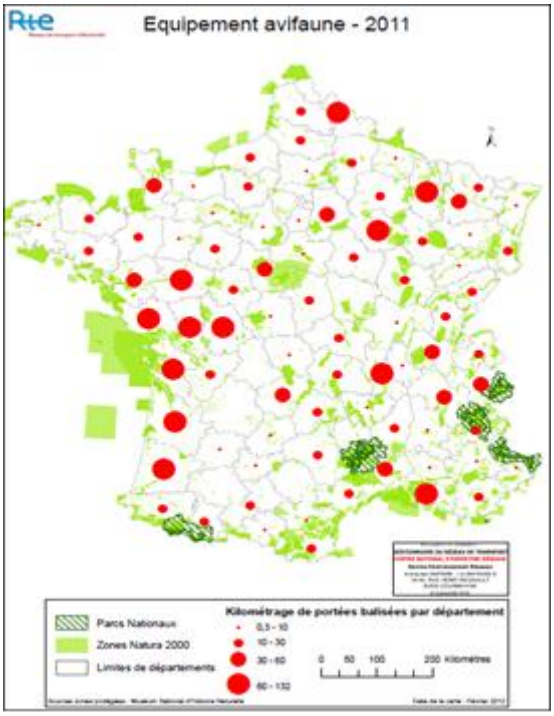


RTE et ERDF travaillent en lien avec les associations de protection de l'environnement depuis le milieu des années 90. Ces travaux se traduisent par la réalisation d'études permettant d'identifier de nouvelles zones à enjeux pour les espèces menacées ou la validation de nouveaux systèmes de protection. Exemples de collaborations en cours :

- Convention de partenariat pour la préservation des rapaces menacés dans trois départements du Languedoc-Roussillon (Aude, Hérault, Pyrénées-Orientales) signée le 3 septembre 2014 entre la Direction régionale de l'environnement, de l'aménagement et du logement Languedoc-Roussillon, le Conservatoire d'espaces naturels du Languedoc-Roussillon, l'Union des associations nationales du Languedoc-Roussillon (Meridionalis) et RTE.
- Convention entre RTE Sud-Ouest, LPO et la Direction régionale de l'environnement, de l'aménagement et du logement Aquitaine afin de favoriser la protection du Gypaète barbu dans les Pyrénées. Cette convention signée en mars 2007 a pour objectif la prise en compte des zones de présence de l'oiseau dans les opérations de RTE (en particulier héliportées) et d'équiper des infrastructures sensibles avec des dispositifs de visualisation expérimentaux (développement de l'avisphère).
- Protection de la Cigogne blanche dans l'Ouest de la France en lien avec la LPO. Celle-ci se traduit par l'installation de plates-formes de nidification à proximité des lignes et par la mise en place d'opérations de baguage de cigogneaux nés dans des nids installés sur des pylônes RTE.

Ce type de plateforme a également été utilisé pour sécuriser les nids de balbuzard pêcheur en Sologne et en Anjou. Ainsi en 2013, 6 plateformes étaient installées qui accueillent 15% de la population nicheuse continentale et 15 jeunes balbuzards ont pu pendre leur envol de ces sites.

Des nichoirs pour faucons pèlerins ont été installés sur les pylônes mettant à profit leur qualité de point haut. Ces pratiques favorables à la biodiversité font partie des engagements de RTE à la SNB

- Installation de balises avifaune dans la région de RTE Sud-Est avec la LPO PACA pour la protection de l'Aigle de Bonelli
- La coordination régionale LPO Pays de Loire et ERDF-Pays de Loire, associent leurs compétences pour une meilleure prise en compte de l'avifaune de la région. La coordination conseille ainsi le distributeur ERDF dans la hiérarchisation de la dangerosité du réseau, permettant d'évaluer les risques d'électrocution et de percussion pour les oiseaux. En 2010/2011, une opération test s'est ainsi déroulée sur le secteur du marais Breton vendéen, visant à prioriser/cartographier les zones de lignes électriques basse et moyenne tension à risques pour

l'avifaune. Ceci permet à ERDF-Pays de Loire de disposer d'informations fiables et actualisées dans la perspective de travaux d'effacement/sécurisation de réseaux dans les secteurs à enjeux pour la biodiversité.

- Convention avec RTE Ouest : Ce partenariat vise à renforcer les relations entre les opérateurs et le réseau des naturalistes, et contribuer ainsi à une meilleure prise en compte des problématiques de chacun. L'objectif est notamment d'améliorer et de sécuriser le réseau et la distribution électrique, en orientant les efforts de protection vers les actions les plus efficaces. Dans le cadre de ce partenariat, sont ainsi mises en œuvre des actions communes autour du programme de baguage, du suivi de la sécurisation des populations de cigogne nichant sur les pylônes, du traitement des points sensibles, de la fête de la nature.
- Installation de balises avifaunes dans la région de RTE Sud-Est avec la LPO Provence-Alpes-Côte d'Azur pour la protection de l'aigle de Bonelli.

Dans le Lubéron, ERDF et la LPO ont installé 300 balises avifaune sur 3 km de réseau. La pose des spirales a été réalisée par hélicoptère. Le coût des travaux est de 60 000 €. Cette opération s'effectue dans le cadre d'une charte de partenariat 2011-2013 en faveur de la biodiversité

c) Encourager l'enterrement des câbles électriques : voir point n°3

d) N'accorder les autorisations qu'après avoir étudié les différents tracés possibles avant et pendant les phases d'aménagement

Devant s'assurer du respect d'une procédure administrative précisément définie, les services de l'Etat, instructeurs des demandes de dérogation aux mesures de protection des espèces, (services chargés de l'environnement au sein des directions régionales de l'environnement, de l'aménagement et du logement ou au sein des directions départementales des territoires) ont pour mission de vérifier si celles-ci répondent aux objectifs de la réglementation.

Ils ont en outre un rôle déterminant dans l'information des publics et organisations concernés. Les porteurs de projet sont appelés à se rapprocher de ces services le plus tôt possible dans l'élaboration de ces projets aux fins d'une intégration la plus précoce possible des enjeux liés aux espèces protégées.

Il s'agit en outre de garder une cohérence entre la procédure de dérogation à la protection des espèces et les autres procédures environnementales auxquelles le projet peut être soumis, telles les études d'impact (projets ou installations classées pour la protection de l'environnement), les études d'incidence « Natura 2000 », les études d'incidence « Loi sur l'eau ».

La pertinence écologique des avis rendus tant par les experts sollicités que par le Conseil national de la protection de la nature ainsi que des décisions prises doivent être bien comprises par les porteurs de projets en vue d'une application optimale des mesures qui en découlent. Les autorités concernées doivent veiller à une explicitation suffisante des motivations de leurs avis ou de leurs décisions.

Enfin, un dispositif de suivi et de contrôle des modalités de mise en œuvre des dérogations doit permettre aux services instructeurs et aux agents chargés du contrôle des dispositions réglementaires relatives à la protection de la faune et de la flore sauvages, de s'assurer du respect des engagements et obligations des porteurs de projets.

L'étude d'impact a pour objet d'évaluer les incidences notables du projet sur l'environnement et la santé, de justifier les choix faits, de présenter les mesures d'évitement, de réduction et de compensation des impacts proposées par le maître d'ouvrage du projet, ainsi que les modalités de leur suivi et l'estimation des dépenses correspondantes. Sont précédés d'une étude d'impact, « les projets de travaux, d'ouvrages ou d'aménagements publics ou privés qui, par leur nature, leurs dimensions ou leur localisation sont susceptibles d'avoir des incidences notables sur l'environnement ou la santé humaine». A cet égard, les projets correspondants à cette définition sont identifiés par le code de l'environnement, en fonction de critères et de seuils décrits dans une nomenclature annexée à l'article R.122- 2 du code de l'environnement.

En outre, seuls les projets soumis à étude d'impact en application de la nomenclature susmentionnée et concourant à la réalisation d'un même programme de travaux doivent être analysés dans une étude d'impact. Le contenu de l'étude d'impact est proportionné à la sensibilité

environnementale de la zone susceptible d'être affectée par le projet, à l'importance et la nature des travaux, ouvrages et aménagements projetés et à leurs incidences prévisibles sur l'environnement ou la santé humaine.

3. Envisager le remplacement des lignes aériennes par des lignes enterrées dans les zones d'intérêt particulier pour les oiseaux

Dans le contrat d'objectif entre l'Etat et EDF, ERDF s'engage à :

- Poursuivre les travaux d'amélioration esthétique des réseaux placés sous sa maîtrise d'ouvrage :
  - en enfouissant chaque année 90% des nouvelles lignes moyenne tension.
  - en réalisant en souterrain ou en technique discrète (isolé-torsadé en façade) 65% des nouvelles lignes basse tension.
- Poursuivre la démarche de résorption des points noirs avec une attention toute particulière dans les zones sensibles, telles que les zones d'importance pour la conservation des oiseaux, les zones naturelles d'intérêts écologiques floristiques et faunistiques, les zones de protection du patrimoine architectural urbain et paysager, les sites inscrits au titre de la loi du 2 mai 1930 ainsi que les parcs naturels régionaux et les zones périphériques des parcs nationaux.
- Communiquer à l'État la longueur de lignes aériennes déposées chaque année.

ERDF gère près de 1,3 million de kilomètres de lignes électriques, en partie aériennes. Ainsi l'entreprise s'attache à améliorer l'intégration des ouvrages électriques dans le paysage, à protéger la biodiversité, à éliminer les éléments potentiellement toxiques et à valoriser ses déchets.

Véritable maillage du territoire, le réseau doit s'intégrer au paysage, sans le modifier ou le dégrader. ERDF a fait de l'enfouissement des nouvelles lignes électriques une règle. Ainsi, en 2012 :

- 98 % des nouvelles lignes haute tension (HTA - 20 000 V) ont été enfouies,
- 79 % des nouvelles lignes basse tension (240 et 400 V) ont été enfouies ou dissimulées.

Par ailleurs, ERDF accompagne les collectivités locales, qui souhaitent dissimuler les ouvrages de distribution sur leur territoire.

Les lignes électriques présentent des dangers pour les oiseaux de grande envergure. Afin de protéger cette faune, ERDF procède à une cartographie des ouvrages dangereux pour ce type d'oiseaux, en partenariat avec des associations.

Avec ses partenaires locaux, associations de naturalistes et de protection de la biodiversité, ERDF met en œuvre les mesures techniques pour réduire l'impact des ouvrages sur les oiseaux de grande envergure (équipements de supports ou de lignes, anticipation d'enfouissement ou de renforcement, etc.).

A la fin 2011, 442 Points Sensibles Avifaune (tronçons identifiés comme dangereux pour l'avifaune par les experts ornithologues avaient été traités, représentant plus de 1900 km de liaisons aériennes équipées de balises avifaune. RTE consolide également au niveau national les principales actions avifaune réalisées annuellement, ce bilan a permis de compléter le tableau de synthèse de deux données supplémentaires (ATHENAS + CPEPESC FC et PNR Ballons des Vosges).

Aujourd'hui, la plupart des nouvelles lignes haute tension (63 kV/90 kV) sont posées par RTE en souterrain (77 % en moyenne sur les années 2009-2011), car les conditions technico-économiques sont rassemblées à ces niveaux de tension pour rendre compétitif et efficace ce type d'option. RTE va bien au-delà des engagements pris dans son dernier contrat de service public avec l'État, qui l'engage à enfouir au moins 30 % des circuits à haute tension à créer ou à renouveler.

En 225 kV, la solution souterraine est réservée aux unités urbaines de plus de 50 000 habitants et aux projets en dehors des couloirs de lignes existants pour des raisons de différentiels de coûts encore importants.

En 400 kV, dans le respect de son contrat de service public, RTE réserve le souterrain à des situations exceptionnelles. Bien qu'il soit techniquement possible de réaliser des lignes à 400 kV en

souterrain – le cas échéant en courant continu – cette solution reste extrêmement onéreuse pour la collectivité et se traduit par un différentiel de plusieurs millions d'euros par kilomètre en coût d'investissement comme en coût complet.

RTE, dans le cadre de son contrat de service public avec l'Etat, a déjà pris des engagements importants pour la mise en souterrain des lignes nouvelles. Ainsi, depuis 2003, RTE a mis en souterrain déjà près de 40% des lignes à haute tension (63 000 et 90 000 Volts) créées ou renouvelées, soit une proportion supérieure à ses engagements (30%). En 2012, **81 % des lignes neuves ou renouvelées 63 000 et 90 000 volts** ont été construites en souterrain. Quant au réseau à 225 000 volts, 13km des 32km de nouvelles lignes ont été réalisés en technologie souterraine.

Pour les lignes de 63 000 à 90 000 volts, la mise en souterrain est possible grâce aux progrès des techniques industrialisées de mise en souterrain. Pour le nombre de kilomètres de lignes très haute tension à 225 000 volts, RTE est classé aujourd'hui au 3ème rang mondial après les Etats-Unis et le Japon. La mise en souterrain pour ce type de ligne n'est pas une innovation. C'est le cas des lignes à Paris depuis 60 ans. Même si cette solution est plus coûteuse, c'est la seule envisageable dans les zones urbaines.

Les possibilités techniques actuelles ne permettent pas la mise en souterrain des lignes 400 000 Volts en courant alternatif sur de longues distances. Lorsque des solutions existent, elles sont limitées, partout dans le monde, à une longueur de quelques kilomètres. Aujourd'hui, seuls 4 km de lignes à 400 000 volts sont enterrés en France.

Exceptionnellement, lorsque les conditions techniques le permettent, RTE envisage l'utilisation de liaison souterraine en courant continu. Une liaison de ce type sera mise en service en 2014 pour la nouvelle interconnexion France-Espagne. Cette technique est toutefois coûteuse, nécessite des stations de conversion aux deux extrémités de la ligne et une resynchronisation au réseau.

La politique de RTE consiste à "déposer" des lignes aériennes existantes sur une longueur équivalente à celle des ouvrages aériens nouveaux et reconstruits de façon à ce que, dans sa longueur totale, le réseau aérien n'augmente plus, voire diminue. Entre 2001 et 2010, celui-ci a été réduit de 1000 km.

Il est à souligner aussi que la mise en souterrain d'ouvrages électriques présente aussi des impacts environnementaux qui doivent être maîtrisés.

4. Procéder à la collecte systématique d'informations sur les collisions et les électrocutions sur les lignes électriques

En novembre 2011, la Mission Rapaces de la LPO a lancé auprès du réseau LPO une enquête afin de réaliser un bilan d'activités pour la période 2007/2011 : conventionnement avec RTE ou ERDF, gouvernance des conventions, réalisation. FNE a lancé en décembre 2011 la même enquête auprès de son propre réseau associatif.

Dépouillement de l'enquête auprès des associations (13 entités LPO et 5 entités FNE ont renvoyé un questionnaire exploitable).

Cette première enquête axée sur un bilan d'activité révèle l'absence presque générale d'un bilan chiffré des réalisations d'équipement, malgré la tenue de réunions de gouvernance. La hiérarchisation des enjeux ne semble pas avoir été réalisée lors de chaque rapprochement des parties, ou plutôt elle n'a pas donné lieu à des études. La présence de nids, notamment de cigognes, sur les infrastructures donne lieu à l'implantation de plateformes, dédiées ou non, de la part d'ERDF et à une expérimentation de cohabitation avec plateforme sur le pylône (en région Ouest) de la part de RTE (cigogne et balbuzard). Les actions de communication, communes, lors d'opérations de travaux semblent bien organisées. Ce retour d'enquête ne peut être une représentation exhaustive de la réalité des travaux réalisés avec RTE et ERDF, un« recoupement » avec les données collectées nationalement par RTE et ERDF est nécessaire.

Données collectées au niveau national : ERDF ne consolide pas au niveau national les réalisations d'équipement avifaune, ni les signatures de conventions locales. Les données sont issues :

- soit d'une cartographie spécifique développée régionalement, cas de la région Méditerranée, permettant un suivi précis des réalisations,
- soit d'un bilan réalisé directement par les équipes Travaux Sous Tension locales à leur initiative. Le niveau national ERDF dispose de manière exhaustive de l'ensemble des articles de la presse régionale parus sur le thème environnemental et notamment de l'avifaune, cette base documentaire a permis de compléter le tableau de synthèse de 2 données supplémentaires (Loiret Nature Environnement et LPO Loire).
- RTE procède à un bilan national annuel d'équipement lié à l'avifaune de ses ouvrages. En 2011, 28 km de ligne ont ainsi été équipés de balises.

La difficulté à recenser les morts accidentelle des oiseaux du fait des ligne a conduit RTE à financer une thèse encadrée par le Museum national d'histoire naturelle avec la contribution du CNA sur l'évaluation de la mortalité des oiseaux par percussion sur les lignes de transport. Cette étude fait partie des engagements de RTE à la SNB.

5. Communiquer au Comité permanent les mesures pertinentes prises ou envisagées dans le cadre de la mise en œuvre de cette recommandation

Les gestionnaires de réseaux (RTE, ERDF et les ELD), les associations de protection de 1818 **la nature travaillent de concert pour améliorer les lignes aériennes. L'Etat français communiquera les nouvelles mesures pertinentes comme par exemple les installations suivantes :**

- **Installer des conducteurs de nouvelle technologie pour les lignes aériennes : une autre solution pour préserver le paysage.** Les travaux communs réalisés entre les gestionnaires de réseaux de transport d'électricité et les fabricants de conducteurs électriques ont permis de faire émerger de nouvelles générations de conducteurs qui, bien que présentant quelques contraintes en termes de coût et de poids, permettent d'augmenter les capacités de transit temporaire (en situation de secours). Pour éviter certaines constructions d'ouvrages, cette nouvelle technologie de conducteurs plus performants a été déployée par RTE depuis cinq ans. RTE a également lancé un vaste programme de recherche sur une nouvelle génération de conducteurs à faible dilatation. L'objectif est d'augmenter les performances tout en diminuant les contraintes de poids et de coût pour pouvoir répondre à l'évolution de consommation électrique et aux nouvelles attentes des citoyens.
- La balise avisphère pour les zones non équipables avec les balises classiques

HUNGARY / HONGRIE

FOLLOW-UP OF RECOMMENDATION NO. 110 (2004) IN HUNGARY

DEFINITIONS USED IN THE QUESTIONNAIRE:

Transmission lines: electricity transmission is the transfer of electricity from generating power plants to high-voltage electrical substations located near demand centres. Large amounts of electricity are transmitted at high voltages (110 - 750 kV in Europe). Transmission lines mostly use high-voltage three-phase alternating current (AC).

Distribution lines: electric power distribution is carrying electricity from the transmission system to the final customers (medium voltage, less than 33 kV).

Electrocution of birds may take place when a bird touches two phase conductors or one conductor and an earthed device simultaneously. There is a strong consensus that the risk posed to birds depends on the technical construction type and detailed design of power facilities. Electrocution mainly occurs on overhead distribution lines

Collisions by hitting overhead transmission and distribution lines cause the death or injury of bird. Species with rapid flight, and the combination of heavy body and small wings restricts swift reactions to unexpected obstacles.

Q1: IN YOUR COUNTRY A NATIONAL GROUP OF EXPERTS ON BIRD SAFETY AND POWER LINES IS:

- not identified yet, but planned for ……/….. (M/Y)
- not identified due to lack of funding
- not identified because no priority/ nobody available to do it
- not identified because of lack of experts
- identified and coordinated by: (please mention name, organisation, e-mail)

In the frame of the Accessible Sky Agreement, a Coordination Board has been set up from representatives of the signatories of the Agreement (ministry responsible for nature conservation, i.e. presently the Ministry of Agriculture, the national transmission company, all distribution companies operating in the country and MME/BirdLife Hungary. The Board is coordinated by the Department for Nature Conservation, Ministry of Agriculture (András Schmidt, for contact details see above).

- in your country regional groups of experts on bird safety and power lines are coordinated by: (please mention region, name, organisation, e-mail)

There is no regional coordination, the coordination is at a national level. Retrofitting projects are coordinated in most cases by the regional national park directorates.

Q2: NATIONAL BIRD MONITORING PROTOCOL IS IN PLACE FOR:

- transmission lines: electrocution (yes/no) – collision (yes/no), if NO it is planned for …../…… (M/Y) Not planned, due to lack of capacity; some transmission lines are monitored in Great Bustard (*Otis tarda*) inhabited areas
- distribution lines: electrocution (yes/no) – collision (yes/no), if NO it is planned for …../…… (M/Y)

Q3: NATIONAL EXPERIENCE ON BIRD SAFETY AND POWER LINES IS RECENTLY PUBLISHED IN:

- publication of government agencies
- scientific publications
- publication of distribution companies

- publication of transmission companies
- other

If there are no recent publications please indicate why?

MME/BirdLife Hungary has produced a publication on bird safety and power lines (Horváth Márton, Demeter Iván, Bagyura János, Kovács András, Lovászi Péter, Nagy Károly, Szügyi Kálmán & Tóth Péter (2010): Madarak és légvezetékek (birds and power lines). Magyar Madártani és Természetvédelmi Egyesület, Budapest. 44 pp.

Q4: DID YOUR COUNTRY SUPPORT THE EXCHANGE OF EXPERIENCE ON BIRDS AND POWER LINES WITH OTHER COUNTRIES?

- is planned for …./ ……. (M/Y)
- not planned
- yes, please specify how:

The Bükk National Park Directorate has been the beneficiary of two LIFE Nature projects co-financed by the European Commission: the first project included exchange of experience on retrofitting with Slovakia, while the second project includes exchange of experience with Slovakia, Romania and Bulgaria.
The MAVIR, (the Hungarian Transmission System Operator Company Ltd.) hosted two International Conferences for utility companies, experts, businesses and NGOs from Bulgaria, Croatia, Romania, Slovakia and Hungary, first on 23rd of November 2011, and on 6th of March 2013 to exchange experiences in nature conservation and power lines.

Q5: VOLUNTARY COOPERATION ON BIRD SAFETY AND POWER LINES BETWEEN INDUSTRY, PUBLIC ADMINISTRATION AND CIVIL SOCIETY:

- is planned for …./ ……. (M/Y)
- not planned
- yes is ongoing, please specify how:

In Hungary a national group of experts on bird safety and power lines has been established through the Accessible Sky Agreement in 2008. The group of experts consists of representatives of the Ministry responsible for nature conservation, presently the Ministry of Agriculture, the NGO MME/BirdLife Hungary and electricity distribution and transmission companies and meets on a regular basis, at least annually. Retrofitting projects are implemented in the frame of the Agreement, mainly at the initatives of national park directorates (a few also by NGOs), in collaboration with electricity distribution and transmission companies.

Q6: DID YOUR COUNTRY RECENTLY SUPPORT RESEARCH PROJECTS OF COMPANIES, SCIENTIFIC ORGANISATIONS AND/OR NGOS?

- No
- Yes, please specify how:

An MME/BirdLife Hungary project was supported by the government from EU co-financing to identify the priority areas for retrofitting projects.

Q7: MONITORING OF MITIGATING MEASURES IS CARRIED OUT:

- Yes by:
  - companies
  - research institutes
  - government agencies
  - nature protection NGOs
  - other
- No

Q8: IS THE IMPACT OF RAILWAY INFRASTRUCTURE ON ELECTROCUTION AND COLLISION STUDIED?

- No
- Planned for: …./…….. (M/Y)
- Yes

If yes, please specify how and where

No, but some data exist on bird mortality along railway power lines, especially in the case of Great Bustard.

Q9: UNDERGROUND CABLING OF DISTRIBUTION LINES IS PROMOTED AS STANDARD TECHNIQUE

- No
- Yes, everywhere
- Yes, but only in priority zones

If only in priority zones, please specify how and where:

Priority areas have been identified for both electrocution and collision risk by the above research project of MME/BirdLife Hungary. Underground cabling has been carried out and is planned in some of the collision risk areas (mainly Great Bustard, waterbird and crane sites) from EU co-financed projects.

Q10: UNDERGROUND CABLING OF TRANSMISSION LINES IS PROMOTED AS STANDARD TECHNIQUE

- No
- Yes, everywhere
- Yes, but only in priority zones

If only in priority zones, please specify how and where:

……

Q11: LEGISLATION FOR NEW AND FULLY RECONSTRUCTED POWER LINES ENSURES THEY ARE BIRD- SAFE BY DESIGN:

- for distribution lines: yes/no
- for transmission lines: yes/no

If yes, please provide weblinks to the legislation.

Legislation for new transmission and distribution power lines and fully reconstructed distribution lines ensures they are bird-safe by design through Article 7 (5) of Act No. LIII of 1996 on Nature Conservation. Weblink: http://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=99600053.TV

Q12: IMPACT OF POWER LINES ON BIRDS IS MONITORED:

- No
- Yes, by Government agencies
- Yes, by research institutes
- Yes, by NGOs

If yes, please provide details on the monitoring protocol.

A monitoring protocol has been elaborated by MME/BirdLife Hungary. National Park Directorates also carry out monitoring activity, especially in the frame of retrofitting projects. The monitoring datasheet and the protocol can be found at: http://mme.hu/utmutato_elektromos_vezetekek_felmeresehez

Q13: PRIORITY POWER LINES TO BE RETROFITTED OR CHANGED FOR BIRD CONSERVATION AND DISTRIBUTION ARE IDENTIFIED:

- Yes
- No
- Planned for: …./…….. (M/Y)

If yes, please provide details on the prioritisation process.

An MME/BirdLife Hungary project was supported by the government from EU co-financing to identify the priority areas for retrofitting projects in 2008. This prioritisation has been used in the planning and implementation of retrofitting projects, including the evaluation of project applications under the Environment and Energy Operational Programme.

Q14: TECHNICAL STANDARDS AND CATALOGUES OF BIRD-SAFE POWER POLE DESIGN AND MITIGATION MEASURES:

- are being developed
- are developed national / regional
- are developed and implemented national/regional

If yes, please provide weblinks to the technical standards and catalogues.

Best available technology guidelines were issued by a power engineering company in 2010 and last updated in 2013 in collaboration with the distribution companies and MME/BirdLife Hungary. The guidelines are distributed by the power engineering company, but are not available on the internet.

ITALY / ITALIE

CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE AND NATURAL HABITATS

Follow-up of Recommendation No. 110 (2004) on minimising adverse effects of above-ground electricity transmission facilities (power lines) on birds

Governmental Report prepared by the Ministry for the Environment, Land and Sea

As already communicated with a note on October 15th 2010, in order to reduce power lines mortality and to adopt the Bern and Bonn Convention recommendations, in May 2008 the Italian Ministry of the Environment, Land and Sea issued "Guidelines for mitigation of impact of power lines on birds" ("Linee guida per la mitigazione dell'impatto delle linee elettriche sull'avifauna"). The publication – only in Italian – is available on Ministry web site (http://www.minambiente.it/export/sites/default/archivio/allegati/biodiversita/piani/linee_guida_linee_elettriche_avifauna_new.pdf). These Guidelines provided technical protocols useful to make mitigation actions and suggested practical solutions to reduce power lines mortality risk. In the Guidelines, in particular, were illustrated useful tools for mitigating collisions and electrocution risk in operation lines (safe pilons, insulators and cables to be used especially in new lines) and were indicated procedures to reduce casualties in operation/planned lines.

With regards to Recommendation No. 110 (2004), in order to minimise adverse effects of above-ground electricity transmission facilities (power lines) on birds, in the last years on the Italian territory the following initiatives were developed.

1. **Guidelines produced by ISPRA** (Istituto Superiore per la Protezione e la Ricerca Ambientale, the Italian Institute for Environmental Protection and Research) in 2011 on the development of linear infrastructures, dealing with the fragmentation of the territory deriving from the linear infrastructures address and best practices for the impacts prevention and reduction:

   http://www.isprambiente.gov.it/files/pubblicazioni/manuali-lineeguida/mlg76-1-2011.pdf (only in Italian)

   This document is part of the Environment, Landscape and Infrastructures ISPRA project, and it is the final result of all activities that, in 2008, brought to the publication of the ISPRA 87/2008 report "Protection of the ecological connectivity of the area and linear infrastructures". Its goal is to offer a technical instrument to those who work in the linear infrastructure design sector, in the strictly connected field of the environmental intervention design and in the design assessment field. The authors are representatives of the most important national companies working in the above mentioned fields and of associations committed in the safeguard of the territory biodiversity. Their aim is to convey the basic concepts and the policy necessary to reduce the environment fragmentation and to provide all necessary addresses to support those interventions that take in consideration the possible environmental and ecological effect on the territory. These interventions will thus be supported as they aim to reduce and/or compensate those effects, in accordance with the guidelines of the Biodiversity National Strategy.

   http://www.isprambiente.gov.it/en/publications/handbooks-and-guidelines/Environment-Landscape-and-Infrastructures-II

2. The private company **Terna** was involved in several activities to safeguarding biodiversity, along with areas of intervention and initiatives deployed by the company to ensure the successful achievement of that goal. In particular, Terna's commitment for the protection of biodiversity is divided into three aspects:

   - Design and construction of electricity lines
   - Mitigation of the impact of existing lines

- Alternative uses of electricity lines: the Initiative "Nidi sui tralicci" ("Nests on Pylons")

For details: http://www.terna.it/default/home_en/sustainability/environment/Biodiversity_and_electricity_lines.aspx

Their attention to biodiversity is particularly high when the lines cross through protected areas. According to Terna, considering all of the types of protected areas defined by the Legislator (national and regional parks, national and regional reserves, SCI – Sites of Community Interest, SPA – Special Protection Areas, that together cover 22% of the Italian territory) and eliminating the overlapping areas, 10% of Terna's electricity grid (5,570 km) crosses a protected area for stretches varying from a few hundred meters to some tens of kilometers.

In December 2008, Terna signed an **agreement with LIPU - Lega Italiana Protezione Uccelli,** Italian partner of BirdLife International with the aim of investigating the interaction between the high voltage power lines and birdlife to verify the real impact the National Transmission Grid (NTG) might have on sedentary or migratory birds and also to investigate possible mitigation actions.

http://www.terna.it/default/home_en/sustainability/environment/Biodiversity_and_electricity_lines/agreement_with_LIPU.aspx

Seven test areas were identified throughout the country's territory. Each of these is affected by the presence of electricity lines and by the migration, stop over or breeding of the birds. More precisely these areas, classified as ZPS – Zones of Special Protection and IBA - Important Bird Areas, are:

- the Parco Nazionale del Gran Paradiso;
- the Parco Nazionale dello Stelvio;
- the Carso Triestino;
- the Valli di Comacchio;
- the Monti della Tolfa;
- the Strait of Messina;
- the Natural Reserve of the Lake of Montepulciano, directly managed by LIPU.

After the monitoring, which lasted 16 months, the study demonstrated low collision values in four of the seven areas studied: Parco Nazionale del Gran Paradiso, Carso Triestino, Monti della Tolfa and Parco Nazionale dello Stelvio. In these last two areas, in particular, there were no findings during the monthly surveys conducted that year.

Low levels of collision were registered in the Strait of Messina area, where a concentration of thousands of migratory birds can be found: this fact, together with the environmental (thick vegetation) and meteorological conditions (fog and wind) detected, calls for the adoption of a more specific experimental protocol.

As for the areas of Mezzano and Lake Montepulciano, humid and characterized by an intense bird passage, data demonstrated the existence of a collision risk (estimated respectively at 1.1 and 3.4 collided birds per kilometer of lines/year). Terna's commitment is to carry out an in-depth study of the phenomenon to access the real extent of the risk.

Near the lake in Montepulciano and in the Mezzano area – which are wet areas subject to migratory flows – increased risks seem to exist for birds, suggesting additional observations also with new experimental approaches, for a correct risk assessment and identification of possible mitigation measures. The study conducted on the Strait of Messina stressed the need of a more detailed monitoring with the aid of appropriate technology, such as the use of radar.

Consistent with the "Guidelines for the mitigation of the impact of the electricity lines on birdlife" defined by the Ministry of Environment, the study conducted by Terna and LIPU, presented at Budapest in April 2011 during the meeting organized by Birdlife International

"Power Lines and Bird Mortality in Europe", intended to provide a valid contribution to identify suitable measures to mitigate the real impact of the high voltage electricity lines on birdlife.

The summary of the publication "First data on assessment of bird collision with high voltage utility lines in Italy" (produced with LIPU in May 2011) is available at http://www.terna.it/LinkClick.aspx?fileticket=BazB6wu%2bXfE%3d&tabid=5258

In January 2009, Terna signed a three year **memorandum of understanding with WWF** for a sustainable development of the electricity grid.

http://www.terna.it/default/home_en/sustainability/environment/Biodiversity_and_electricity_lines/agreement_wwf.aspx

The focus was twofold:

- Reduction of the environmental impact of the large electricity transmission lines;
- Biodiversity Protection.

The agreement intends to integrate environmental criteria in the planning phase of electricity grid development and harmonize these activities with the conservation strategies promoted by the organization for the conservation of nature. Furthermore, the agreement provided for action to be undertaken in three protected areas, with distinct objectives according to the project:

- WWF Oasis Padule Orti Bottagone: improve the monitoring system of the species;
- WWF Oasis Stagni di Focognano: mitigate the impact on birdlife;
- WWF Oasis Torre Salsa: improve the area's usage.

In July 2013 Terna and WWF renewed their strategic partnership. Among the agreement's news contents: the start up of an Action Plan for the sustainable planning of electrical lines and to reduce the interference of the electrical networks on biodiversity.

Terna's long-standing **partnership with Ornis Italica**, a scientific bird life association, whose volunteers monitor the **"Bird's Nests on Electricity Pylons" project**.

http://www.terna.it/default/home_en/sustainability/environment/Biodiversity_and_electricity_lines/nets_pylons.aspx

In collaboration with the Ornithological Association Ornis Italica, 550 nest boxes suitable for bird nesting were placed on Terna's pylons in the past few years (over 300 nest boxes were placed in Lazio, 120 in Emilia Romagna, 80 in Lombardy, 30 in Puglia and 14 in Umbria).

From the very beginning, these artificial nests have attracted numerous birds. Over time, the presence of raptors increased further: inspections found that 94% of the nest boxes were occupied by couples of kestrels, a small hawk species used to living in a man made environment.

The monitoring of artificial nests was carried out by Ornis Italica's ornithologists, who, in 2013, inspected nearly 10% of the over 500 nests placed on the grid's pylons in Lazio, Tuscany, Umbria and Emilia-Romagna. In Upper Lazio, in addition to the kestrels, the European Roller confirmed its presence, occupying all of the 25 available nests (there were 26 in 2012, 25 in 2011), from which 69 young took flight, of which 38 were tagged.

In collaboration with Ornis Italica, Terna continues to support the **"Birdcam" project**: cameras were installed on artificial nests allowing the on-line watching of the birds during the breeding period, on Terna's Web site and on www.birdcam.it. The project is of specific scientific value, because it allows researchers who operate remotely to watch the animal's behavior.

3. Lines' removal actions in the Natural Reserve (SCI) Monticchie (Province of Lodi): http://www.monticchie.it/images/docs/RIMOZIONE_DELLE_LINEE_ELETTRICHE_E_DEI_TRALICCI.pdf (in Italian)

4. Project started in 2010 for the reduction of the environmental impact of the large electricity transmission lines, dangerous to bird species, in Valtellina (Province of Sondrio) and the production of a brochure:

   http://www.google.it/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CC0QFjAB&url=http%3A%2F%2Fwww.provincia.so.it%2Fdownload.asp%3Ffile%3D%2Famministrazione%2Fdelibere%2Fgiunta%2Felenco%2FdeliberaG_107-2010%2FA1_deliberaG_107-2010.pdf&ei=2PT-U6PYGsn-PKWpgbgF&usg=AFQjCNGMWd6dcNtliQeSIZDamDpOp_m2BQ&sig2=oe2Ks78kO3IkTel8tUu06g&bvm=bv.74035653,d.ZWU (only in Italian)

5. Plan for the assessment and the reduction of the risk of electric lines' impact in the Regional Natural Park of Monte Corno (Bolzen) – June 2011, available at: http://www.provinz.bz.it/natur-raum/download/RELAZIONE_L.E.pdf (only in Italian)

6. LIFE+ project "Save the flyers" http://www.lifesavetheflyers.it/index.php?lang=en

   In the context of this project 72 km of lines were secured: 37 km in the Park of Frasassi (Province of Ancona) and 35 km in the higher part of the Albegna Valley (Province of Grosseto).

7. Project LIFE+ TEN (Trentino Ecological Network): a focal point for a Pan-Alpine Ecological Network, accessible at the following website. http://www.lifeten.tn.it/actions/demonstrative_actions/pagina8.html

   This project in particular foresees the action C.13 "Demonstrative action of species preservation: protection of birds of prey from electrocution" for electric lines in Adige Valley (Province of Trento).

8. LIFE+ TIB (Trans Insubria Bionet) project on "Habitat connection and improvement along the Insubria ecological corridor between the Alps and the Ticino Valley":

   http://www.lifetib.it/En/index.html

   In particular with regards to actions for securing electric lines in the Province of Varese.

9. Agreement between ENEL (an Italian company providing energy) and the National Park of Gargano for improving 2 km of transmission network in 2012: http://www.enel.it/it-IT/media/comunicati/comunicati_regione/abruzzo/release.aspx?IdDoc=1653927&WT.rss_f=enel_notizieterritorio&WT.rss_a=%28Puglia%29%20GARGANO:%20ENTE%20PARCO%20ED%20ENEL%20INSIEME%20PER%20LE%20CICOGNE%20BIANCHE%20DI%20LAGO%20SALSO&WT.rss_ev=a (only in Italian)

10. The managing entity of the Natural Reserve of Salina di Priolo (Province of Siracusa) foresees to use PO-FESR 2014-2020 funds to implement a project for burying a section of a kilometer of electric line into the reserve (interventions not started yet).

LIECHTENSTEIN / LIECHTENSTEIN

AMT FÜR UMWELT
PRINCIPALITY OF LIECHTENSTEIN

Council of Europe
Véronique de Cussac
Bern Convention
Biodiversity Unit
F-67075 Strasbourg Cedex

Your letter	Reference	Contact	Vaduz
27.02.2014	9383	muol	31.3.2014

FOLLOW-UP OF RECOMMENDATION NO. 110 (2004) IN LIECHTENSTEIN

There are a few major above ground power lines in the Principality of Liechtenstein:

1. 220/380 kV high voltage power line in the community Balzers

The first above ground power line is located in the south of the country and has an approximate length of 2.5 km. It is owned by the Swiss company "Swissgrid AG". During the last years, neither electrocuted birds nor birds harmed or killed by collisions with the towers could be observed. This power line will be transferred to the underground within the next three years. Corresponding preliminaries just stared at the beginning of 2014.

2. 110 kV voltage power lines in the communities Eschen, Schaan and Triesen

The next three above ground power lines are located in the middle of the country and have in total an approximate length of 7 km. These power lines are run by the national electric service company "LKW". Since 2002 Liechtenstein did not built new above ground power lines. All existing power lines have isolators of more than 60 cm length. Furthermore, protective installations have been applied to the top of the towers, which hinder birds from landing near the isolators. A few new "metallic triangles" were installed on towers especially for white storks in 2013. It is planned to replace all above ground power lines by underground lines over the next few decades.

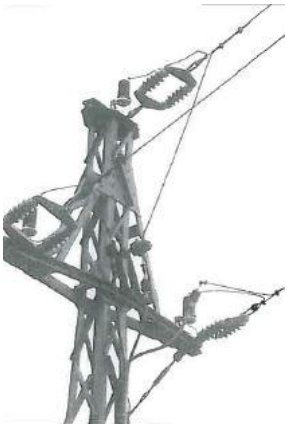
3. 10 kV mean voltage power lines in the communities Schaan, Eschen and Planken

These two above ground power lines were also located in the middle of the country and are run by the national electric service company "LKW". The above ground length of this type of power lines is in total about 5 km. All isolators have a length of more than 60 cm and all towers have installations providing birds from landing near the isolators. Neither electrical groundings in the network (which can indicate birds touching the line) nor dead birds were observed over last few years along the power lines.

4. Railway power line (15kV)

The last above ground power line is located from the north to the middle of the country. It is the longest above ground power line in Liechtenstein measuring approximately 9.5 km. The power line serves as electrical power supply for the railway. The power line and the railway through Liechtenstein are run by the Austrian national railway company (ÖBB). Liechtenstein has no information about bird protection actions on this power line.

In general, Liechtenstein has only a few kilometres of above ground power lines and on these lines the recommendation No. 110 on minimising adverse effects of above-ground electricity transmission facilities on birds is implemented relatively well. Nonetheless, there are some punctual places in the electricity network, that could be improved. One example is the final tower of 10 kV power line from Schaan to Planken, where a small risk for touching and electrocution exists because of the three over-voltage conductors, installed at the top. These deficits are known and will be corrected continuously.



Picture 1: Final tower of 10 kV power line from Schaan to Planken. This tower is still a risk for

For further questions please contact me by e-mail (oliver.mueller@llv.li).

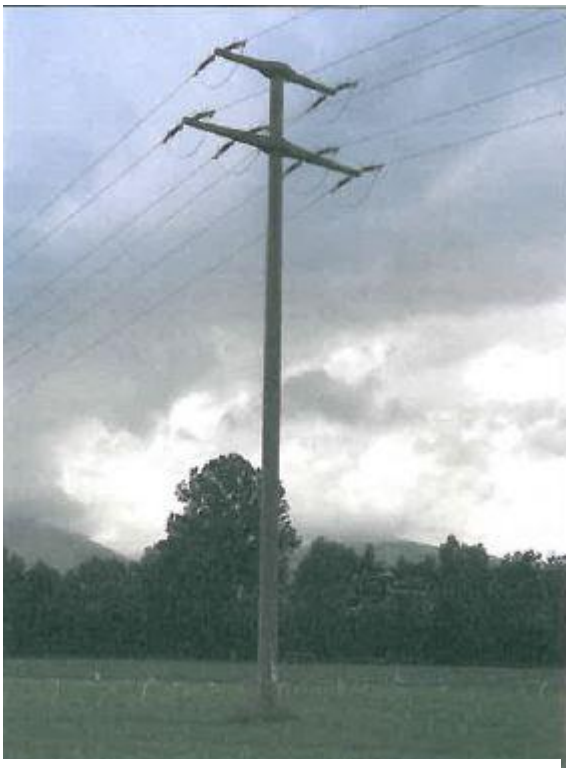
Oliver Müller
Head of Bureau Nature and Landscape

Annex:

Picture 2: High voltage power line in Balzers. This power line will be transferred to the underground within the next three years.

Picture 4: Railway power line run by the Austrian national railway company.

Picture 3: 110 kV power line from Schaan to Eschen. “Metallic triangles” were installed in 2013 to hinder birds from landing.



Picture 5: 10 kV power line from Schaan to Eschen. Isolators are longer than 60 cm.

MALTA / MALTE

Malta's report on the Recommendation No. 110 (2004) of the Bern Convention Standing Committee on minimising adverse effect of above-ground electricity transmission facilities (power lines) on birds

GENERAL COMMENTS

1. Malta does not have substantial above ground power transmission infrastructure capable of causing significant detrimental effect on birds.
2. It has been noted that the Recommendation focuses too narrowly on wild birds without having regard to the potential consequences on other equally important environmental considerations. This is of concern from an environmental point of view.
3. The document encourages the underground location of cables (e.g. in areas of exceptional high interest for birds, particularly in protected areas, Natura 2000 sites, etc.) in preference to overhead installation. This is generally considered positive in principle, and it would furthermore achieve synergy with additional environmental concerns e.g. minimisation of adverse impact on the natural/rural landscape.
4. However, additional considerations may also be relevant, depending on the site context:
   - The impacts of underground interventions. The type and extent of engineering works required to place transmission lines underground is generally less easily reversible, and (depending on intensity of works and on the environmental characteristics of the site) may itself have significant adverse environmental impact in terms of physical destruction and degradation of the affected natural environment.
   - Robustness of project justification. Before being forced into damage-limitation choices between alternatives that may both have adverse impacts, the question of whether there really is an overriding need/benefit in installing the infrastructure in that particular location also needs to be asked, and should not be taken for granted.
   - Wider/consequential implications of the project. When assessing the potential impacts of the project, it is important to ensure that this duly takes into account the wider picture, including:
     - required ancillary interventions - e.g. associated installations and facilities, creation of temporary access roads, construction-phase demands (e.g. contractors facilities and equipment storage areas) during construction, renovation, maintenance and/or decommissioning phases
     - the ultimate motivation of the project: is the project actually intended to support other interventions which per se introduce important conflicts with the site environment?
     - indirect implications: Once the project is in existence, will this indirectly invite new/intensified development pressures? Will it render the area more accessible to the extent of introducing important disturbances (e.g. vehicular tramping, en-masse disturbance, etc). Will it render the site an important infrastructural node such that high-impact upgrading works may need to be directed here in future?
5. The following is an overview of some of the most frequent types of impacts that can occur:

5.1 *Habitat loss, degradation or fragmentation*

Underground cables may require the clearance of land and the removal of surface vegetation (often referred to as direct land-take). Through this process existing habitats may be altered, damaged, fragmented or destroyed. The scale of habitat loss and degradation will depend on the size, location and design of the project and the sensitivity of the habitats affected. It is important to note that, whilst the actual land take may be comparatively limited, the indirect effects could be much more widespread, especially where developments interfere with hydrological regimes or geomorphological

processes, and water or soil quality. Such indirect effects can cause severe habitat deterioration, fragmentation and loss, sometimes even at quite a distance from the actual project site. The significance of loss also depends on the rarity and sensitivity of the habitats affected and/or of their importance as a feeding, breeding or hibernating place for species.

5.2 These impacts can often be minimised or even avoided altogether through a combination of the following measures:

- Confining underground trenching/ducting works to the 'footprint' or immediate verges of existing roads or their ancillary structures, avoiding damage to natural habitats and scarring of the landscape especially where the terrain (e.g. rocky land) is not amenable to full and effective restoration or natural recovery. Better still, adequate provision for reasonably foreseeable ducting requirements should be integrated directly into the design of the road structure to avoid the impacts and disruption of later retrofitting, as well as to pre-empt pressures for less environmentally-friendly alternatives.
- Where this is not possible, at least works should adopt least-impact solutions (e.g. following the land contours, and avoiding known habitats and physical features worth conserving).
- In all instances, proper works methodology and "construction-phase" management should be ensured (e.g. use of suitable machinery to minimise physical impact on the terrain; ensuring that temporary disturbance is limited to the barest minimum area; confinement, bunding/containment and hoarding as relevant; limitation of works to sunlight hours to minimise error/accident margins and nocturnal disturbance of fauna and avifauna; limiting light and noise pollution; etc.)

5.3 *Disturbance and displacement:*

Disturbance of species from their habitual breeding, feeding or resting sites as well as along migration routes can lead to displacement and exclusion, and hence loss of habitat use. The species may be displaced from areas within and around the project site due for instance to increased traffic, presence of people as well as noise, dust, pollution, artificial lighting or vibration caused during or after the construction works. Same measures as above should be applied accordingly.

5.4 *Cumulative effects*

5.4.1 The cumulative effects of such projects can often be very important and also need to be assessed carefully. They may arise when several energy infrastructures are present within an area, or when an energy infrastructure project takes place in the same area as another type of plan or project (e.g. other industrial developments). The cumulative effect is the combined effect of all these activities taken together. It may be that one energy infrastructure project, on its own, will not have a significant effect, but if its effects are added to those of other plans or projects in the area their combined impacts could become significant. Therefore it is recommended that cumulative effects are also predicted and assessed in the early stages rather than merely as an 'afterthought' at the end of the process when remedial measures (e.g. project redesign and/or re-routing of cables) may be too late or unrealistic.

5.4.2 Against this background, the potential effects are very much dependent on the design and location of the specific energy infrastructure in question, the sensitivity of the relevant site and habitats/species/environmental features present in the area and the cumulative effects. In this regard, whilst proactive general good-practice guidance is very important, this should not be seen as a blanket one-size-fits-all approach, and it is still essential to examine each project on a case-by-case basis. Depending on the type and severity of the impacts identified vis-à-vis the specific site under consideration, it may sometimes be possible (or necessary) to adjust the proposal and introduce certain tailor-made design measures to pre-empt, remove or reduce these potential impacts to a non-significant level so that the proposed project can be approved. If this is not the case, then there may be a case for rejecting the project or relocating it to a more appropriate location. If alternative locations are not feasible and the project is essential nevertheless, mitigation measures should be focused on the sites' conservation objectives and the elements on which the integrity of the site depends, so that the least damaging option can be pursued.

5.4.3 Mitigation measures can involve modifications to the size, location, design and configuration of various aspects of the energy infrastructure plan or project. Or they can take the form of temporal adjustments during the construction and operational phases (e.g. avoiding construction works during the breeding season), as relevant.

6. Specific Comments

6.1 Point 4 in the main text of the document highlights the need *to "systematically collect information with respect to collisions and electrocutions on electricity transmission lines"*. At this stage, it is important to stress that project-level environmental assessments (e.g. EIAs) are intended to systematically evaluate the potential impacts of site-specific proposals on the environment with a view toward effective and environmentally-considerate decision-making. Therefore, whilst it is appropriate that data gathered for environmental assessment should be utilised efficiently for wider purposes as well, this should not become the primary purpose of the assessment, and the assessment should not be burdened with data gathering exercises that are not necessary for the decision-making process. In these regards, any ecological and survey field work required for non-assessment purposes needs to be addressed separately.

6.2 Moreover, it is to be noted that Electrical Transmission projects would be subject to EIA screening to determine whether such proposals fall within the list of projects (Schedule IA) of the EIA Regulations (Subsidiary Legislation 504.79[1]). Category I projects would automatically qualify for an EIA, whereas proposals that fall under Category II or under Section 9 (Developments affecting natural and cultural heritage) would be subject to EIA screening in accordance with Schedule IB of the same Regulations to determine whether the project is likely to have significant effects on the environment. The criteria listed under Schedule IB include considerations vis-à-vis the location of the projects which includes, among others, wetlands, nature reserves and areas classified or protected under legislation, designated special protected pursuant to the Habitats Directive and the Birds Directive.

6.3 When a development proposal of this nature would qualify for an EIA, tailor-made terms of reference are drafted in consultation with relevant agencies of government, local council, environmental NGOs and internal consultees. Where wild birds are likely to be significantly affected by a proposal, such studies are requested through the EIA that include baseline studies, assessment of impacts, mitigation measures and proposals for post-project monitoring.

6.4 It is important to highlight out that other equally-important environmental assessments (e.g. environmental screening of development consent proposals) could also be effective tools to assess certain energy infrastructure -related impacts. Environmental screening of development consent proposals may still require the submissions of specific technical studies. Therefore it is recommended that the document also refer to environmental assessments of projects in general, whilst highlighting Environmental Impact Assessment (EIA), Appropriate Assessment (AA) and Strategic Environmental Assessment (SEA) as examples.

6.5 Point A of Section A (Appendix 1) states that *"Thorough environmental assessment should be undertaken for all electricity transmission lines that have the potential for damaging effects on wild birds or in areas where there is uncertainty as to the potential effects"*. Also, **point 2 B** in the main text highlights the need to make *"use of state-of-the-art recommended technical standards for bird safety for new and retrofitted facilities"* and Section C in Appendix 1 states that *"Mitigation measures should be undertaken on existing power poles..."*. It is suggested that the document should make a clear distinction between measures intended to be retrofitted to existing transmission lines and those measures (including environmental assessments) intended for new proposed transmission lines. The main issue is that detailed project-level environmental assessment cannot be relied upon in respect of existing transmission lines that are not subject to any permitting process (in which case, ancillary environmental assessments such as EIA, Appropriate Assessment or direct environmental assessment via the mainstream development consent process, would be triggered as relevant) or a plan-making process (where an SEA may be required).

[1] http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=11556&l=1

6.6 Moreover (and especially in certain sensitive locations), out-dated and substandard infrastructure may be incompatible with the surrounding environment such that there is an overriding case for its decommissioning, relocation, overhaul or replacement with more environmentally-friendly designs or technologies. This is especially true vis-à-vis overhead wiring and supporting masts/poles. In this regard, the document should not encourage or emphasise retrofitting as a necessarily optimal default solution - also noting that, on one hand, this may minimise the intensity of installation works, but on the other hand it would lengthen the permanence of any environmentally-incompatible structures on site. Instead, the document should require that the most environmentally-optimal solution be determined for the specific site context, such that the decision-making can then be guided accordingly as relevant.

MOLDOVA / MOLDOVA

REPORT OF THE REPUBLIC OF MOLDOVA

ON THE SITUATION REGARDING THE IMPLEMENTATION OF THE PROVISIONS INCLUDED IN RECOMMENDATION NO. 110 (2004) ON MINIMIZING ADVERSE EFFECTS OF ABOVE-GROUND ELECTRICITY TRANSMISSION FACILITIES (POWER LINES) ON BIRDS

The Government (Decision No. 86 from May 29, 2014) has been approved the Law on Environmental Impact Assessment

This Law transposes partly Directive 2011/92/EU of the European Parliament and of the Council of December 13, 2011 on the assessment of the effects of certain public and private projects on the environment (codification) published in the Official Journal of the European Union, Issue L 26, of January 1, 2012.

The purpose of this Law is to create a legal framework for operation of a mechanism for environmental impact assessment of certain public and private projects or planned activities to ensure prevention or reduction of adverse impact on the environment or human health at their earliest stages.

The environmental impact assessment shall identify, describe, and assess in an appropriate manner, in the light of each individual case, the direct and indirect effects of a planned activity on the following factors:

a) Human beings, fauna, and flora;
b) Soil, subsoil, water, air, climate, and the landscape;
c) Material assets and the cultural heritage;
d) The interaction between the factors referred to in points a)-c) and long-term and cumulative effect thereof.

Under Appendix no 1 of Law *„Construction of overhead electrical power cables with a voltage of 220 kV or more and a length of more than 15 km”* is a subject of a mandatory manner to the environmental impact assessment.

„*Industrial installations for the production of electricity,* steam and hot water (not included in Appendix no 1, with a power ranging from 100 to 300 megawatts) and „Industrial installations for the transportation of gas, steam and hot water; c*onveyance of electric energy through overhead cables* (not included in Appendix no 1, but situated on the territory of state-protected areas)” can be found in the List of the planned activities requiring the identification of the need for the conduct of the environmental impact assessment (Appendix no 2 of Law).

This law shall enter into force 6 months after the date of publication (Published on July 4, 2014 in *Monitorul Official*, Issue 174-177, Article 393).

MONACO / MONACO

COURRIEL DU 23 AVRIL 2014

Cette recommandation n'est pas applicable en Principauté car nos lignes électriques ne sont pas aériennes.

Céline VAN KLAVEREN – IMPAGLIAZZO

Secrétaire des Relations Extérieures

Direction des Affaires Internationales

Principauté de Monaco

POLAND / POLOGNE

With reference to the information on the implementation of Recommendation no. 110 of the Standing Committee, adopted in order to minimize adverse effect of above ground electricity transmission facilities (power lines) on birds, sent on December 9, 2011, General Directorate for Environmental Protection presents the following information on further actions undertaken in the aforementioned matter.

In 2013 r. General Directorate for Environmental Protection commissioned a document „The impact of overhead power lines of medium and high voltage, including overhead railway lines, on birds". The document has been published in 2014.

The aim of the study was to discuss the effect of electricity transmission facilities on avifauna. In the process of preparing the document, available scientific literature has been reviewed and the documentation from environmental impact assessment reports for projects regarding construction, modernization and functioning of electricity power lines and overhead railway lines, has been analyzed. The publication contains among others, characteristics of effects of power lines on birds, recommendations for the procedures of assessing the environmental impact of power lines on birds and recommendations for changes in law regulations regarding protection of birds interacting with electricity transmission lines.

Moreover, the programs for the protection of White Stork, mentioned in the information from December 9, 2011, are being continued. Within the programs, the White Stork nests are being protected through translocating or elevating the nests located on power poles or isolating sections of power lines closest to the nest. The undertaken actions significantly reduce the risk of electrocution of the animals and allow the Storks to raise nestlings safely. The entities running the projects include regional directorates for environmental protection, power companies and environmental organizations.

It should also be mentioned, that independently of the document commissioned by General Directorate for Environmental Protection, two scientific articles have been written on the matter: "The impact of power lines on the avifauna and the methods of its assessment" (Pakuła M., Kniola T. 2013) and "Birds and overhead powerlines. Types of interactions, their reasons and effects for avian populations" (Kustusch et al. 2013), which may reflect a raise in polish scientists' interest in the matter of interactions between birds and power lines.

PORTUGAL / PORTUGAL

Recommendation Nº110(2004) of the Standing Committee on minimizing adverse effects of above-ground electricity transmission facilities (power lines) on birds

Report by Portugal

Implementation of this recommendation in Portugal is assured through the existing legal framework, guidance produced and cooperation with electric energy distribution companies.

Decree-Law 140/99, which transposes Habitats and Birds Directives into national law, provides general natural habitats, species and birds protection. According to it, inside Natura 2000 (N2000) sites the construction of electrical infra-structures depends on the advice of the national nature conservation authority. Furthermore, according to provisions of art 6 of Habitats Directive any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of this Directive, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned.

Guidance for the implementation of new power lines, concerning medium and high voltage, has been prepared in 2008 by the national nature conservation authority, and subsequently updated (2010).

Strong cooperation has been developed between electric energy distribution company (EDP-D), nature conservation authority (ICNF) and NGO (QUERCUS, SPEA/Birdlife and LPN). Cooperation protocols have been established since 2003, aiming to:

- characterize the impact of power lines in Portugal;
- search for "black spots" of bird mortality;
- minimize the impact of power lines on birds;
- prevent future impacts on new lines.

❖ **Specific information to the recommendation´s parts 1 and 2 (measures):**

The above mentioned guidance establishes a zonation of the territory of Portugal-mainland according to sensitivity to bird risk of electrocution and collision based on available knowledge on priority areas for feeding, breeding, local concentration and migration of birds (High Critical, Critical and Sensitive areas). Major concern is given to species considered to be particularly sensitive to power lines (Appendix I) listed as endangered species on the national redlist.

This guidance also defines technical measures to minimize electrocution and collision risk. These solutions concern electric poles typology, cable insulation, mounting of bird flight diverters and anti-perching devices.

Under the above mentioned protocols with electric energy distribution company, retrofitting of selected power lines according criteria of dangerousness for birds has been performed, since 2005. It totalized 462 km in 2013.

Also some specific projects included measures to reduce bird mortality from electric transmission facilities:

- *Conservation of Great Bustard, Little Bustard and Lesser Kestrel in the Baixo Alentejo cereal steppes. LIFE07 NAT_P_000654 (2009-2012)*

The project aimed at, among others, minimizing the impact of medium voltage power lines in the Castro Verde Special Protection Area (SPA). This SPA comprehends the most important region for the conservation of steppe birds in Portugal, therefore being urgent to implement correction measures

to the power lines. Under this project, the League for the Protection of Nature (LPN) worked together with EDP-Distribution in applying anti-collision and anti-electrocution measures in 40km of power lines. With the achievement of this goal, the Castro Verde SPA is currently the area of N2000 with the largest extension of corrected power lines in the country.

The measures applied to minimize the danger of electrocution of birds were the covering of supports of the power lines through the application of cable looms and coatings and by converting horizontal conductors into the vertical position. In what concerns collision preventive measures, the conductor cables were signalized using different types of devices that increase its visibility.

While the anti-electrocution measures had already shown positive results in previous studies, the anti-collision measures applied until now have revealed weak results, not reaching the goal of achieving a significant decrease on the mortality of sensitive species on the signalized power lines. Thus, in the scope of this project, a study was conducted in order to determine the effectiveness of three new devices recently made available on the market: the Bird Flight Diverters of the double spiral type, the Firefly Bird Flappers of the flags type and the Firefly Bird Flappers of the rotating type.

Monitoring of around 20km of power lines was conducted during three consecutive years.

- *In 2005, a collaboration protocol between transport of energy company (REN) and NGO (CEAI) was celebrated to minimize the impact of high voltage power lines on Bonnelli's eagle.*

- *This action was followed by LIFE06 NAT/P/000194 "Tree Nesting Bonelli's Eagle - Conservation of Tree Nesting Bonelli's Eagle in Portugal" (2006-2011) project, that included a study on impact of power lines on this species.*

- *In Madeira Region, the impact of medium-voltage powerlines on most vulnerable species (namely Scolopax rusticola, Oceanodroma castro and Bulweria bulwerii) was assessed in the period 2009-2012.*

- *In Azores Region, the impact of medium-voltage power lines on birds has been assessed under project "Linhas Elétricas e Avifauna nos Açores" between SPEA Birdlife and Empresa de Eletricidade dos Açores (electric energy distribution company).*

❖ **Specific information to recommendation´s part 3 (underground lines in sensitive areas):**

In mainland, according to the above mentioned guidance, the first recommended approach is a tracing study in order to avoid the crossing of sensitive areas (High Critical and Critical areas) and consider underground power lines.

Underground cabling of distribution lines have been implemented in some Protected Areas, usually to assure an adequate landscape integration, but also to minimize impacts on birds due crossing of very critical areas. Yet, it is not considered as a standard impact minimization measure; technical difficulties/deterrents are alleged by transmission company not to use this solution.

In Madeira Region, is ongoing the work of undergrounding a power line crossing a sensitive area (Caniçal), under LIFE-Project Recover Natura (2013-2017), coordinated by Parque Natural da Madeira in partnership with SPEA Birdlife and with collaboration of Empresa de Eletricidade da Madeira (electric energy distribution company).

❖ **Specific information to recommendation´s part 4 (systematic data collection of collision and killing):**

The cooperation protocols established with the electric energy distribution company (EDP-D) have ensured the monitoring of mortality of birds on power lines, at a national level. More than 1700 km of power lines were prospected, totalizing 20% of the existing lines in protected areas, N2000 sites and Important Bird Areas (IBA). Also, some specific research, including movements' studies of Golden Eagle *Aquila chrysaetos*, Bonnelli's Eagle *Aquila fasciata*, Great Bustard *Otis tarda* and Little Bustard *Tetrax tetrax*, was carried out under these protocols.

SERBIA / SERBIE

UPDATED REPORT

ON THE IMPLEMENTATION OF THE RECOMMENDATION No. 110 (2004) OF THE STANDING COMMITTEE ON MINIMISING ADVERSE EFFECTS OF ABOVE-GROUND ELECTICITY TRANSMISSION FACILITIES (POWER LINES) ON BIRDS IN SERBIA

Regarding the Implementation of the Recommendation No 110 (2004) on minimizing adverse effects of above ground electricity transmission facilities (Power Lines) on Birds Republic of Serbia has been developed implementation activities as following:

REPORT BY THE MINISTRY OF MINING AND ENERGY ON IMPLEMENTATION OF THE COUNCIL OF EUROPE RECOMMENDATION NO. 110 (2004) ON THE REDUCTION OF THE HARMFUL IMPACT OF THE OVERHEAD DISTRIBUTION SYSTEM ON BIRDS INCLUDES AND INSTALLING POWER LINES NETWORK

1. Report by the Public Enterprise "Elektromreza Srbije"

In accordance with the Law on Nature Protection, Projects on development of the network of power lines realizes under the conditions by the Institute for nature conservation of Serbia and Provincial Institute for nature conservation in Vojvodina including adaptive measures for protecting birds and minimizing effects of power lines.

Public Enterprise "Elektromreza Srbije" in cooperation with NGO - Bird Protection and Study Society of Vojvodina have been signed two agreements on protection of the Saker falcon in Serbia.

The first agreement dates from May 2008, based on which 50 wooden boxes were installed, and the 2nd agreement dates from April 2014, based on which 30 metal boxes for safe Saker falcon nests on power lines "Portal" and "Jela" of 220 kV and 110 kV voltage levels will be installed.

Public Enterprise "Elektromreza Srbije" has undertaken and continues to undertake measures to protect the Great Cormorant, bird species protected by the Bern Convention, through placing lexan plates, as physical barriers between the cantilevered part of the pole and insulator strings, as well as to protect insulator strings by silicone caps so as to ensure the survival of their nests on overhead power line poles of 400 kV at the crossing of the Danube river. It is possible to transfer habitats of these birds to poles with nesting platforms, special homes, or similar, built in the vicinity etc.

2. Public Enterprise "Elektroprivreda Srbije"

Current measures taken to protect birds:

Protecting birds from the harmful effects of power facilities, especially overhead power lines is implemented through technical measures, of which the most important are:

- At certain points of medium-voltage lines the insulator extenders are installed, which increases the distance between live parts and the console
- In some places poles are built with steel lettice stork nesting platforms (bird family Ciconidae at risk of extinction)
- Installing of balls on conductors in areas marked as frequent bird migration areas
- On certain power lines, instead of non-insulated conductors, low-insulated conductors are installed, which due to isolation have less adverse impact on birds, that is, reduce death rates from electrocution.

Planned future measures to protect birds>

- Procurement and installation of rotary devices with mirrors which keep birds away from dangerous locations where bridging of the live part with the grounded part is possible
- Development of a catalogue with systematic display of medium-voltage power poles compliant with bird protection legislation, i.e. Council of Europe Recommendation No. 110
- Drafting of Technical Recommendation by the Department for Electricity Distribution of the Electric Power Industry of Serbia which would deal with this problem and the drafting would involve experts in environmental protection, primarily birds and that would be valid for all companies distributing electricity at all levels.

Follow up activities

Towards improvement of harmonisation of the regulations in the area of the nature protection and biodiversity, several important activites have been started and are in progress in this field.

- Amendments on the Law on Nature Protection has been prepared
- The draft Law on National Parks has been prepared
- Revision of the Strategy of Biological Diversity of the Republic of Serbia and Action plans – under the GEF UNDP project "National Biodiversity Planning to Support the Implementation of the CBD 2011-2020 Strategic Plan in the Republic of Serbia" the revision of the Strategy of Biological Diversity of the Republic of Serbia has started.

Prepared by Snezana Prokic,

Focal Point for Bern Convention

SLOVAK REPUBLIC / RÉPUBLIQUE SLOVAQUE

Bern Convention - national report on implementation of the Recommendation 110 (2004) of the Standing Committee on minimizing adverse effects of above-ground electricity transmission facilities (power lines) on birds – period 2010 – 2014

Prepared by: Mr. Michal Adamec, Mrs Michaela Mrázová and Mrs Andrea Lešová from the State Nature Conservancy of the Slovak Republi
and Mrs Jana Durkošová from the Ministry of the Environment of the Slovak Republic

Introduction:

The national report on implementation of the Recommendation No. 110 (2004) provides the reply to four specific parts of this recommendation as well as the additional information on legal, institutional framework, examples of activities which are based on the existing national and European legislations, guidance for respective nature protection bodies, cooperation with electric energy distribution companies and practical measures executed both by governmental and non-governmental bodies.

Legal and institutional framework:

The Act No 543/2002 Coll. on Nature and Landscape Protection as amended provides for general plant and animal protection (§ 4) with specific provision on electricity lines in the provisions:

- § 4.4 "*Everyone who constructs or carries out scheduled reconstruction of overhead electricity lines is obliged to use such technical solutions that prevent from killing birds* " an
- § 4.5 "*If killing birds on electricity lines or telecommunication facilities is verifiable, the nature protection body may rule that an administrator of electricity lines or telecommunication facilities has to adopt measures to prevent killing birds*."

According to Art. No 543/20002 Coll. is responsible for preventing electrocution of birds and must make arrangements to prevent electrocutions when erecting or reconstructing electric lines or when it is proved that a bird is killed on a pole.

According to the Act No 543/20002 Coll. the district/regional offices (their units in charge for environment protection) give opinion for each territorial decision or building permits (including those for the electricity network) that is the opportunity to request for considering the issue of negative effects of 22 kV lines on birds. These offices have been asked to thoroughly check all the plans and request (in all the new facilities) to install the appropriate models of construction and in sites of high importance for birds (with verified damages) to insist on underground power lines.

All plans and projects regarding the construction of power lines should comply with the Directives on Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA Act. No. 24/2006 Coll.). Where a high voltage (110kV, 220kV or 400 kV) transmission project, alone or in combination with other plans or projects is likely to have significant impacts on Special Areas of Conservation (SAC) and Special Protection Areas (SPA) e.g. Natura 2000 sites, or the risks of such effects cannot be excluded, Appropriate Assessment is required under the Article 6 of the EU Habitats Directive (No 92/43/EEC).

Since 2012 the Slovak Republic has been a signatory country of the Memorandum of Understanding concerning the Conservation of Migratory Birds of Prey in Africa and Eurasia.

The cooperation with electric energy distribution companies:

In the Slovak Republic there are three major electricity companies responsible for 22 kV and 110 kV power lines:

- Eastern Energy Distribution Company
- Central Energy Distribution Company
- Western Energy Distribution Company.

The cooperation among the State Nature Conservancy of the Slovak Republic, non-governmental organizations (hereinafter referred to as "NGOs") – mainly Raptor Protection of Slovakia (hereinafter referred to as the "RPS") and The Slovak Ornithological Society/BirdLife Slovakia (hereinafter referred to as"SOS Bird/LIFE Slovakia") and all three electricity companies is of very high importance as they operate within the whole country.

Long-term cooperation has been formalized by declarations and agreements:

- agreement between the State Nature of Conservancy of the Slovak Republic and the Central Energy Company: *"Policy of elimination threats of birds influens 22 kV air electric power line". Technological provision No: TP 08-08 Company:*
- agreement between State Nature of Conservancy of the Slovak Republic and Eastern Slovakia Energy Company *"Edition 7/2012 "Use of consoles for 22 kV electric overhead line with bare condactors".*

Above agreements mean the common strategy to eliminate threats of the 22 kV electricity power lines on birds (including the time table of activities in respective years – tackling the priority sections; cooperation in new methods, etc.).

Energy distribution companies in Slovakia support activities on monitoring and surveys of birds affected by power lines. They are voluntary partners in different project (mainly LIFE projects) where they together with public authorities (State Nature Conservancy of the Slovak Republic) and NGOs cooperate. Electric lines are also permanently monitored by employees of the State Nature Conservancy of the Slovak Republic and volunteers from NGOs. Organizations are concerned with the problem of electricity pylons (in terms of the collisions with birds) which is a serious European-scale problem for raptors and other bird species..

Permanently (once per every year), the energy distribution companies organize meeting (workshop), where the collected data and experiences are discussed. Moreover, the project of Carpathian Foundation and the Eastern Energy Distribution Company on research of efficiency of using equipment reducing mortality on power-lines by electrocutions and injuries during flight on wires is under way.

Some of energy distribution companies support activities of NGOs from money acquired from 2% of tax assignation.

Examples of running/approved projects and their outputs:

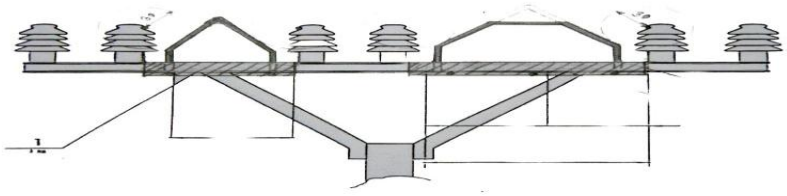
- LIFE NATURE PROJECT (LIFE06 NAT/HU/000096) „*Conservation of the Falco cherrug in the Carpathian Basin*" resulting in insulation of 22 kV (4 000 – pylons), new type of bird flight diverter (approximately 1 km of 22 kV power lines), monitoring of 22 kV power lines (19 353 poles; 1 673 km) checked, guidelines for identification of dangerous 22 and 110 kV power lines without monitoring collisions, nest boxes on high voltage pylons, photo-traps, video traps, etc.
- LIFE NATURE PROJECT (LIFE09 NAT/HU/000384): „*Conservation of Falco cherrug in Northeast Bulgaria, Hungary, Romania and Slovakia*". Concrete resulst are mainly location and insulation of dangerous electric pylons (altogether at least 850 pylons will be insulated in Slovakia during January 2011 – August 2014, 412 pylons already insulated in Slovakia). The project is aimed to decrease by 95 % number of birds electrocuted on insulated sections of the electric power-lines (compared to baseline data while the breeding success and individual survival increases); .apart for *Falco cherrug* numerous other important, protected and strictly protected species will benefit from the action (e.g. *Corracias garrulus, Falco tinnunculus, Falco vespertinus, Tyto alba* etc.). More informations is in web site http://sakerlife2.mme.hu/sites/default/files/LIFE09NAT-HU-000384_MTR_211013.pdf
- LIFE NATURE PROJECT (LIFE09NAT/SK/000396): „*Conservation of Aguila pomarina in Slovakia*" within project was totally 429 km of dangerous power lines were protected/improved what represents 5 680 points during the 2010 – 2013 in the project areas.

- LIFE Nature project approved by European commission "*Energy in country sites*" has just started, it is aimed to prepare strategy solution at the national level (commonly prepared by NGOs, all 3 energy distribution companies and State Nature Conservancy of the Slovak Republic and after approved by the Ministry), elaboration of the methodology of collection and evaluation of data, development of information centre and database; identification is risks, identification of risk sites along the migration corridors and main wintering sites, activities in pilot areas etc. "*Methodology of evaluation of bird killing on power lines"* will determine the biological aspects of the impact of collisions with power lines on populations of threatened species in the study areas (SPA in East Slovakia). Next goal will be development of a model to predict areas with high, medium, low risk of birds collisions.

Specific information to the <u>recommendation´s parts 1 a 2</u> (measures):

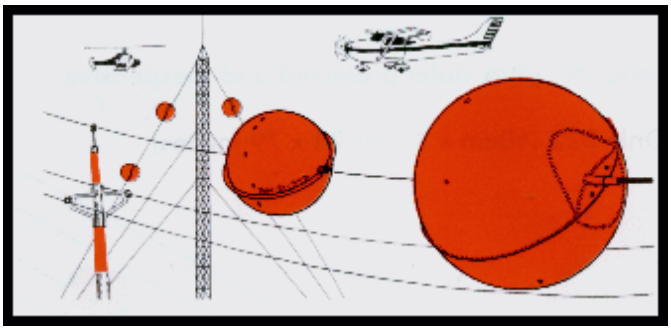
As already explained, all the new electric poles must be constructed towards minimizing negative effects on birds. Also within existing electric poles in problematic sections the technical measures are undertaken. The precise statistics is not completed (data base is created gradually with respect to the total number of electric poles, on various types and numbers of cross-arms/other technical measures and data are not available yet).

The most appropriate type for the existing electric poles of the electricity lines is the following model of the additional preventive „protector" (being used by all 3 electricity companies after the agreement with the State Nature Conservancy of SR and NGOs):



The State Nature Conservancy of the Slovak Republic requests realization of technical measures for protecting bird killing on the power lines:

- Operative installation of protectors in critical sections;
- Installation of artificial breeding stands and protectors on power lines – poles;
- Operative installation of artificial breeding stands;
- Replacement of whole consoles – on the base of our experiences, comb protectors are ineffective;
- New triangle consols were installed;
- Installation of tools for better visibility of power lines were realized (illustrated in pictures bellow) (aerial market ball for power lines – red and white colors were installed, FireFly – Bird Flapper);



Specific information to <u>recommendation´s part 3</u> (underground lines in sensitive areas):

Development (reconstruction) of the electric lines via the underground installation is required but in practice it is not feasible (being very expensive). Therefore this approach is not realistic neither in large scale areas (SPAs in Slovakia cover over 25 % of the territory) nor in other nature reserves such

as wetlands visited by the birds (where it is too complicated to install underground lines). The most appropriate solution is using so-called triple cable in which all three conductors are within one cable that is better visible and does not present so dangerous barrier like three parallel conductors.

Specific information to recommendation´s part 4 (systematic data collection of collision and killing):

Systematic collection of these data is undertaken by the State Nature Conservancy of the Slovak Republic (within its annual plan of main tasks) via the regular on the spot personal checks of the electricity line zones.

In addition, these activities are executed by NGOs and by the employees of the electricity distribution companies. There are ongoing and preparing new LIFE Nature projects that tackle the issue of minimizing bird mortality and some are under preparation. The State Nature Conservancy of the Slovak Republic has realized monitoring and documentation. It means, there exists "step by step" procedure, how the listing and evidence of power-pylon has to be done and how possible occurrence of injured /dead bird is documented (GPS coordinates, photo, type of pylon, type of insulator, etc.)

These activities are for many years included in the annual work plan of the institution. They consist of *identification of* the most dangerous facilities (both constructions and power lines) via systematical and ad hoc monitoring of killed/hurt birds, compilation and data processing, supervision on practical application of nature protection decisions and of improvement of identified problematic facilities.

Example of activities undertaken during 2010 - 2014:

- The power lines (110kV, 22kV or 400 kV) in the potential and active breeding sites were monitored (by the State Nature Conservancy of the Slovak Republic, NGOs and volunteers) and protected with console protectors (by energy companies).
- Dead and injured birds found under the pylons were documented, and the locations of problematic pylons were sent to energy companies;
- Transshipments of stork nests (*Ciconia ciconia*) were performed approximately 30 nests per year, installation of new stork nests (approximately 10 per year), adjustments of old stork nests as well as needed contracts with energy companies about transshipments of stork nests (*Ciconia ciconia*).
- Construction of artificial nest boxes mainly for raptors (*Falconiformes*) was realized;
- During construction of new or reconstruction of older power lines new triangle consols were installed;
- Installation of tools for better visibility of power lines were realized in the Nature Reserve,
- The Central Energy Distribution Company cooperates with rescue stations – financial support of the Ekocentre in construction of exterior aviary;
- Several negotiations with all three energy companies resulting in signing agreements on data exchange and common approach and in preparation of a long-term strategy;
- Common control days (energy companies/nature protection bodies) organized with presentation of the appropriate technical solutions;
- Mortality monitoring at selected sections which - where needed - followed by negotiations supervision of taken measures;
- Requests were made to district office to ask for preventive installation on 22 kV electric lines;
- More detail monitoring at the 22 kV lines mainly in Special Areas of Conservation (SAC) and Special Protection Areas (SPA) – Natura 2000 sites;
- Collection and processing of data and implementation of further elimination measures.

Similar activities have been done by NGOs. For instance RPS via several project implemented both public awareness activities (leaflet on Poles of Death, exhibitions, negotiations…) and practical measures for monitoring the most problematic sections. Insulation of poles as well as construction of artificial nest boxes for concerned birds and implemented to mark electric lines to be visible In selected sections other measures have been implemented – to mark electric lines to be more visible. All activities were coordinated with the State Nature Conservancy of Slovak Republic.

October 2014

SWEDEN / SUÈDE

SWEDISH ENVIRONMENTAL PROTECTION AGENCY

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Report
2014-10-22 Case number:
NV-06211-14

Report on the implementation of Bern Convention Recommendation 110 (2004) on minimizing adverse effects of power lines on birds - SWEDEN

Background

The Bureau of the Bern Convention has decided to include the issue of birds versus power lines on the upcoming Standing Committee meeting. For that reason the Bureau has asked for a report on the implementation of the Convention Recommendation 110 (2004).

The Swedish Environmental Protection Agency hereby submits the Swedish report.

The request from the Bureau has been circulated to a number of national bodies which are concerned by this issue. These bodies include the Energy Market Inspectorate (a governmental authority that works for efficient energy markets), the Swedish Transport Administration (a governmental authority that has overall responsibility for the transport systems in Sweden), the Swedish Museum of Natural History (responsible for collecting information about the impact on birds caused by power lines) and the Swedish Ornithological Society. The following paragraphs constitute extracts from these statements and the report is concluded by some comments from the Swedish Environmental Protection Agency.

The Energv Market Inspectorate has since the last report not taken any particular measures in accordance with the Recommendation, and refers to the answer given in the previous report. The inspectorate points out that it follows national legislation in approval procedures, and that it constantly seeks to improve its competence on such matters.

The Swedish Transport Adminstration points out that it does not primarily address this issue from a conservation point of view, but rather in order to minimize accidents that threaten the functionality of its installments. The Transport Administration does thus not take into account the Recommendation in itself, although its actions overlap with actions proposed in the Recommendation.

The Transport Administration has since the last report:

- Taken measures to keep birds from perching on its installments, by equipping them with perch rejectors
- Cables have been equipped with perch rejectors (“Firefly” type)

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- Substations have been equipped with “owl scarecrow” or the like
- Substations have been equipped with plastic screens to separate birds from parts with electric current.
- To prevent in particular raptors from colliding with trains, the Administration has put effort into clearing the tracks from carcasses more rapidly.

The Swedish Museum of Natural History continuously collects information about birds that have suffered from collisions with lines or have been electrocuted. For information concerning the period previous to this report, we refer to our last report. In general, it is sill (large) owl species, raptors that seem to be most vulnerable. The statistics presented are not comprehensive, but serve as a guideline. For Eagle owl *(Bubo bubo)*, Ural owl *(Strix uralensis)*, Great grey owl (*Strix nebulosa*), White-tailed seaeagle (*Haliaetus albicilla*), Osprey (*pandion haliaetus*) and Golden eagle (*Aquila chrysaetos*) about 7 % and 26%, respectively, of the birds found dead seem to have suffered from collision with power lines or from electrocution. For White stork (*Ciconia ciconia*), 50% of the storks found dead where presumed killed due to collision with power lines. However, the statistics are based on dead ringed individuals, and are not specific as to where they were found. All individuals were ringed in Sweden, but some might have been killed, and found, in another country.

In total, 5244 individuals from 32 taxa were included.

The Swedish Ornithological society has submitted a large amount of information to illustrate the magnitude of this issue, as well as the efforts that the Society has made over the years to persuade energy producers and other to take action against the unintentional killing of birds along power lines. From its statement it is clear that the ambition to mitigate the problems still differs significantly between bodies. The Society concludes that even though some of the efforts made seem to have been successful, there are still other examples which demonstrates that economic consideration often is given priority over bird conservation aspects. In addition, The Society calls for the governing bodies to adress the issue properly, and take actions accordingly.

The Swedish Environmental Protection Agency would like to make the following comments concerning the implementation of Recommendation 110. The previous report concluded that above-ground electricity transmission facilities still constitute a risk to birds and particularly raptors and owls. This still applies, although efforts have been made to minimize the adverse effects. These efforts have to continue, as do the efforts to make the Bern Convention Recommendation 110 more widely known. The EPA will continue to consider the best way of making the content of the document more known, and means to have a more efficient implementation in relevant authorities, companies and other bodies.

For the Swedish Environmental Protection Agency

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UNITED KINGDOM / ROYAUME-UNI

"FOLLOW-UP OF RECOMMENDATION 110 (2004) ON MINIMISING ADVERSE EFFECTS OF ABOVE-GROUND ELECTRICITY TRANSMISSION FACILITIES (POWER LINES) ON BIRDS"

UK REPORT 2009

Summary

1. The UK takes a number of steps to reduce the risks to birds from power lines. In specific areas for example where bird populations are large or where a particular species is present, consideration is given to taking mitigating action, having regard to the need to maintain power supplies and the need to ensure that the cost of that activity is proportionate.

2. UK power lines are not designed specifically with birds in mind, but the vast majority of lines cause no problems to birds at all. The measures the UK currently takes to minimise the adverse effects of power lines are described in detail below and are believed to be cost-effective and proportionate.

To avoid electrocution

3. Electricity companies have responsibility for power line design, including supporting poles, however it is believed that many of the most dangerous types are not used in the UK.

4. Planning applications and/or proposals from power companies to modify or upgrade power lines are considered by Government and its scientific advisers. This provides an opportunity for comments to be made on the implications for birds (and for any other potential issues).

5. There is some evidence that birds can be electrocuted if they perch or attempt to land on the structures supporting power lines. Small birds are at less risk as they are not large enough to come into contact with two lines simultaneously. Larger birds are at greater risk as they can bridge the gap (typically between 1m and 1.4m) between two lines. Measures to reduce the risk of electrocution have included deterring birds from using the cross-arm as a perch or by the application of shrouding. Another option is to provide a more attractive perch to encourage the bird away from the power lines. These solutions have been used in specific sites and in relation to particular species.

To avoid collisions and reduction of habitat availability while improving air safety

6. Placing new power lines underground is considered where this is appropriate, having regard to the cost and the possible habitat damage which might result compared to the benefits to issues such as the landscape and the probability of collisions.

7. Work is underway in Scotland to develop guidance for power line surveys which is designed to ensure that lines avoid significant areas of bird interest. This guidance, along with common protocols are recommended to companies considering new or upgraded power lines.

8. Where collisions are occurring in the UK, steps are often taken to prevent this by increasing the visibility of the lines to birds. This includes attaching marker discs and balls and other flight diverters to the lines; the size, shape, design and colour of the markers are generally determined by the species concerned. If these measures do not sufficiently reduce the number of collisions, the electrical risk can be reduced by insulating the line. This can be achieved by the application of shrouding, or by replacing the bare wires with insulated wires, depending on the loading on the line itself and on the particular voltage being transmitted.

Considering replacing underground overhead power-lines in areas of exceptional high interest for birds

9. Where lines require upgrading or replacement, placing them underground is considered as an option. As well as the financial implications however, there may be issues of habitat damage or loss which may militate against undergrounding, including lines that pass through protected areas.

Systematically collect information with respect to collisions and electrocutions

10. UK electricity companies generally maintain coded information to record evidence of bird strikes in general (and swan strikes specifically). Faults on the lines resulting from bird strikes are also recorded. These reports generally relate to the power lines rather than the birds themselves; information about individual birds may however be held informally and locally in some cases.