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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE AND NATURAL HABITATS

Bern Convention Group of Experts on Conservation of Birds
/
Groupe d'experts de la Convention de Berne sur la Conservation des Oiseaux

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OBSERVER ORGANISATIONS' REPORTS ON THE IMPLEMENTATION OF THE ACTION POINTS LISTED IN THE BUDAPEST DECLARATION ON BIRD PROTECTION AND POWER LINES

FINAL

Document prepared by BirdLife International

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1. SUMMARY

Power lines can pose a major threat to the conservation of birds through electrocution, collision and habitat loss. To reduce bird mortality from power lines, the conference "Power lines and bird mortality in Europe" was organized in 2011, resulting in the adoption of Budapest Declaration. The Budapest Declaration identified several action points on power lines and bird safety, together outlining a multiannual programme of follow-up actions.

In 2012 the Standing Committee to the Bern Convention invited the Observer Organisations to the Convention to voluntarily report on the progress of implementation of the Budapest Declaration. Six Observer Organisations responded to this request.

The reports from the Observer Organisations revealed that in general the implementation of action points of the Budapest Declaration has been limited in the Contracting Parties covered by these organisations. National expert groups have only been identified in Switzerland and Germany and a national programme of action was only reported in Germany.

Switzerland has prioritised power lines for retrofitting and adaptation on a national or regional level and Germany retrofitting and adaptation of all medium-voltage transmission power lines is on-going. Germany and Switzerland have also developed and implemented technical standards for bird-safe power pole design and have put the necessary legislation in place to ensure new and fully reconstructed power lines are bird-safe by design.

Observer Organisations also reported that voluntary cooperation between industry, public administration and NGOs is on-going and that research on the impact of power lines on birds is being undertaken and published.

The Contracting Parties are invited to step up their efforts to implement the action points of the Budapest declaration, especially regarding the identification of national expert groups and the development of national programmes of action. The Parties are also invited to communicate the progress on the implementation of the action points to the Observer Organisations.

2. INTRODUCTION

Power lines can pose a major threat to the conservation of birds through electrocution, collision and habitat loss. Electrocution occurs when a bird touches two phase conductors or one conductor and an earthed device simultaneously and results in a strong electric current running through the body of the bird. This can cause the death or injury of the bird. Collision occurs when a bird in flight hits an overhead cable and can cause the death or injury of the bird. Habitat loss occurs when a power lines are built in an open habitat, which then becomes less attractive for birds as staging or nesting sites due to an increased risk of predation (Haas et al 2003).

The two different types of power lines, transmission lines and distribution lines, pose different risks for birds. Transmission lines are power lines transferring electricity from power plants to high-voltage electrical substations located near demand centres. Distribution lines are power lines carrying electricity from the transmission substations to the final customers. Electrocution mainly occurs on overhead distribution lines and mainly when birds roost, perch or nest on the poles (Haas et al 2003). Collision can occur on both transmission and distribution lines (Haas et al 2003). The risk of electrocution and collision depend on the bird species concerned (Annex I and Haas et al 2003)

In addition, there is a strong consensus that the risks power lines pose to birds strongly depend on the technical construction type and detailed design of power facilities such as poles, lines and transmission stations (see figures in Annex I).

The Standing Committee to the Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) has recognized the threats power lines pose to birds in 2004 and made a Recommendation on minimising adverse effects of above-ground electricity transmission facilities (power lines) on birds (Recommendation 110 (2004), reprinted in Annex I). Similar recognition has been given to the issue by the Convention on Migratory Species (Bonn Convention) which adopted Resolution 7.4 in 2002 calling to curb the increasing electrocution risk from medium-voltage transmission lines to migratory birds and to minimise this risk in the long term.

In 2011 MME/BirdLife Hungary, the Ministry of Rural Development of Hungary and BirdLife Europe organized the conference "Power lines and bird mortality in Europe". This conference highlighted the progress made in bird safety and power lines and outlined challenges in ensuring implementation of relevant international and national legislation. The conference resulted in the adoption of Budapest Declaration (reprinted in Annex II). As part of this declaration, several action points were identified, which are shown in table 1 on the next page.

As a follow-up to the Budapest Declaration, the Standing Committee to the Bern Convention sent to the Observer Organisations a questionnaire on the implementation of the action points identified under the Budapest Declaration (printed in Annex III).

In the present report a stocktaking of progress on the implementation of the action points is made based on the questionnaires submitted by six Observer Organisations, covering six Contracting Parties. This is complemented by an analysis of the report submitted by another Observer Organisation based on an earlier questionnaire on the implementation of the action points of Recommendation 110 (2004), which contained relevant information on another Contracting Party (the full report is available here).

The final chapter then provides some key recommendations to ensure full implementations of the action points of the Budapest Declaration.

I. Preparatory actions, to be implemented by the end of 2012	
Action	**Applies to**
1. Set up groups of experts on bird safety on power lines in each country and at the international level to review and consolidate the available technical standards for bird safety on power lines; to develop National and European programmes for prevention and mitigation of bird electrocution and collision; to facilitate exchange of technical, biological and managerial experience and support implementation of such programmes.	Governments National (EU) National (non-EU) International Industry, NGOs
2. Develop and kick off an internationally coordinated start-up programme for knowledge transfer, including the maintenance of an international roster of experts and regular communication on technical and managerial issues; to collate and publish bird electrocution and collision-related literature; to develop internationally standardised monitoring protocols; to expedite a Pan-European movement towards improving bird safety on power lines, including research and development as well as communication projects and voluntary cooperation between industry, public administration and civil society.	National (EU) National (non-EU) International
3. Support on-going exchange of experience between EU and non-EU countries to reduce and eliminate bird electrocution and collision on power lines.	National (EU) National (non-EU)
II. Planning and standard verification actions, to be completed by the end of 2015	
4. Prioritise power lines for mitigation in accordance with bird distribution data and in consultation with relevant government, industry, academic and NGO experts. Set up a detailed mid-term strategy and an implementation plan for mitigation measures.	National (EU) National (non-EU)
5. Develop and approve national technical standards and catalogues of bird-safe power pole designs (for new lines) and mitigation measures (for retrofitting existing lines) relevant for each country. Promote these standards through formal training of technical staff and sub-contractors and regular conferences.	National (EU) National (non-EU)
III. Ensure that bird losses are to be eliminated on new and fully reconstructed power lines from 2016 onward	
6. Ensure that new and fully reconstructed power line sections are safe for birds by design.	National (EU) National (non-EU)
IV. Mitigation actions on existing power lines, to be completed by 2020	
7. Ensure that priority power lines in term of bird conservation/distribution and the most dangerous pole types in all lines are retrofitted/changed to birdfriendly lines and pole types.	National (EU) National (non-EU)
V. Monitoring and reporting of progress	
8. Promote and support financially internationally standardised monitoring of the impacts of power lines on birds, including the necessary evaluation of the effectiveness of mitigation measures.	National (EU) National (non-EU) Industry
9. To report every two years (starting from 2012) on the actual progress in the implementation of Resolution 110 of the Bern Convention and of this Declaration.	National (EU) National (non-EU)

Table 1: Action points of the Budapest declaration on bird protection and power lines, adopted by the Conference "Power lines and bird mortality in Europe" in Budapest, Hungary on 13 April, 2011.

3. REVIEW OF REPORTS RECEIVED FROM OBSERVER ORGANISATIONS TO THE CONVENTION

Six Observer Organisations provided a report on the implementation of the action points identified under the Budapest Declaration (printed in Annex II). In addition, another Observer Organisation submitted a report on the implementation of the action points of Recommendation 110 (2004) which contained extensive information on another Contracting Party. An overview of the reports submitted and reviewed is given in table 2.

Observer Organisation	**Contracting Party concerned**	**Report reviewed**
Ornithological society Naše ptice (Our birds)	Bosnia and Herzegovina / Bosnie-Herzégovine	Budapest
BirdLife Cyprus	Cyprus / Chypre	Budapest
Society for Protection of Nature and Ecodevelopment	Germany / Allemagne	Bern Rec. 110
Hellenic Hunters Confederation	Greece / Grèce	Budapest
Center for Protection and Research of Birds	Montenegro / Monténégro	Budapest
Bird Protection Macedonia	Macedonia / Macédoine	Budapest
BirdLife Switzerland	Switzerland / Suisse	Budapest

Table 2: Reports received and reviewed on the implementation of the action points of the Budapest Declaration and Recommendation 110 (2004) of the Standing Committee to the Bern Convention.

Ornithological society Naše ptice – Bosnia and Herzegovina / Bosnie-Herzégovine

Organisation:	Ornithological society Naše ptice (Our birds)
Name and position of responsible person:	Dražen Kotrošan, president
E-mail:	kotrosan@bih.net.ba
Phone:	+38 761 356 670

In Bosnia and Herzegovina no national group of experts on bird safety and power lines has been established due to a lack of funding. A national bird monitoring protocol is in place only for collision with power lines. The national experience on bird safety and power lines has recently been published by Naše ptice. Bosnia and Herzegovina supported the exchange of experience on birds and power lines with other countries through using the protocols from the EU to study the effects of power lines.

There is no cooperation on bird safety and power lines between industry, public administration or civil society in Bosnia and Herzegovina. Bosnia and Herzegovina did not recently support research projects of companies, scientific organisations and NGOs on power lines and bird safety. No monitoring of mitigating measures is carried out.

The impact of railway infrastructure on electrocution and collision has not been studied in Bosnia and Herzegovina.

Underground cabling of power lines is not promoted as standard technique. Legislation for new and fully reconstructed power lines which ensures that they are bird-safe by design has been issued. The impact of power lines on birds is not monitored.

No power lines to be retrofitted or changed for bird conservation and distribution have been identified. Technical standards and catalogues of bird-safe power pole design and mitigation measures are being developed.

BirdLife Cyprus – Cyprus / Chypre

Organisation:	BirdLife Cyprus
Name and position of responsible person:	Martin Hellicar
E-mail:	Martin.hellicar@birdlifecyprus.org.cy
Phone:	+35 722 455 072

In Cyprus no national group of experts on bird safety and power lines has been established because this issue is not a priority and there is nobody available to participate. Consequently, there is no national bird monitoring protocol in place and there have been no recent publications on bird safety and power lines. Also, no exchange of experience on bird safety and power lines with other countries is currently planned.

There is no cooperation on bird safety and power lines between industry, public administration or civil society in Cyprus. Cyprus did not recently support research project on bird safety and power lines and no monitoring of mitigating measures is carried out.

The impact of railway infrastructure on electrocution and collision has not been studied as there are no railways in Cyprus.

Underground cabling of power lines is not promoted as standard technique. There is no legislation for new and fully reconstructed power lines which ensures that they are bird-safe by design. Impact of power lines on birds is not monitored

No priority power lines to be retrofitted or changed for bird conservation and distribution have been identified on Cyprus. Technical standards and catalogues of bird-safe power pole design and mitigation measures are not being developed. BirdLife Cyprus has contacted the authorities about the technical standards but did not receive a reply.

Hellenic Hunters Confederation – Greece / Grèce

Organisation:	Hellenic Hunters Confederation
Name and position of responsible person:	Mr. Nikolaos Papadodimas President of Hellenic Hunters Confederation Vice-president of FACE
E-mail:	info@ksellas.gr, president@ksellas.gr
Phone:	+30 210 323 127 1

In Greece no national group of experts on bird safety and power lines has been established because bird mortality from collision and electrocution is considered to be minimal. Consequently, there is no national bird monitoring protocol in place, there have been no recent publications on bird safety and power lines and no exchange of national experience with other countries is planned.

There is no cooperation on bird safety and power lines between industry, public administration or civil society in Greece. Greece did not recently support research projects of companies, scientific organisations and NGOs on power lines and bird safety. No monitoring of mitigating measures is carried out.

The impact of railway infrastructure on electrocution and collision has not been studied in Greece.

Underground cabling of power lines is not promoted as standard technique. There is no legislation for new and fully reconstructed power lines which ensures they are bird-safe by design. The impact of power lines on birds is not monitored.

No priority power lines to be retrofitted or changed for bird conservation and distribution have been identified. No technical standards or catalogues of bird-safe power pole design and mitigating measures have been developed.

Bird Protection Macedonia – "the former Yugoslav Republic of Macedonia" / l' "ex-République yougoslave de Macédoine"

Organisation:	Bird Protection Macedonia
Name and position of responsible person:	Branko Micevski, president
E-mail:	brankom@ukim.edu.mk
Phone:	+38 978 254 736; +38 922 432 071

In "the former Yugoslav Republic of Macedonia" no national group of experts on bird safety and power lines has been established due to a lack of funding. Consequently, there is no national bird monitoring protocol in place, there have been no recent publications on bird safety and power lines and no exchange of national experience with other countries is planned.

There is no cooperation on bird safety and power lines between industry, public administration or civil society in "the former Yugoslav Republic of Macedonia". "The former Yugoslav Republic of Macedonia" did not recently support research projects of companies, scientific organisations and NGOs on power lines and bird safety. No monitoring of mitigating measures is carried out.

The impact of railway infrastructure on electrocution and collision has not been studied in "the former Yugoslav Republic of Macedonia".

Underground cabling of power lines is not promoted as standard technique. There is no legislation for new and fully reconstructed power lines which ensures that they are bird-safe by design. Impact of power lines on birds is not monitored and the perspectives of obtaining the necessary funding for monitoring are small.

No priority power lines to be retrofitted or changed for bird conservation and distribution have been identified. No technical standards or catalogues of bird-safe power pole design and mitigating measures have been developed.

Centar za zaštitu i proučavanje ptica – Montenegro / Monténégro

Organisation:	Centar za zaštitu i proučavanje ptica (CZIP, Center for Protection and Research of Birds)
Name and position of responsible person:	Mihailo Jovićević, Acting Director
E-mail:	mihajov@gmail.com
Phone:	+38 268 685 991

In Montenegro no national group of experts on bird safety and power lines has been established as this issue is not a priority and thus there is nobody available to participate. Consequently, there is no national bird monitoring protocol in place, there have been no recent publications on bird safety and power lines and no exchange of national experience with other countries is planned.

There is no cooperation on bird safety and power lines between industry, public administration or civil society in Montenegro. Montenegro recently support research projects on bird safety and power lines through the monitoring of biodiversity by the Environmental Agency, the implementation of Natura 2000 in Montenegro by the Ministry of Sustainable development and several other projects on power lines and bird safety. Monitoring of mitigating measures is carried out by government agencies.

The impact of railway infrastructure on electrocution and collision has not been studied in Montenegro.

Underground cabling of power lines is not promoted as standard technique. There is no legislation for new and fully reconstructed power lines which ensures that they are bird-safe by design. Impact of power lines on birds is not monitored.

No priority power lines to be retrofitted or changed for bird conservation and distribution have been identified. No technical standards or catalogues of bird-safe power pole design and mitigating measures have been developed.

SVS BirdLife Switzerland – Switzerland / Suisse

Organisation:	BirdLife Switzerland
Name and position of responsible person:	Michael Gerber, project leader
E-mail:	michael.gerber@birdlife.ch
Phone:	+41 444 577 032

In Switzerland, a national group of experts on bird safety and power lines has been identified and is coordinated by Werner Müller, SVS/BirdLife Switzerland (Email) and Daniela Heynen, Swiss Ornithological Institute (Email). There is no national bird monitoring protocol in place. The national experience on bird safety and power lines has recently been published in publications of government agencies, publications of distribution companies and other publications. Switzerland did not support the exchange of experience on birds and power lines with other countries.

Voluntary cooperation on bird safety and power lines between industry, public administration and civil society is on-going through the joint development of the catalogue of measures for bird safety and power lines described below. Switzerland recently supported research projects of companies scientific organisations and NGOs through financial support and the contribution expertise to the guideline and participation in the group of experts.

Monitoring of mitigating measures is carried out by research institutes and nature protection NGOs.

The impact of railway infrastructure on electrocution and collision has been studied on parts of the Swiss railway network. The main railway company has been involved in developing the catalogue of measures on bird safety and power lines.

Underground cabling of transmission and distribution lines is promoted in areas with special countryside and conservation areas of national or international importance. Legislation for new and fully reconstructed power lines ensures they are bird-safe by design through Article 2 and 30 of SR 734.31 Verordnung über elektrische Leitungen (available here). Impact of power lines on birds is monitored by research institutes and NGOs but only partially through an *ad hoc* collection of sightings.

Priority power lines through be retrofitted or changed for bird conservation and distribution have been identified for the conservation of Eagle Owl and the White Stork, the two species with the highest losses due to power lines in Switzerland. Technical standards and catalogues of bird-safe power pole design and mitigation measures have been developed by the Federal Office for the Environment, power companies, the Swiss Ornithological Institute and BirdLife Switzerland and are being implemented nationally. The guidelines are available here.

4. REVIEW OF PREVIOUS REPORTS BY OBSERVER ORGANISATIONS TO THE CONVENTION

Society for Protection of Nature and Ecodevelopment – Germany / Allemagne

Organisation:	Society for Protection of Nature and Ecodevelopment
Name and position of responsible person:	Mr Bernd Schuerenberg, Mr Richard Schneider and Mr Hans Jerrentrup
E-mail:	-
Phone:	-

In Germany a national group of experts on bird safety has been identified and is coordinated by the Ministry of the Environment. The Joint Working Group consists of experts from the distribution and transmission companies, from the NGOs and from the state institution for bird protection. The national experience on bird safety and power lines was in 2008 published by NABU, an NGO, in the book Stromtod von Vögeln (Electrocution of Birds). NABU also supported the exchange of experience on birds and power and power lines with other countries through the organisation of workshops with the NGO LPO in France and the translation of the technical standards described below.

Voluntary cooperation on bird safety and power lines between industry, public administration and civil society is on-going through the organisation of workshops on this issue, the working group described above and the development of technical standards described below.

Legislation for new and fully reconstructed power lines ensures they are bird-safe by design through Article 41 of the 2009 German Nature Conservation law. Under this law, all new medium-voltage transmission power lines must be constructed in a way that birds are protected against electrocution and all existing power poles and technical elements of medium-voltage transmission power lines that are highly dangerous to birds should be subject to the necessary mitigation measures by the end of 2012. The impact of power lines on birds is monitored by nature protection NGOs.

No priority power lines to be retrofitted or changed for bird conservation have been identified as such, but instead all medium-voltage transmission power lines are a priority under German Nature Conservation law as described above, and all such power lines should be retrofitted or changed.

Technical standards and catalogues of bird-safe power pole design and mitigation measures have been developed by NABU and are being implemented nationally. The current guidelines have been developed in 2005 and are the third version of the guidelines, the first version being developed in 1986. The current guidelines are available here.

5. CONCLUSIONS

Six Observer Organisations that received the questionnaire have sent a reply. Another Observer Organisation had previously provided relevant information on power lines and bird safety to the Standing Committee. It should be noted that the present evaluation of implementation of action points of the Budapest declaration should not be seen as a general report on the implementation of the action points in all Contracting Parties of the Bern Convention.

The implementation of preparatory actions under the Budapest declaration to be completed by the end of 2012 has been limited.

Expert groups on bird safety and power lines have been identified in Germany and Switzerland. A national programme for prevention and mitigation of bird electrocution and collision has only been reported from Germany, although it is unclear to what extent collision is covered by this programme.

No internationally coordinated start-up programme for knowledge exchange has been initiated.

The exchange of experience between EU and non-EU countries is on-going and has been actively supported by Bosnia and Herzegovina and Switzerland.

Some progress has already been made in the implementation of planning and standard verification actions under the Budapest declaration to be completed by the end of 2015.

A national prioritisation of power lines for retrofitting and adaptation has only been undertaken in Switzerland, and in Germany all medium-voltage transmission power lines will be retrofitted and changed.

Technical standards and catalogues of bird-safe power pole designs for new lines and mitigation measures for retrofitting existing lines have been developed and implemented in Germany and Switzerland and are being developed in Bosnia and Herzegovina.

Good progress has also already been made on the elimination of bird losses on new and fully reconstructed power lines which have to be bird safe from 2016 onwards. Legislation which ensures that new and fully reconstructed power lines are bird-safe by design has been introduced in Germany and Switzerland and is being drafted in Bosnia and Herzegovina

Little progress has already been made in mitigation actions on existing power lines, which are to be completed by the end of 2020. Dangerous pole types have been retrofitted or changed only in Germany.

There has been limited progress on monitoring. A national protocol for monitoring bird electrocution and collision has only been put in place for collision in Bosnia and Herzegovina. The action point on reporting does not apply to the Observer Organisations.

The questionnaire contained questions on several topics related to bird safety and power lines other than the action points of the Budapest declaration. Bosnia and Herzegovina, Montenegro and Switzerland have recently supported research projects on bird safety and power-lines and publication of national experience on power lines and bird safety is on-going.

Voluntary cooperation on bird safety and power lines between industry, public administration and civil society is on-going in Germany and Switzerland and includes voluntary agreements and development of guidelines.

The impact of railways on bird electrocution and collision has not been studied in any of the Contracting Parties covered by the Observer Organisations. Underground cabling is promoted as a standard technique in priority zones in Switzerland only.

6. RECOMMENDATIONS

On the basis of the conclusions presented in the previous chapter a number of specific key recommendations are made to the Expert Groups on Birds:

1. Invite Contracting Parties who have not identified a national group of experts are to step up their efforts to identify such a group;
2. Invite Contracting Parties who have not developed a National Programme of Action to develop and implement such a programme;
3. Invite Contracting Parties to do a quick scan of the impacts of railway infrastructure on birds as this topic has not been studied in any of the countries examined;
4. Invite Contracting Parties to communicate the progress on the implementation of the action points of the Budapest declaration to the Observer Organisations.

ANNEX I - RECOMMENDATION NO. 110 OF THE STANDING COMMITTEE

COUNCIL OF EUROPE CONSEIL DE L'EUROPE

Convention on the Conservation
of European Wildlife and Natural Habitats

Standing Committee

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

(adopted by the Standing Committee on 3 December 2004)

The Standing Committee of the Convention on the Conservation of European Wildlife and Natural Habitats, acting under the terms of Article 14 of the Convention,

Having regard to the aims of the Convention to conserve wild fauna and its natural habitats;

Recalling that Article 2 of the Convention requires Parties to take requisite measures to maintain the population of wild fauna at a level which corresponds in particular to ecological, scientific and cultural requirements, while taking account of economic requirements;

Recalling that Article 3.2 of the Convention requires each Contracting Party to undertake, in its planning and development policies and in its measures against pollution, to have regard to the conservation of wild fauna.

Recalling also the Convention on the Conservation of Migratory Species of Wild Animals (CMS) Resolution 7.4 on Electrocution of Migratory Birds adopted by the 7th meeting of the Conference of the Parties (2002) and recognising the intention of the CMS to increase cooperation with the Bern Convention;

Recognising the importance of maintaining energy supplies and for actions taken to protect birds to be proportionate in terms of cost and to avoid reduction in overall level of safety of transmission lines or in stability of supply**;**

Recognising the importance of maintaining a stable energy supply and avoiding a reduction in the overall level of safety of transmission lines;

Recognising also that actions taken to protect birds should be proportionate in terms of cost;

Referring to the information presented in the report T-PVS/Inf (2003) 15 *Protecting birds from powerlines: a practical guide to minimising the risks to birds from electricity transmission facilities*, prepared by BirdLife International for the Council of Europe, informing of the negative impact on many species of wild bird (including migratory species) across Europe and the world, from overhead electricity transmission lines, conductors and towers (including those associated with railway infrastructure) through increased mortality due to electrocution, collision and also through reduction of suitability of staging, wintering and breeding areas, especially when powerlines cross open landscapes;

Concerned that a significant number of bird species suffering from electricity transmission facilities are listed in Annex II to the Convention, and that the threat is increasing due to the continuing construction of dangerous electricity transmission facilities;

Concerned particularly that, without action to minimize threats to birds from electricity transmission facilities, many populations and potentially species, including globally threatened species such as *Aquila adalberti* may be severely affected;

Recognising that, especially in arid zones, electrocution of birds on transmission lines can cause disastrous forest fires affecting both wildlife and people and for which electric utility companies can expect to be made liable;

Aware that technical solutions are available to eliminate or reduce transmission line electrocution and collision risk posed to birds and that such solutions which are safer for birds also correspond to a better energy supply and therefore are an advantage to supplying companies; most existing facilities do not incorporate such solutions

Desiring to raise awareness among the public, developers and decision-makers of the serious, widespread risks posed to birds by powerlines and that these can readily be minimised;

Recommends that Contracting Parties to the Convention:

1. take appropriate cost-effective measures to reduce bird mortality from electric transmission facilities taking into account Resolution 7.4 of the Seventh meeting of the Parties of the Convention on Migratory Species of Wild Animals (Appendix 2), applying those cautions to cases where non-migratory species may be affected;

2. apply as far as possible the measures for bird safety suggested in the report mentioned in the *consideranda* above, and in particular those suggested in the enclosed Appendix 1, taking into account that, to ensure appropriately located and safe constructions, the following measures need to be considered:

To avoid electrocution

a) banning of the most dangerous types of pole

b) use of state-of-the-art recommended technical standards for bird safety for new and retrofitted facilities

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

c) encouraging underground location of cables where possible in technical and financial terms; or

d) in locations of particular importance to birds, and where birds may be vulnerable to collision, consents should be conditional upon examination of different routing alternatives prior to and during the planning phase, involving a minimum of one year of ornithological investigations including of bird movements during both day and night ;

e) constructions should obstruct only a minimum of air space in a vertical direction i.e. single-level arrangement of conductor cables with no neutral cable above or clearly visible black-and-white markers should be attached to high-risk cables;

3. consider replacing underground overhead powerlines in areas of exceptional high interest for birds, particularly in protected areas and in areas designated for the Natura 2000 and Emerald Networks for their bird interest.

4. systematically collect information with respect to collisions and electrocutions on electricity transmission lines;

5. communicate to the Standing Committee the relevant steps that have been adopted or envisaged concerning the implementation of this recommendation as well as information on the outcome of measures adopted;

Invites observer states to take note of this recommendation and implement it as appropriate.

APPENDIX 1

Examples of measures that may be considered as appropriate for minimising the negative impacts on birds of electricity transmission facilities are listed for implementation by Contracting Parties. Additional standards, including stricter standards, may be adopted by Contrating Parties. The design and route of electricity transmission lines is critically important to avoiding deleterious impacts on birds.

In considering these examples of possible bird mitigation measures, it is recognised that the electricity industries in Contracting Parties will necessarily have to work at actions that might be taken to protect birds in a wider context. This includes cost, stability of supply and overall safety of transmission lines

A. Criteria for Environmental Assessment

(a) Thorough environmental assessment[1] 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.

(b) The use of standard methods is essential to ensure comparability, adopting the Before-After Control-Impact (BACI) approach with consistent application of these methods before, during and after construction in the vicinity of the power line and a reference area for comparison

(c) There is a need for best practice guidance on standard study methods, to inform the EIA process.

(d) In case of lacking knowledge and in areas of particular importance to birds, a **minimum** one-year baseline field study should be undertaken to determine the use of the study-area by birds.

(e) Post-construction monitoring needs to enable short- and long-term effects and impacts to be distinguished and satisfactorily addressed.

The following list of bird families are indicative of those that should tend to be focal species for environmental assessments where they are at risk as they are considered to be particularly sensitive, or potentially so, to power lines (electrocution, collision, displacement including barrier to movement). Key: 0 - no casualties reported or likely; I - casualties reported, but no apparent threat to the bird population; II - regionally or locally high casualties; but with no significant impact on the overall species population; III - casualties are a major mortality factor; threatening a species with extinction, regionally or on a larger scale.

	(a) due to electrocution	(b) due to collisions
Loons (*Gaviidae*) and Grebes (*Podicipedidae*)	0	II
Shearwaters, Petrels (*Procellariidae*)	0	I - II
Bobbies, Gannets (*Sulidae*)	0	I - II
Pelicans (*Pelicanidae*)	I	II - III
Cormorants (*Phalacrocoracidae*)	I	II
Herons, Bitterns (*Ardeidae*)	I	II
Storks (*Ciconidae*)	III	III
Ibisses (*Threskiornithidae*)	I	II
Flamingos (*Phoenicopteridae*)	0	II
Ducks, Geese, Swans, Mergansers (*Anatidae*)	0	II
Raptors (*Accipitriformes* and *Falconiformes)*)	II - III	I - II
Partridges, Quails, Grouses (*Galliformes*)	0	II - III
Rails, Gallinules, Coots (*Rallidae*)	0	II - III
Cranes (*Gruidae*)	0	II - III
Bustards (*Otidae*)	0	III

[1] For example, as set out in Directive 2001/42/EC of the European Parliament and of the Council '*Assessment of certain public and private projects on the environment'*(EIA Directive) as amended by Directive 97/11/EC.

Shorebirds / Waders (*Charadriidae* + *Scolopacidae*)	I	II - III
Skuas (*Sterkorariidae*) and Gulls (*Laridae*)	I	II
Terns (*Sternidae*)	0 - I	II
Auks (*Alcidae*)	0	I
Sandgrouses (*Pteroclididae*)	0	II
Pigeons, Doves (*Columbidae*)	II	II
Cuckoos (*Cuculidae*)	0	II
Owls (*Strigiformes*)	I - II	II - III
Nightjars (*Caprimulgidae*) and Swifts (*Apodidae*)	0	II
Hoopoes (*Upudidae*) and Kingfishers (*Alcedinidae*)	I	II
Bee-eaters (*Meropidae*)	0 - I	II
Rollers (*Coraciidae*) and Parrots (*Psittadidae*)	I	II
Woodpeckers (*Picidae*)	I	II
Ravens, Crows, Jays (*Corvidae*)	II - III	I - II
Medium-sized and small songbirds (*Passeriformes*)	I	II

B. Precautions for route selection for electricity transmission lines

(a) There should be precautionary avoidance of locating power lines farms in designated or qualifying sites for nature conservation, including Important Bird Areas (IBAs).

(b) As part of effective regional planning, there is a need to identify species and areas of concern, to map potential and potentially sensitive locations for electricity transmission lines based on nature conservation concerns, for example avoidance of migratory corridors and other large concentrations of birds.

C. Technical Standards to protect birds from electrocution

Newly erected power poles and technical hardware should be constructed to exclude the possibility of bird electrocution. Crossarms, insulators and other parts of medium voltage (1KV – 60 KV) powerlines should be constructed so that birds are not able to perch near energized powerlines that might be hazardous.

Mitigating measures should be undertaken on existing power poles and technical hardware in the medium voltage range in locations of particular importance for birds.

Power poles for medium voltage (1KV - 60 KV) should reflect the state-of-the-art in design for bird safety and should follow the detailed design guidelines and criteria described in the catalogue "Vogelschutz an Freileitungen", VDEW-Verlag, 2nd edition, 1991 (Comments on Section 8.10 Bird Protection of German Industry Norm VDE 0210/12.85).

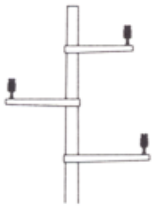
The following describes the most widely used types of power poles worldwide, their potential risk and steps towards mitigation. Recommendations are made for power poles made of concrete, steel, composite steel and wood. This report is based on standards set up by the Vereinigung Deutscher Elektrizitätswerke (1991) as well as studies carried out by the NABU National Working Group on Electrocution (2002).

The safety of the installations depends primarily on:

- how insulators are attached to the poles and
- the actual space between the power cables and other energized and grounded parts.

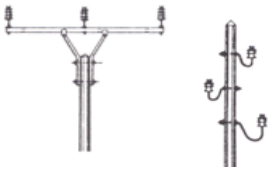
A) POWER POLES WITH UPRIGHT INSULATORS

Power poles, constructed on pre-stressed concrete or metal with upright insulators, are widely used and rank as the most dangerous of all types. The gap between the cables and the crossarm is small.

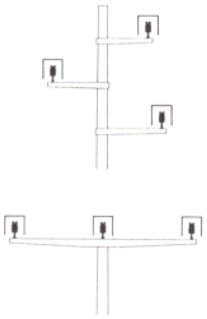


Risk: high

In wet weather **wooden poles** with upright insulators can be a hazard as well as poles that are grounded. For mitigation, the top of armless poles has to be well above the uppermost wire (right).



Mitigating electrocution effectively is possible either by treating poles (a) with insulating caps made of plastic for outdoor use 130 cm in length or (b) insulating powerlines with tubing 130 cm in length. The conductors have to be spaced at a distance of at least 140 cm. If this is not possible, they should be insulated with tubing.



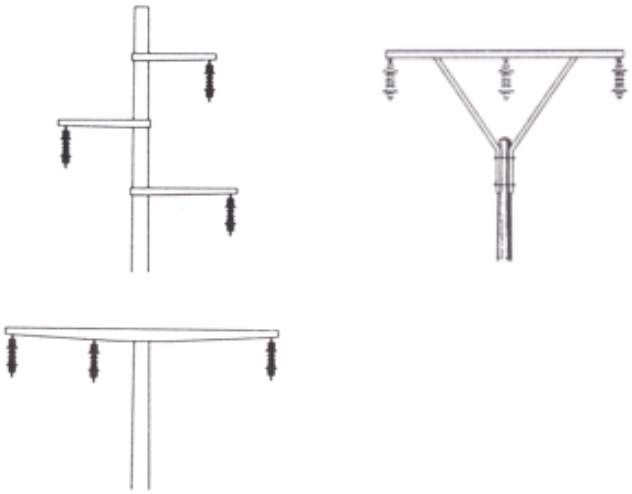
Suggested Practices:

(a) Insulated caps (above)
(b) Tubing (below)

B) POWER POLES WITH SUSPENDED INSULATORS

Poles with suspended insulators are fairly safe provided the distance between a likely perch (crossarm) to the energized parts (conductors) is at least 60 cm. Conductors should be spaced at least 140 cm apart. Hardware that is used to prevent arcing ("St. Elmo´s fire" on both sides of the insulators) should not be used.

Risk: low

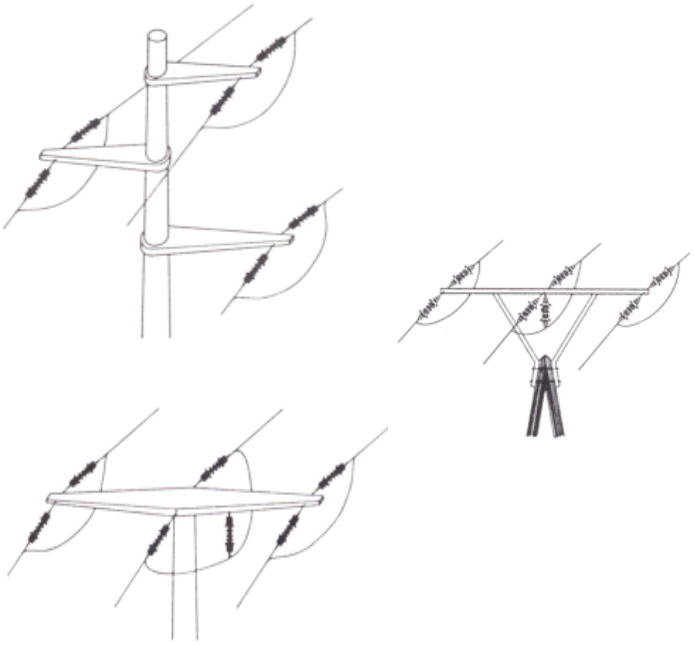


C) STRAIN POLES

Strain poles with powerlines

<u>below</u> the crossarm:

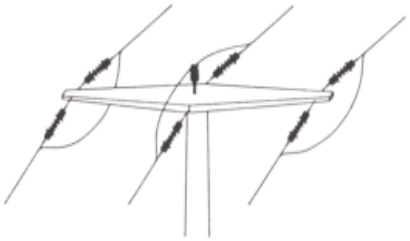
Risk low, if the insulators are long enough (at least 60 cm).

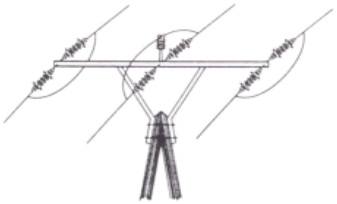


Strain poles with one conductor

above the crossarm.

Risk high (see also Fig. 3):



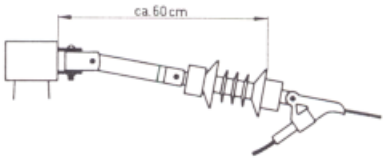


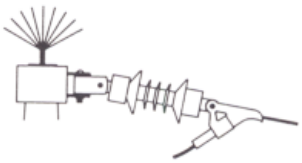
Bird-safe strain poles require insulating chains at least 60 cm in length. Hazardous constructions can be mitigated by
(a) lengthening the chains or
(b) installing perch rejectors (upright "whisk brooms") on the crossarms.

Suggested practices:

Lengthening of the chain (a, above)

Perch rejectors, made of plastic rods (b, below)





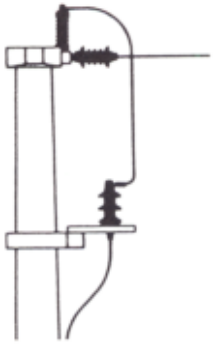
In instance where the conductors run above or too close to the crossarm, (c) tubing should be used. Junction power poles should be treated in the same way (insulation of conductors which come too near to a perching site - closer than 60 cm).

Suggested practices:

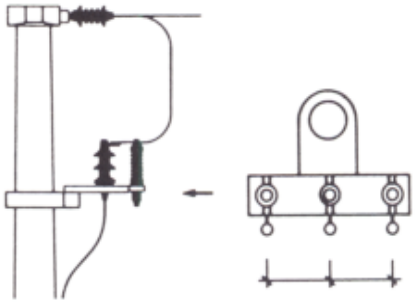
Insulated hood or insulated tubing (c)
(see also Fig. 30)

D) TERMINAL POLES AND TOWER STATIONS

Terminal pole



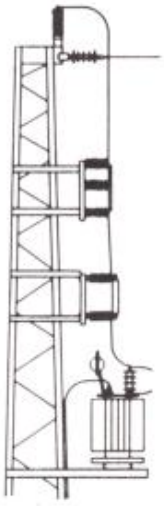
Risk: high



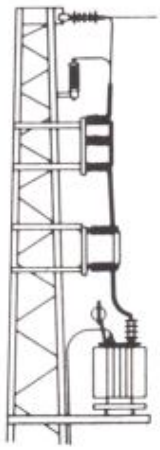
Suggested practices (see legend)

Frequently over voltage reactors extend above the tops of terminal poles and tower stations. This hazard for birds can be avoided if the over voltage reactor is attached below the crossarm and all down leading wires are insulated with tubing. On tower stations all contacts directly above the switch as well as between the switch and transformer should be treated likewise. Hardware used to prevent electrical arcs should not be used (mitigation measure : dismantle).

Tower Station



Risk: high

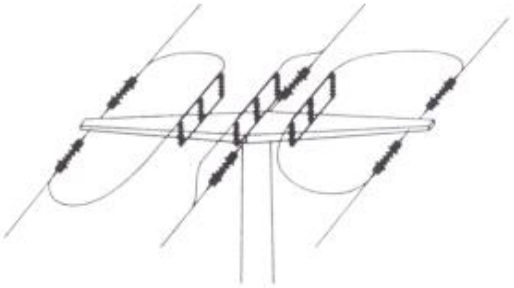


Suggested practices (see legend)

E) SWITCH TOWERS

The safest switch towers have their switches attached below the crossarm. Otherwise, mitigation measures are more complicated and do not provide the same high degree of safety for birds. As hooding is usually not possible, various techniques have been tested.

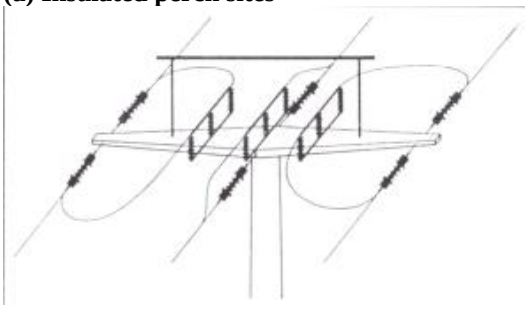
Switch tower



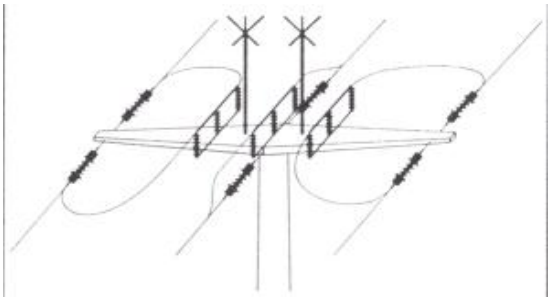
Risk: high

Insulated perch sites can be installed:
(a) lengthwise to the crossarm or (c) at its edge. They should be as long as possible and have a rough texture. Perching deterrents
("St. Andrew`s Cross") (b) installed above the switch keep birds from perching on the poles, as does the installation of acrylic glass rods (c).

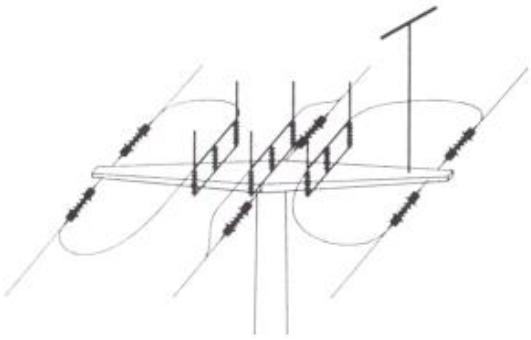
Suggested practices:
(a) Insulated perch sites



(**b) St. Andrew`s Cross**



(c) Insulated perch sites lengthwise to the crossarm and acrylic glass rods



In the case of medium-voltage **railway powerlines**, similar modifications or new constructions must become mandatory: they reduce bird losses and improve railway safety. In Germany, railway engineers, conservationists and government representatives are in the process of elaborating detailed technical standards and design guidelines, which take into consideration bird safety. Fig. 16 illustrates that bird safety can be introduced without large technical effort.

D. Priorities for research to enable impacts of electricity transmission lines to be minimized

(a) Research and monitoring should be implemented by national governments and the energy utility companies, in consultation with relevant experts, to improve our understanding of the impacts of electricity transmission installations. This will be an iterative process that will inform decision-making, appropriate route selection and design of installations. The results of research should be published in international scientific journals, including a summary, preferably in English, to ensure wider dissemination including to electro-engineering periodicals.

(b) Research and monitoring requirements should encompass the following:

i effects and potential population level impacts on birds of electrocution, collision and displacement from habitats and barriers to movement;

ii effectiveness of different designs of installation at minimising bird mortality, while taking account of their cost effectiveness, including durability.

(c) There need to be incentives to ongoing technological development of electricity transmission installations which minimise impacts on birds eg while being durable and removing neutral cables which are at different heights from other cables.

(d) A useful subject for further study is to look in detail at individual case studies to evaluate examples of conflict resolution, case law, or trends in casework throughout the Council of Europe area.

APPENDIX 2

UNEP

Convention on the Conservation of Migratory Species
of Wild Animals

CMS

RESOLUTION 7.4*

ELECTROCUTION OF MIGRATORY BIRDS

Adopted by the Conference of the Parties at its Seventh Meeting (Bonn, 18-24 September 2002)

Recognising that, under Article II of the Convention, Range States agree to take action for the conservation of migratory species whenever possible and appropriate, paying special attention to migratory species the conservation status of which is unfavourable, and taking individually or in cooperation appropriate and necessary steps to conserve such species and their habitats;

Recognising that Article II of the Convention requires all Parties to take action to avoid any migratory species becoming endangered and, in particular, to endeavour to provide immediate protection for migratory species listed in Appendix I to the Convention;

*Recognisin*g that Article III (4) (b) of the Convention requires Parties to endeavour *inter alia* to prevent, remove, compensate for or minimise, as appropriate, the adverse effects of activities or obstacles that seriously impede or prevent the migration of migratory species;

Concerned by the information presented in document UNEP/CMS/Inf.7.21 to the Seventh Meeting of the Conference of the Parties concerning the worldwide and increasing impact of electricity transmission lines, conductors and towers in causing injury and death by electrocution to species of large birds, including migratory species;

Noting that a significant number of migratory bird species that are significantly exposed to electrocution danger are listed in the Appendices to the Convention;

Concerned that such species are increasingly threatened by continuing construction of medium-voltage overhead transmission lines;

Concerned particularly that, without action to reduce or mitigate threats of electrocution, many populations and potentially species, including *Aquila adalberti* and *Hieraaetus fasciatus*, may be severely affected;

Recognising that, especially in arid zones, electrocution of birds on transmission lines can cause disastrous forest fires affecting both wildlife and people;

*Desirin*g to raise awareness among the public, developers and decision-makers of the serious, widespread electrocution risk posed to birds;

Aware that technical solutions are available to eliminate or minimise transmission line electrocution risk posed to birds;

---

* The original draft of this resolution, considered by the Conference of the Parties, was numbered 7.12.

Recognising that power lines that are considered safer for birds also correspond to a better energy supply and therefore are an advantage to supplying companies;

Bearing in mind that collision with power lines is also a problem for birds, and that preventive measures should also be applied to mitigate its effects; and

Bearing in mind that electrocution on electricity transmission lines of railway infrastructure may also be a problem, and preventive measures should be envisaged;

The Conference of the Parties to the
Convention on the Conservation of Migratory Species of Wild Animals

1. *Calls* on all Parties and non-Parties to curb the increasing electrocution risk from medium-voltage transmission lines to migratory birds and to minimise this risk in the long term;

2. *Calls* on all Parties and non-Parties to include appropriate measures in legislation and other provisions for planning and consenting medium-voltage electricity transmission lines and associated towers, to secure safe constructions and thus minimise electrocution impacts on birds;

3. *Encourages* constructors and operators of new medium-voltage transmission lines and associated towers to incorporate appropriate measures aimed at protecting migrating birds against electrocution;

4. *Call*s on Parties and non-Parties to appropriately neutralise existing towers and parts of medium-voltage transmission lines to ensure that migratory birds are protected against electrocution;

5. *Invites* all concerned to apply as far as possible the catalogue of measures contained in document UNEP/CMS/Inf.7.21, which are based on the principle that birds should not be allowed to sit on parts that are dangerously close to the transmission parts under voltage;

6. *Encourages* constructors and operators to cooperate with ornithologists, conservation organizations, competent authorities and appropriate financial bodies in order to reduce the electrocution risk posed to birds from transmission lines; and

7. *Requests* the Secretariat to collect more information with respect to collisions and electrocutions on electricity transmission lines of railway infrastructure and other related issues.

ANNEX II BUDAPEST DECLARATION

BUDAPEST DECLARATION

ON BIRD PROTECTION AND POWER LINES

Adopted by the Conference "Power lines and bird mortality in Europe"

(Budapest, Hungary, 13 April, 2011)

The Conference **"Power lines and bird mortality in Europe"** (the Conference) was co-organised by MME/BirdLife Hungary, the Ministry of Rural Development of Hungary and BirdLife Europe and was kindly hosted by MAVIR (the Hungarian Transmission System Operator Company Ltd.), as part of the official programme of the Hungarian EU Presidency in 2011. It was attended by 123 participants of 29 European and Central Asian countries, the European Commission, UNEP-AEWA, six energy and utility companies, experts, businesses and NGOs. Following the review of state of art of bird safety on power lines across Europe and taking stock of the progress achieved and future challenges in ensuring the implementation of the relevant international and national legislations by the parties and by sharing their national experiences, the participants of the Conference adopted the following Declaration:

We call on the European Institutions (Commission and Parliament) and national governments

- as they formulate, commit to, and pursue an ambitious set of climate, energy and biodiversity conservation targets and strategies to ***reconcile energy generation, transmission and distribution with the protection of wild birds*** *within and beyond protected areas;*
- to maintain high levels of implementation of the EU's environmental acquis including the Birds and the Habitats Directives and relevant international legislation[2] through the application at national or regional level of *effective legal, administrative, technical or other requisite measures for:* ***1) minimisation of the negative impacts of power lines on the natural environment and wild birds and 2) ensuring a system of general protection of wild birds as requested by the Birds Directive, and 3) ensuring that such measures are incorporated in the assessment of investment projects*** *such as the electricity 'Projects of European Interest'* that will be advanced through the follow-up of the EU's Energy Infrastructure Package.

We call on all interested parties to jointly undertake a programme of follow up actions leading to effective minimisation of the power line induced bird mortality across the European continent and beyond. Such actions are, for example:

[2] CMS (Bonn) Resolution 7.4 (2002) and Bern Recommendation 110 (2004) provide strong recognition and acceptance of the birds and power line problem and the availability of effective solutions.

I. Preparatory actions, to be implemented by the end of 2012

Action	Applies to
1. Set up **groups of experts on bird safety on power lines** in each country and at international level to review and consolidate the available technical standards for bird safety on power lines; to develop National and European programmes for prevention and mitigation of bird electrocution and collision; to facilitate exchange of technical, biological and managerial experience and support implementation of such programmes.	Governments : National (EU) National (non-EU) International Industry, NGOs
2. Develop and kick off an **internationally coordinated start-up programme** for knowledge transfer, including the maintenance of an international roster of experts and regular communication on technical and managerial issues; to collate and publish bird-electrocution and collision related literature; to develop internationally standardised monitoring protocols; to expedite a Pan-European movement towards improving bird safety on power lines, including research and development as well as communication projects and voluntary cooperation between industry, public administration, and civil society.	National (EU) National (non-EU) International
3. Support ongoing **exchange of experience between EU and non-EU countries** to reduce and eliminate bird electrocution and collision on power lines.	National (EU) National (non-EU)

II. Planning and standard verification actions, to be completed by the end of 2015

4. **Prioritise power lines** for mitigation in accordance to bird distribution data and in consultation with relevant governmental, industry, academic and NGO experts. **Set up a detailed mid-term strategy and an implementation plan for mitigation** measures.	National (EU) National (non-EU)
5. Develop and approve **national technical standards** and **catalogues of bird-safe power pole designs** (for new lines) and **mitigation measures** (for retrofitting existing lines) relevant for each country. **Promote these standards through formal training** of technical staff and sub-contractors and regular conferences.	National (EU) National (non-EU)

III. Ensure that bird losses are to be eliminated on new and fully reconstructed power lines from 2016 onward

6. Ensure that **new and fully reconstructed power line sections are safe for birds by design.**	National (EU) National (non-EU)

IV. Mitigation actions on existing power lines, to be completed by 2020

7. Ensure that **priority power lines** in term of bird conservation/distribution **and the most dangerous pole types in all lines** are retrofitted/**changed to bird-friendly lines and pole types.**	National (EU) National (non-EU)

V. Monitoring and reporting of progress

8. Promote and support financially an internationally standardised **monitoring of the impacts of power lines** on birds, including the necessary evaluation of the effectiveness of mitigation measures.	National (EU) National (non-EU) Industry
9. To **report every two years** (starting from 2012) the actual progress in the implementation of Resolution 110 of the Bern Convention and of this Declaration.	National (EU) National (non-EU)

ANNEX III - QUESTIONNAIRE SENT TO THE OBSERVER ORGANISATIONS

Strasbourg, 25 October 2012 **T-PVS/Inf (2012) 20**
[inf20e_2012]

CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Standing Committee32nd meeting
Strasbourg, 27th-30th November 2012

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QUESTIONNAIRE FOR THE REPORTING OF PARTIES TO THE BERN CONVENTION ON THE IMPLEMENTATION OF THE ACTION POINTS LISTED IN THE BUDAPEST DECLARATION ON BIRD PROTECTION AND POWER LINES

Document
prepared by
BirdLife International

QUESTIONNAIRE
FOR THE REPORTING OF PARTIES TO THE BERN CONVENTION ON THE IMPLEMENTATION OF THE ACTION POINTS LISTED IN THE BUDAPEST DECLARATION ON BIRD PROTECTION AND POWER LINES
[DOCUMENT T-PVS/INF (2011) 14]

CONTACT DETAILS:

Country:
Organisation:
Name and position of responsible person:
E-mail:
Phone:
Date of completing the form:

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

……
……
……
……

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)
- 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?

……
……
……
……

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:

……
……
……
……

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:

……
……
……
……

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

- No
- Yes, please specify how:

……
……
……
……

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

……
……
……
……

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:

……
……
……
……

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.

……
……
……
……

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.

……
……
……
……

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.

……
……
……
……

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.

……
……
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Please do not hesitate to contact us to help you fill in the questionnaire or for any other questions you may have: BirdLife Europe, Willem Van den Bossche, e-mail: willem.vandenbossche@birdlife.org, Tel.: +32 2 541 07 82