CIGRE Study Committee C3

PROPOSAL FOR THE CREATION OF A NEW WORKING GROUP (1)

WG* N° C3.16	**Name of Convenor : Cécile Saint-Simon** (France) **E-mail address**: cecile.saint-simon@rte-france.com
Technical Issues # (2): 7	**Strategic Directions # (3): 2, 3**
The WG applies to distribution networks (4): Yes	
Title of the Group: Interactions between Electrical Infrastructure and Wildlife	

Scope, deliverables and proposed time schedule of the Group :

Background : Electrical infrastructure interacts with wildlife. For example transmission lines are mainly erected in rural and natural areas, environments where wildlife is present. The operation and maintenance of electrical grids may have impacts on wildlife. On the other hand, wildlife may impact the grid. In both cases, impacts can be positive or negative.

For example, overhead lines represent a risk of collision for birds flying at cable height and to a lesser extent they may constitute a risk of electrocution. By contrast poles are privileged areas for bird nests, and thus help with the preservation of endangered species. However, in some cases, these nests, as well as the presence of birds, can cause trigger faults and electric outages and therefore reduce the quality of electricity supply. Another example is rodents finding shelter nearby or inside substation buildings, which can cause short circuit or damages to equipment and get killed. In some places, snakes wrap around insulators and die at the time they cause a short circuit.

Depending on the environmental context of their grid, TSOs have studied and developed technical solutions to face these issues. Although problems and solutions adopted are different, sharing experience about measures to face difficulties and proactive activities to protect wildlife can be interesting for all TSOs.

Scope:

1. The objective of the working group is to gather knowledge and best practices about **interactions between electrical infrastructure and wildlife** as well as the interaction between wildlife and renewable projects like wind turbines and solar.
2. For a better understanding of these interactions, the working group will pool the results of some scientific studies and will compile experiences from different TSOs.
3. To introduce the works, the working group will conduct an analysis to identify the main drivers regarding TSO´s interest on this issue.
4. The working group will identify technical solutions and mitigation methodologies implemented by TSOs all around the world. Part of the work will be focused on the efficiency of these solutions and the methodology used by TSOs to assess this efficiency. Costs in terms of maintenance and operation will be analyzed. Monitoring and reporting wildlife incidents strategies will be also addressed.
5. The working group will analyze existing studies, projects, solutions, but will not conduct R&D studies or experiments.
6. Lastly, the working group will explore the existing partnerships with scientist, local authorities or Environmental Protection Associations to progress on this issue. Communication tools could be developed to spread a common level of information.

This WG will mainly work on OHL and substations and all the aspects of the grid lifetime (design, construction, operation, maintenance and dismantling) will be considered.

Birdlife issues will be considered first, as all TSOs have to face them. They should represent the most important part of the work of the group. According to the interests expressed by the TSOs, the work will also cover other wildlife issues, which could include the interaction of undersea cables with marine wildlife, the interaction of wildlife with renewable projects like wind and solar as it is a growing issue.

Deliverables:

- Report to be published in Electra or technical brochure with summary in Electra.
- Guideline for managing interactions of electrical networks with wildlife, with a focus on birdlife.
- Tutorial material as appropriate for dissemination of findings

Time Schedule: start: August 2016 **Final report**: August 2019

Comments from Chairmen of SCs concerned :

Approval by Technical Committee Chairman : M. Waldron
Date : 31/05/2016

(1) Joint Working Group (JWG) - (2) See attached table 1 – (3) See attached table 2
(4) Delete as appropriate

Table 1: Technical Issues of the TC project "Network of the Future" (cf. Electra 256 June 2011)

1	Active Distribution Networks resulting in bidirectional flows within distribution level and to the upstream network.
2	The application of advanced metering and resulting massive need for exchange of information.
3	The growth in the application of HVDC and power electronics at all voltage levels and its impact on power quality, system control, and system security, and standardisation.
4	The need for the development and massive installation of energy storage systems, and the impact this can have on the power system development and operation.
5	New concepts for system operation and control to take account of active customer interactions and different generation types.
6	New concepts for protection to respond to the developing grid and different characteristics of generation.
7	New concepts in planning to take into account increasing environmental constraints, and new technology solutions for active and reactive power flow control.
8	New tools for system technical performance assessment, because of new Customer, Generator and Network characteristics.
9	Increase of right of way capacity and use of overhead, underground and subsea infrastructure, and its consequence on the technical performance and reliability of the network.
10	An increasing need for keeping Stakeholders aware of the technical and commercial consequences and keeping them engaged during the development of the network of the future.

Table 2: Strategic directions of the TC (cf. Electra 249 April 2010)

1	The electrical power system of the future
2	Making the best use of the existing system
3	Focus on the environment and sustainability
4	Preparation of material readable for non technical audience