

CIGRE Study Committee C3

PROPOSAL FOR THE CREATION OF A NEW WORKING GROUP

JWG¹ C3/B2.24	Name of Convenor: Frode Johansen (NORWAY) E-mail address: fbj@nve.no
Strategic Directions #²: 3	Sustainable Development Goal #³:15
The WG applies to distribution networks: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	
Potential Benefit of WG work #⁴ : 2,5	
Title of the Group: Methods of reducing electrocution of birds from power lines	
<p>Scope, deliverables and proposed time schedule of the WG:</p> <p>Background:</p> <p>Electrocution of birds on power lines is recognized as a global problem, with thousands of birds killed each year worldwide. Electrocution is mainly a problem on 132 kV power lines and lower voltage networks, due to powerline designs and, more specifically, the spacing between elements that can result in phase-to-phase or phase-to-ground contacts (APLIC 1996).</p> <p>Mainly large, perching birds like bird-of-prey, owls and storks are killed by electrocution. This is a severe problem, because these species tend to have a low reproduction rate, and the loss of individuals can have a negative impact on the population of these species, even leading to localized extinctions. One example of this is the Eurasian Eagle Owl in Norway, where it is believed that approx. 50 percent of the youngsters are killed by electrocution by power lines.</p> <p>It is generally accepted that globally, bird fatalities are largely a result of bird electrocutions on lower voltage networks and therefore it is important to start a new working group to address this issue.</p> <p>Purpose/Objective/Benefit of this work:</p> <p>The objective of the working group is to gather knowledge and best practices on how to reduce bird mortality on lower voltage networks (132 kV and below). The Working Group will focus particularly on the electrocution of birds, but it may include any aspect regarding the collision of birds with low voltage conductors and earth wires.</p> <p>Scope:</p> <p>The working group would investigate and report on:</p> <ol style="list-style-type: none"> 1. Species most prone to be electrocuted and why. Technical designs responsible for bird electrocutions will be analysed, including the designs of low voltage towers/poles as well as the risk posed by pole mounted transformers. 2. Technical solutions and mitigation methodologies implemented by power line owners (mainly DSOs): the group will gather examples from all over the world focusing on those that have shown to be effective in reducing electrocutions on different species. (Although the problems in different countries may be diverse due to the variety of species, a transfer of knowledge between the members of the group will be useful and 	

can help reducing the problem.) Mitigation measures will include new designs to avoid electrocution but also solutions for existing infrastructure.

3. Effectiveness of the solutions and methodology used by owners to assess efficiency. Costs in terms of maintenance and operation will be analysed.
4. To get a complete picture of the problem, the group will work to identify the impact of bird electrocution on customer service. If the impact is not negligible, companies would have an additional incentive to act, and the avoided costs may also be considered in the overall cost analysis.

If possible, the Working Group should aim to cooperate with CIRED members.

Remarks:

The Cigré working group C3-16 dealt with gathering knowledge and best practices related to the interactions between electrical infrastructure and wildlife. However, this group was mainly focused on high voltage networks (TSO's) and bird collisions, leaving a knowledge gap on how to deal with bird fatalities from electrocution on lower voltage grids.

Deliverables:

- Annual Progress and Activity Report to Study Committee
- Technical Brochure and Executive Summary in Electra
- Electra Report
- Future Connections
- CIGRE Science & Engineering (CSE) Journal
- Tutorial
- Webinar

Time Schedule:

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| • Recruit members (National Committees) | October 2023 |
| • Develop final work plan | Q2 2024 |
| • Draft TB for Study Committee Review | Q1 2026 |
| • Final TB | Q2 2026 |
| • Tutorial | Q3 2026 |
| • Webinar | Q3 2026 |

Approval by Technical Council Chairman:

Date: October 16th, 2023



Notes:

¹ Working Group (WG) or Joint WG (JWG),

² See attached Table 1,

³ See attached Table 2 and CIGRE reference Paper: Sustainability – at the heart of CIGRE's work.

⁴ See attached Table 3

WG Membership: refer Comments at end of document

Table 1: Strategic directions of the Technical Council

1	The electrical power system of the future reinforcing the End-to-End nature of CIGRE: respond to speed of changes in the industry by preparing and disseminating state-of-the-art technological advances
2	Making the best use of the existing systems
3	Focus on the environment and sustainability (in case the WG shows a direct contribution to at least one SDG)
4	Preparation of material readable for non-technical audience

Table 2: Environmental requirements and sustainable development goals

	CIGRE selected the 7 SDGs that are the most relevant to CIGRE. In case the WG work refers to other SDGs or do not address any specific SDG, it will be quoted 0.
0	Other SDGs or not applied
7	SDG 7: Affordable and clean energy Increase share of renewable energy; e.g. expand infrastructure for supplying sustainable energy services; ensure universal access to affordable, reliable, and modern energy services; energy efficiency; facilitate access to clean energy research and technology
9	SDG 9: Industry, innovation and infrastructure Facilitate sustainable infrastructure development; facilitate technological and technical support
11	SDG 11: Sustainable cities and communities Increase attention on sustainable and resilient buildings utilizing local (raw) materials, power for electric vehicles, strengthening long-line transmission and distribution systems to import necessary power to cities, developing micro-grids to reinforce the sustainable nature of cities; protect and safeguard the world's cultural and natural heritage; reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and waste management
12	SDG 12: Responsible consumption and production E.g. Promote public procurement practices that are sustainable; address reducing use of SF6 and promote alternatives, encourage companies to adopt sustainable practices and to integrate sustainability information into their reporting cycle, address inefficient fossil-fuel subsidies that encourage wasteful consumption
13	SDG 13: Climate action E.g. Increase share of renewable or other CO ₂ -free energy; energy efficiency; expand infrastructure for supplying sustainable energy; strengthen resilience and adaptive capacity to climate-related hazards and natural disasters; integrate climate change measures into national policies, strategies and planning; improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
14	SDG 14: Life below water E.g. Effects of offshore windfarms; effects of submarine cables on sea-life
15	SDG 15: Life on land E.g. Attention for vegetation management; bird collisions; integration of substations and lines into the landscape

Table 3: Potential benefit of work

1	Commercial, business, social and economic benefits for industry or the community can be identified as a direct result of this work
2	Existing or future high interest in the work from a wide range of stakeholders
3	Work is likely to contribute to new or revised industry standards or with other long term interest for the Electric Power Industry
4	State-of-the-art or innovative solutions or new technical directions
5	Guide or survey related to existing techniques; or an update on past work or previous Technical Brochures
6	Work likely to contribute to improved safety.

Comments:

1) CIGRE Official Study Committee Rules: WG Membership

<https://www.cigre.org/GB/about/official-documents>

- a. Only one member per country (by exception of SC Chair)
- b. WG nominees must first be supported by their National Committee (or local SC Member) as an appropriate representative of their country.
- c. Acceptance of the nomination is granted by the SC Chair and advised to the WG Convener

2) Collaboration Space

<https://www.cigre.org/article/GB/collaborative-tools-2>

CIGRE will provision the WG with a dedicated Knowledge Management System Space.

The WG will use the KMS for drafting collaboration, capture and retention of discussion and meeting records.

Official country WG Members will be sent registration instructions by the Convener.

Official country WG Members may request the WG Convener to allow additional access for an extra national subject matter specialist to aid in the work at the national level, including NGN members.