

CIGRE Study Committee C5

PROPOSAL FOR THE CREATION OF A NEW WORKING GROUP

WG 1° N° C5.37	Name of Convenor: João Carlos Mello (Brazil) E-mail address: jmello@thymosenergia.com.br
Strategic Directions # ² : 2	Sustainable Development Goal # ³ : 9
The WG applies to distribution networks: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	
Potential Benefit of WG work # ⁴ : 2	
Title of the Group: Regulatory Framework on Modernization and Extension of Useful Life of Transmission/Distribution Assets	
<p>Scope, deliverables and proposed time schedule of the WG:</p> <p>Background:</p> <p>Existing transmission/distribution networks in many countries are in a natural process of "ageing", which impacts a large set of network assets. The operation of older assets is becoming a major cost for transmission utilities, where the level of Operation Expenditures (OPEX) is significant compared to the Capital Expenditures (CAPEX) that would be required for modernisation, augmentation or replacement. This cost represents an increasing share of the transmission business outlays.</p> <p>At some point, asset refurbishment and modernization are necessary, but the volume and pace of investments might generate a sudden, hardly sustainable, increase in transmission revenue requirements with an adverse impact on tariffs. The regulatory framework of refurbishing existing grids is key, as many regulators must approve the utilities' projects.</p> <p>This WG will address the regulatory treatment of investments which are required to retain or enhance the network functionality delivered by ageing assets, and the implications of this financial treatment upon decisions to extend the functional lifetime of these aging assets or to deploy alternative solutions. Aspects such as the future strategic requirements of the grid, CAPEX/OPEX interactions, cost benefit analysis, depreciation policies, impacts upon tariffs, timing of investments, the treatment of innovation costs to develop new solutions, and the impact of potential changes to future strategic requirements will be considered.</p> <p>Scope:</p> <p>The proposed WG aims to capture different regulations applied worldwide for modernization and extension of useful life of transmission assets, from generation to distribution connection points to assess how regulators balance the costs and benefits of augmentation and refurbishments for grid users. This will include:</p> <ul style="list-style-type: none"> • Depreciation policies: grid operators typically advocate to accelerated depreciation rates, in order to get higher/anticipated revenues from this tariff component; the advantage turns to a backdrop when the asset then continues its life beyond the recognised regulatory lifetime; • Requirements of the grid: proposal and evaluation metrics for monitoring and performance of the electrical network, such as levels of reliability and resilience of the grid, transmission performance and availability, adequacy, operating reliability; • Regulators' recognition to release of cap of increased OPEX for extended life assets, on the basis that they avoid/defer new CAPEX, more expensive for the tariff payer • Regulatory incentives for all interventions aimed at stretching asset utilisation rates, which are often OPEX in nature, or even Innovation / R&D type of costs, again on the basis that the final outcome for the tariff payer is an overall reduction of burden. 	

Remarks:

This WG has crossovers with several other domains of work, for example: asset management methodologies, best practices, and economics. As a result, nominations will be invited from SC C1 and other Study Committees. Clearly, the scope of WG is focused on regulatory matters of transmission or distribution grid ageing, hence technical inputs from other SC based on asset management, planning and operation concerns will be considered as the basis of support.

Deliverables:

- Technical Brochure and Executive Summary in Electra
- Electra Report
- Future Connections
- CSE
- Tutorial, Webinar

Time Schedule: start: February 2023

Time Schedule:

- Recruit members (National Committees) Q1 2023
- Draft TB for Study Committee Review Q4 2024
- Final TB Q4 2024
- Webinar Q1n 2025

Approval by Technical Council Chairman:

Date: February 16th, 2023



Notes: ¹ Working Group (WG) or Joint WG (JWG), ² See attached Table 1, ³See attached Table 2 and CIGRE reference Paper: Sustainability – at the heart of CIGRE's work.
⁴ See attached Table 3

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 does 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 CO2-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 re WG Membership:

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

No more than one member per country unless by SC Chair exception.

WG nominees must first be supported by their National Committee (or local SC Member) as an appropriate representative of their country.

Acceptance of the nomination is granted by the SC Chair and advised to the WG Convener

- 2) CIGRE will provision a dedicated Space for the Working Group in the Knowledge Management System. The WG will use the KMS for drafting collaboration, capture and retention of discussion and meeting records. WG Members will be sent registration instructions by the Convener.

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