

PROPOSAL FOR THE CREATION OF A NEW WORKING GROUP¹

WG N° C3.19	Name of Convenor: James Hart (AUSTRALIA) E-mail address: jhart@ausgrid.com.au	
Strategic Directions #²: 3, 4		Technical Issues #³: 3, 7, 9, 10
The WG applies to distribution networks⁴: Yes		
Potential Benefit of WG work #⁶: 1, 2, 3, 5, 6		
Title of the Group: Responsible management of the Electric and Magnetic Field Issue		
Scope, deliverables and proposed time schedule of the Group:		
Background:		
<p>EMF research remains active and EMF continues to be a major issue for some businesses both nationally and internationally. Since the WHO 2007 review, there have been over 1200 peer reviewed studies regarding EMF and possible health effects.</p> <p>In 2017, the CIGRE working group C3.01 concluded that considering that electric and magnetic fields have been extensively studied worldwide, a causal relationship with any health outcome is very unlikely¹.</p> <p>While the evidence falls short of establishing any adverse health effects, EMF can be significant influencing factor for new projects.</p> <p>Examples of recent international EMF experiences include - a major interconnector being cancelled, homes needing to be purchased and compensation required be paid to communities up to 1km from a new transmission line.</p> <p>In 2001 the International Agency for Research on Cancer (IARC) classified power-frequency magnetic fields as “possibly carcinogenic”. Given the high standing of IARC, this classification often forms the main argument of opponents. There are no major studies underway which are likely to change the underlying reasoning and IARC is reluctant to put anything in the category of ‘probably not’.</p> <p>While the evidence falls short of establishing any adverse health effects, concerns are amplified by the way people perceive risks and the amount of publically available information (much of it incorrect) freely available on the internet.</p> <p>Industry has been actively managing the EMF issue since the early 80s. However, many key industry personnel have retired or are approaching retirement. This combined with the worldwide trend for downsizing and increased staff turnover has resulted in a reduction of knowledge and expertise around responsible EMF management.</p> <p>In light of the continuation of EMF research, particularly from less developed countries, vocal and better connected advocates and a classification that looks likely to remain, industry is likely to face some challenges in the years ahead.</p> <p>If not managed consistently, openly and responsibly the issue can have serious implications for businesses.</p> <p>The purpose of this brochure is to provide accurate, consistent, industry-wide information for guidance to the electricity distribution and transmission industry to address the EMF issue.</p>		

¹ Living with electric and magnetic fields (EMF) No. 292 - June 2017 Electra

Scope:

The scope of this working group applies to both public and occupational exposure situations associated with electricity networks and covers:

1. power frequency and DC EMF basic information,
2. the science of EMF and health,
3. EMF exposure guidelines,
4. assessing compliance against exposure guidelines,
5. measuring and calculating EMF,
6. methods to reduce magnetic fields,
7. prudent EMF management,
8. medical implants,
9. signage,
10. social aspects of EMF, and
11. EMF communication.

The working group does not cover:

1. radio frequency (RF) fields,
2. smart meters, and
3. EMF management for electrical wiring in industrial, commercial and residential premises and from electrical appliances or metering.

Deliverables:

- Technical Brochure and Executive summary in Electra
- Electra report
- Tutorial⁵

Time Schedule: start: May 2018

Final Report: August 2020

Approval by Technical Committee Chairman:

Date: 11/02/2018



Notes: ¹ or Joint Working Group (JWG), ² See attached Table 2, ³ See attached Table 1, ⁴ Delete as appropriate, ⁵ Presentation of the work done by the WG, ⁶ See attached table 3

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
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 (ref. 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

Table 3: Potential benefit of work

1	Commercial, business or economic benefit 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 direction
5	Guide or survey related to existing techniques. Or an update on past work or previous Technical Brochures
6	Work likely to have a safety or environmental benefit