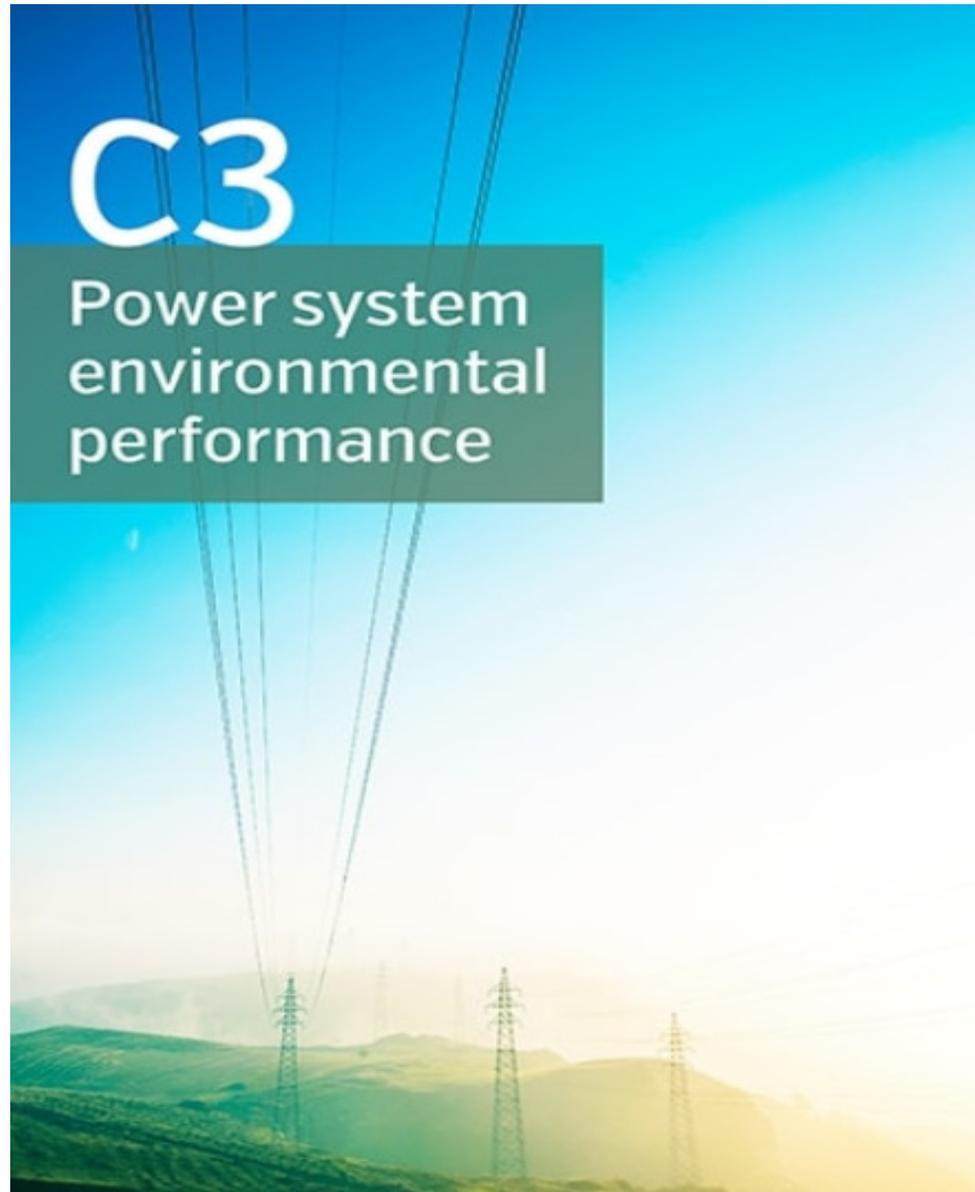




## C3 - Power system environmental performance



*CIGRE Italian National Committee Annual Meeting – Rome - November 29, 2018*



## C3 - Power system environmental performance

*Questa presentazione è stata preparata sulla base di materiale documentale interno al SC C3, gentilmente messo a disposizione dal Chairman, Mr Henk Sanders, che si ringrazia*

*This presentation has been prepared on the basis of some SC C3 internal documents, kindly made available by the Chairman, Mr Henk Sanders, whose cooperation is gratefully acknowledged*

*A. N. Negri  
Ricerca sul Sistema Energetico – RSE Spa*



## C3 - Power system environmental performance

- ✓ SC Scope and Contacts
- ✓ Membership
- ✓ Last Publications
- ✓ Active and NEW Working Groups
- ✓ C3 Technical Directions and WGs
- ✓ Possible further new Working Groups
- ✓ Paris General Session 2018
- ✓ Preferential Subjects proposed for the 2020 General Session
- ✓ 2019 Events



## C3 - Power system environmental performance

### Scope

The scope of the [Study Committee C3](#) covers the identification, assessment and management of the interactions between the natural and social environments, and the end-to-end electric power system, recognizing the importance and influence of a wide range of stakeholders and communities. Recommendations for appropriate monitoring, management and control measures in fields such as greenhouse gases, air, soil and water pollution, electromagnetic fields, noise, visual amenity, land use and consequences for flora and fauna.

#### Areas of attention include:

- Environmental impacts of power system development and operation, sustainable development vs. economic development, risk assessment and the economics of impact containment, power system efficiency and the environment
- Stakeholder engagement and communication, effective communication with the public and regulatory authorities, public acceptance of power system infrastructure
- Tools and measures for quantifying, controlling and mitigating the environmental impact such as life-cycle assessment (LCA), environmental product declarations (EPD), global benchmarking, etc.
- Global environmental changes relevant to the power system, awareness of the activities of global organizations in the environmental field and establishing appropriate co-operations and liaisons.

#### **Chairman**

**Henk Sanders**

[Henk.Sanders@tennet.eu](mailto:Henk.Sanders@tennet.eu)

#### **Secretary**

**Mercedes Vazquez Miranda**

[mmvazquez@ree.es](mailto:mmvazquez@ree.es)



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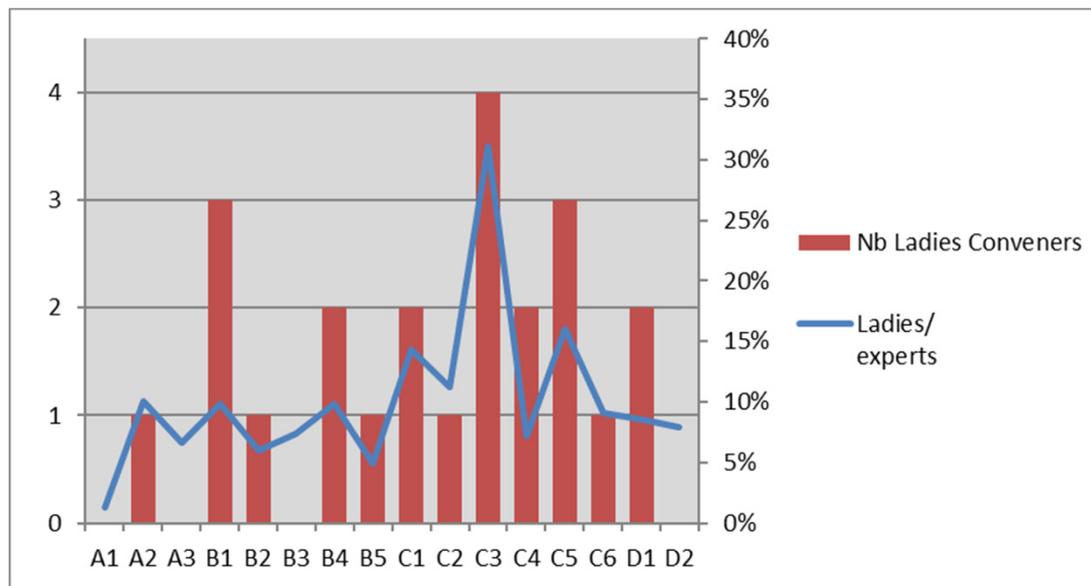
### Membership

SC C<sub>3</sub> has 26 regular members from 24 countries (including the Chairman and the Secretary):

- strong renewal process: 11 members leaving, 10 new members
- 4 additional Members (young members)
- 10 Observer Members

Strategic Advisory Group: 10 Members (including Chairman and Secretary): review of the SC C<sub>3</sub> Strategic Plan is ongoing.

To improve the connection with other study committees, C<sub>3</sub> nominated “ambassadors” at the SC B<sub>1</sub>, B<sub>2</sub> and B<sub>3</sub>.



Women in  
CIGRE



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### *Publications*

#### Last publications:

- Reference Paper *Living with electric and magnetic fields –EMF* (published in Electra June 2017)
- TB and article Electra C3.05 *Environmental impact of dispersed generation* (2017)
- TB and article Electra C3.08 *Sustainable development performance indicators for electric power generation* (2016)
- Reference Paper “*Sustainability – At the Hearth of CIGRE’s Work*” (published in Electra October 2018)

#### Next publications:

- JWG C3/B1/B2.13 to be published after Paris 2018



## C3 - Power system environmental performance

### Active (**NEW**) Working Groups (1)

WG TITLE	CONVENOR
<b>WG C3.01 EMF and Human Health</b> Tutorial in Paris session 2018, first tutorial of SC3	Michel Plante (CA).
<b>WG C3.09 A Corridor management</b> <b>This WG has been relaunched.</b> <b>It will update and finish the WG C3.09 work. A new TOR has been approved.</b>	Aleš Kregar (SL)
<b>WG C3.12 Methodologies for Greenhouse gas inventory and reporting for T&amp;D utilities.</b> The intention is to relaunch the WG after some years without activity. A few members will help to review and update the TOR (in the WG meeting during Paris session). Some new members can join the group.	Mercedes Vázquez (ES)
<b>JWG C3/B1/B2.13 Environmental issues of high voltage transmission lines for rural and urban areas (JWG with SC B1 and B2).</b> The report has been finished (under revision) and will be published after Paris session. A Tutorial will be presented in Aalborg session.	Hector Pearson (UK)
<b>WG C3.14 Impact of environmental liability on transmission and distribution activities.</b>	Vincent Du Four (BE)



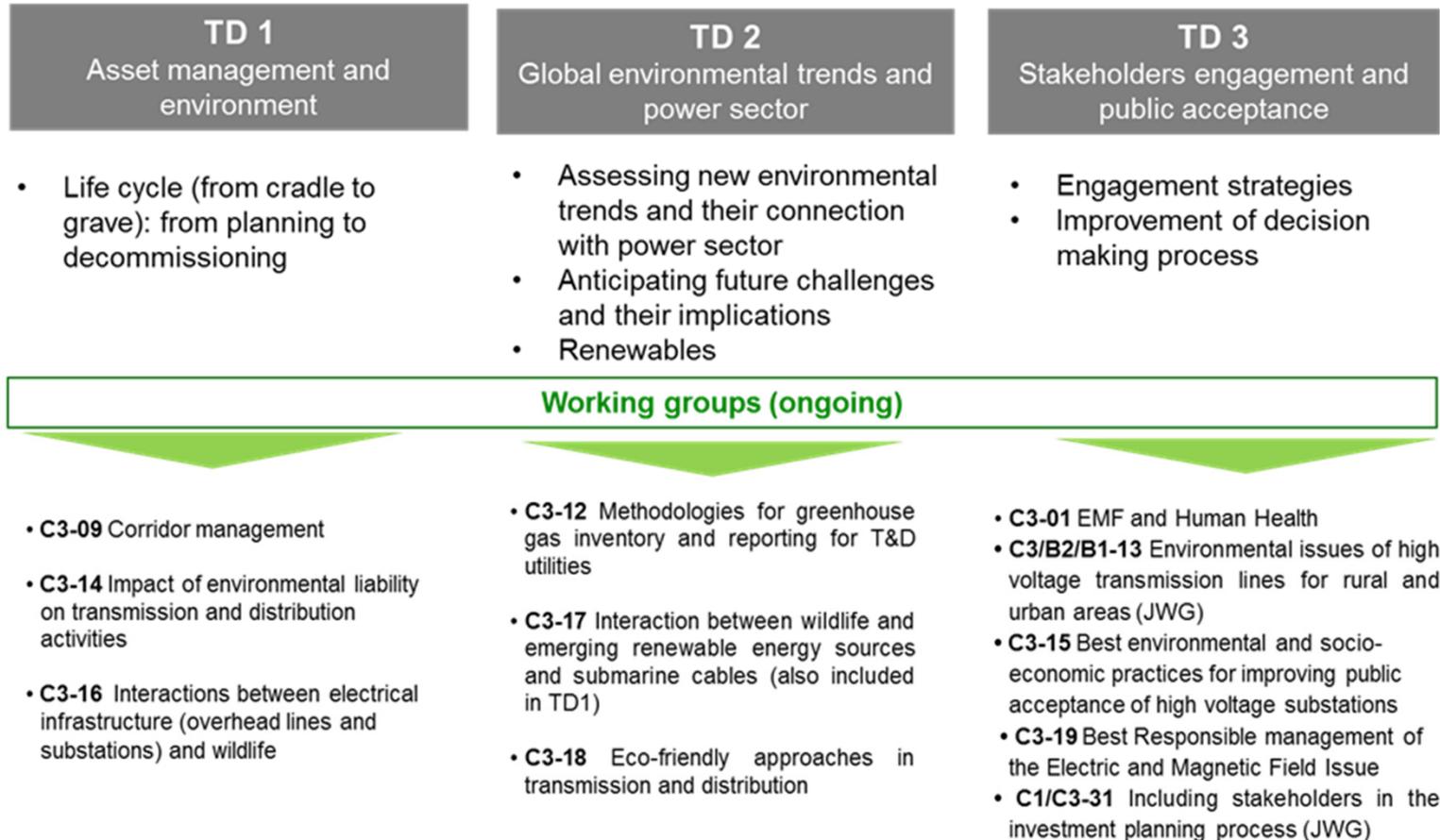
## C3 - Power system environmental performance

### Active (**NEW**) Working Groups (2)

WG TITLE	CONVENOR
<b>WG C3.15 Best environmental and socioeconomic practices for improving public acceptance of high voltage substations</b>	Marijke Wassens (NL)
<b>WG C3.16 Interactions between electrical infrastructure (overhead lines and substations) and wildlife</b>	Cécile Saint-Simon (FR)
<b>WG C3.17 Interaction between wildlife and emerging renewable energy sources and submarine cables</b>	Katherine Palmquist (USA)
<b>WG C3.18 Eco-friendly approaches in transmission and distribution</b>	Anne-Sophie Desaleux (FR)
<b>WG C3.19 Responsible management of the Electric and magnetic Fields Issue</b>	James Hart (AU)
<b>WG C3-20 Sustainable Development Goals in the Power Sector</b> <b>The WG has recently been approved. An informal meeting will take place in a pub near Palais de Congrès.</b>	Christian Capello (AT)

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### TECHNICAL DIRECTIONS SC3





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### Further new possible Working Groups

- ✓ SF6
- ✓ Stakeholder engagement in planning process
- ✓ Reduce footprint in whole LCA
- ✓ Vegetation management for substations
- ✓ Environmental effects of decommissioning

## C3 - Power system environmental performance

### Paris General Session 2018

The SC C3 contributed to the Opening Panel, focused on Sustainability.

The SC C3 Discussion Group Meeting was chaired by the Study Committee Chairman, with Mrs Sannem, Mr Hart and Mr Funston as Special Reporters.

35 papers were submitted, based on three Preferential Subjects:

- PS1: Effectiveness on environmental prevention, mitigation and compensation measures
- PS2: Mitigation of the visual impacts of electrical assets to increase public acceptance
- JPS3: Joint PS with B2 Technical and environmental aspects of OHL

Based on the received papers the Special Reporter prepared the Special Report with 19 questions, which for the Group Discussion Meeting attracted 25 prepared contributions from different countries.

The joint Discussion Meeting with SC B2 attracted 53 prepared and 30 spontaneous contributions together provided many interesting ideas that gave rise to useful discussions.

SC B2 and C3 must continue their collaboration on the important categories of :

- Bird mitigation devices and technology.
- Sustainable design of towers and ROW management
- Efficient and cost effective management of servitudes and vegetation management.

Life cycle analysis was identified as a future area of joint collaboration.





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### Paris Session 2020. Preferential subjects.

- ✓ PS 1: Sustainable development goals (SDG's) of the UN. (Christian Capello)
- ✓ PS 2: Environmental impact of energy transition (William Hartman)
- ✓ PS 3: Relation of wildlife and electric infrastructure (Cécile Saint Simon)



## C3 - Power system environmental performance

### 2019 Events

- ✓ Denmark, Aalborg (3-6 June 2019) Symposium: "Going offshore – challenge of the future power grid"
- ✓ China, Chengdu (September 2019)

### Aalborg Symposium Preferential Subjects

- Offshore wind power network connection technologies and equipment: subsea and underground cables; HVAC and HVDC connections; wind farm power quality, and transient and harmonic stability.
- Operation and system stability of weak networks with wind DC or AC infeed.
- (Offshore) HVDC technical and economic system perspectives, including multi-terminal DC networks, DC/AC hybrid transmission.
- Subsea cable technology and lifecycle.
- Upgrades and restructuring of onshore networks with mixed usage of HVAC, HVDC, overhead lines, underground and subsea cables.
- Changes and advances to split between roles and functionalities of distribution and transmission networks. Advances in exchange of data and services between DSO and TSO.
- **Eco-design and environmental concerns of offshore and onshore transmission solutions, including asset management and public acceptance.**



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