



# Future Direction of CIGRE

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President of CIGRE*

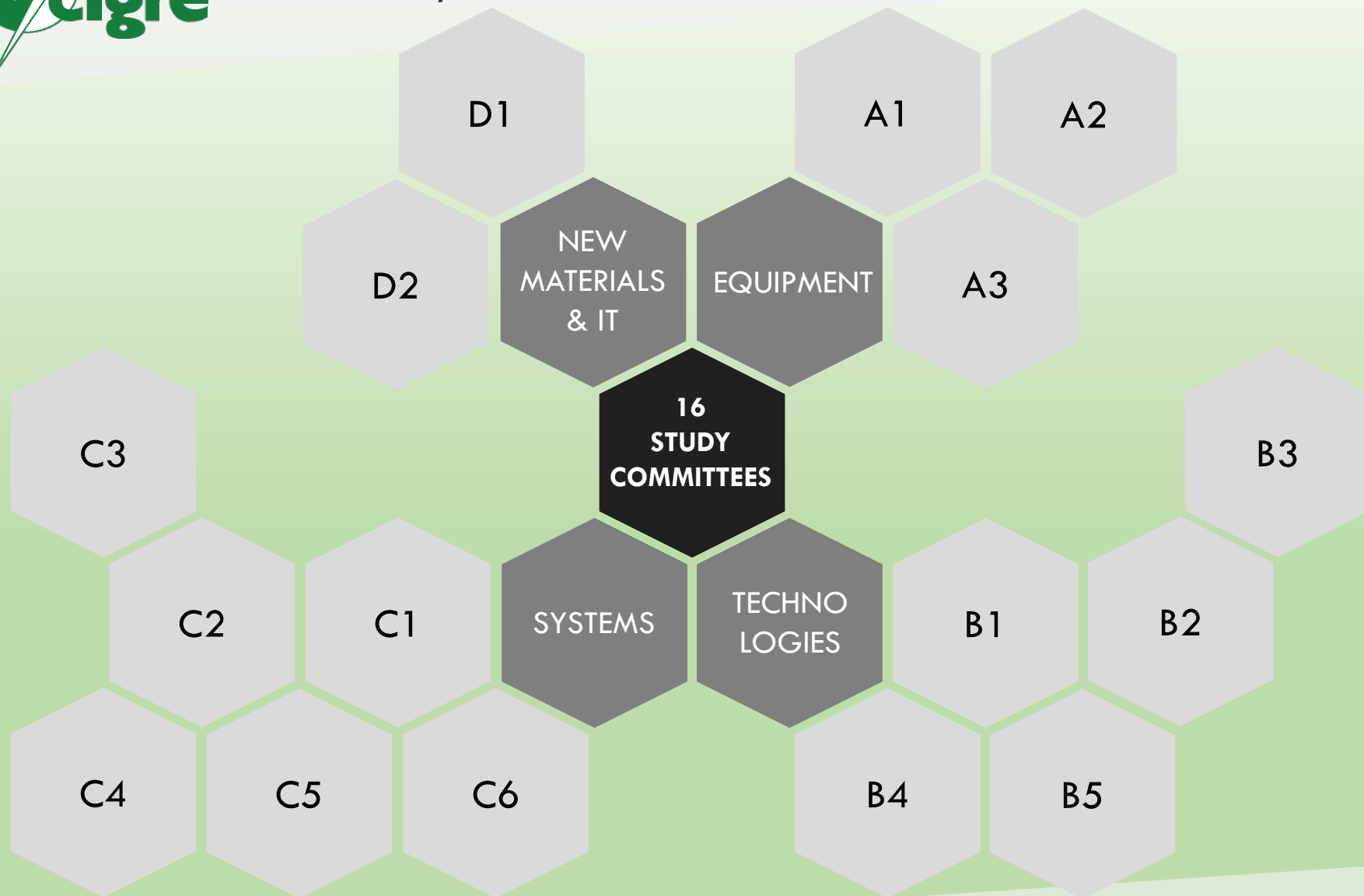


Founded in 1921, CIGRE, the **Council on Large Electric Systems**, is an international non-profit Association. CIGRE addresses issues related to the development, operation and management of electric power systems as well as design, construction, maintenance and disposal of equipments and plants.

**Our Mission:** To promote and organize collaboration with experts from all around the world, by sharing knowledge and joining forces to improve the electric power systems of today and tomorrow.



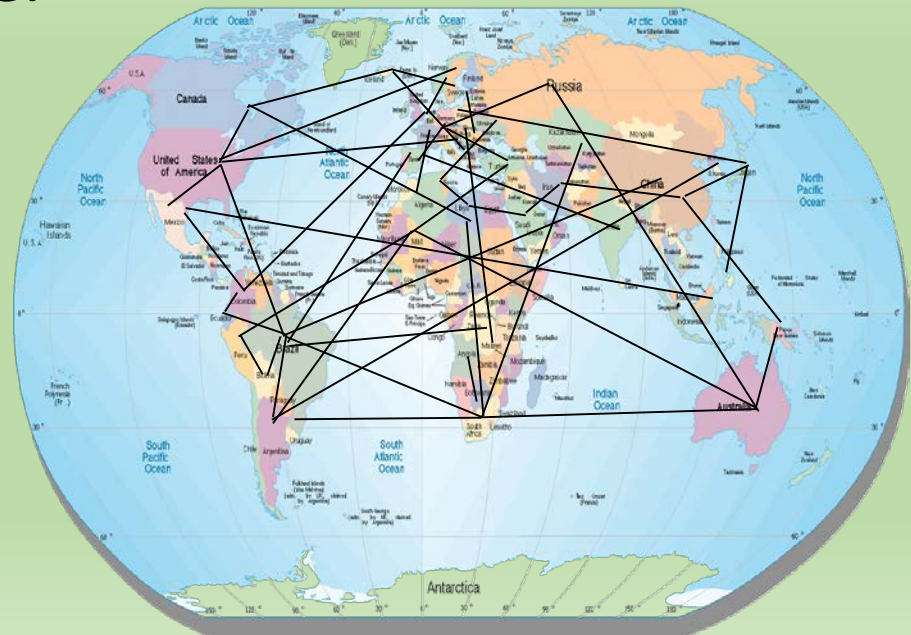
# Study Committees





# CIGRE's Value

- Since 1921 about 1500 Technical Reports and Technical Brochures prepared by International Working Groups → collective unbiased knowledge
- Cigre is a global network connecting engineers and scientists all over the world

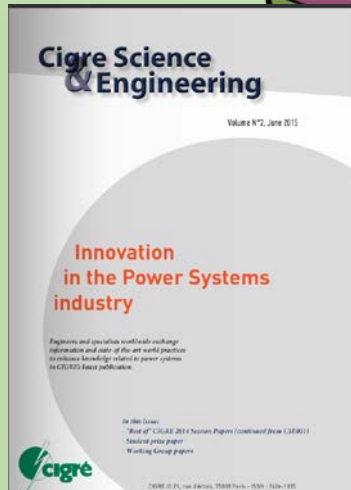


# Cigre's Publications

# Technical Brochures



# New!!



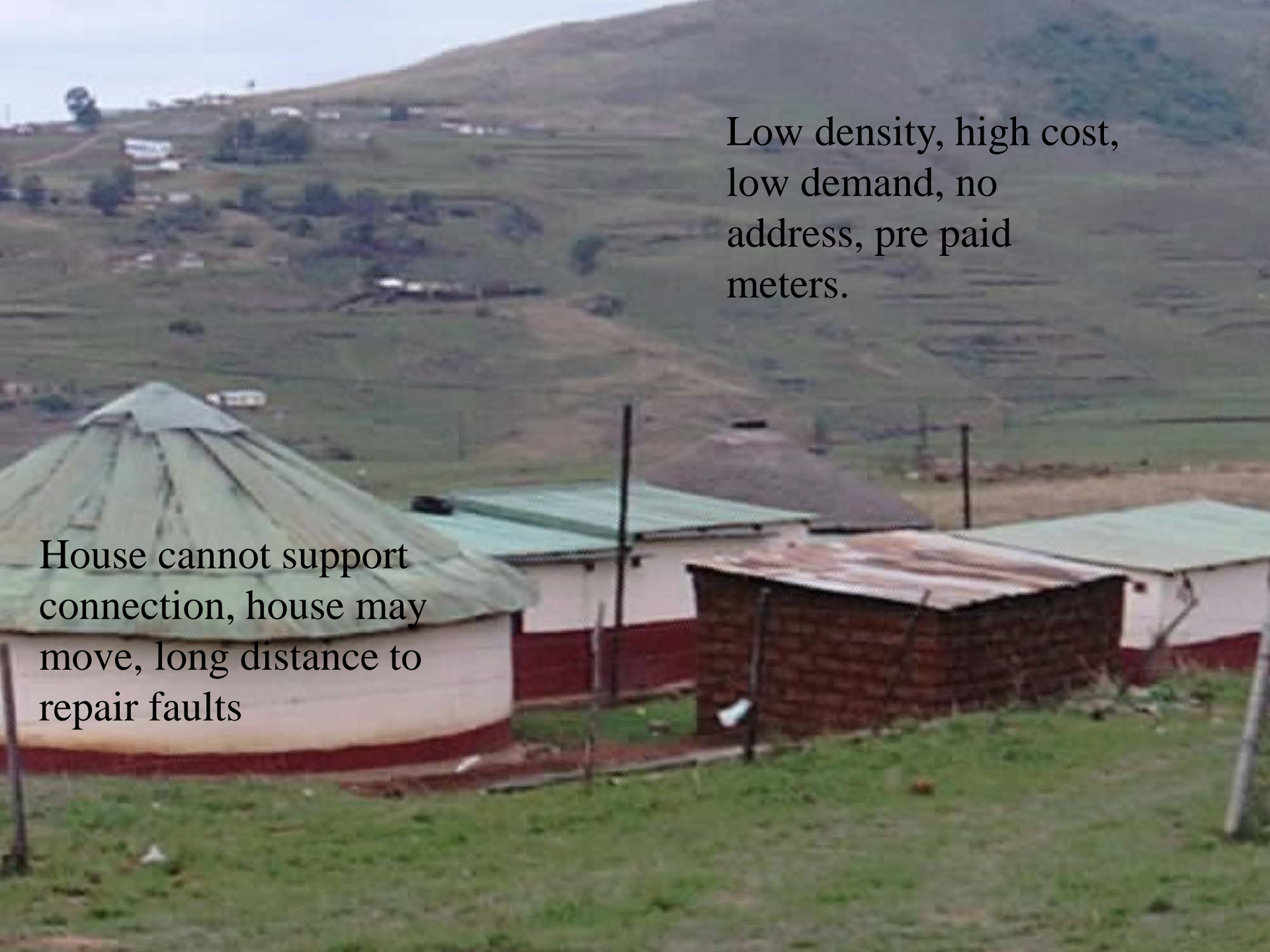
# Green Books



# GAPS- Direction

- Documents not visible on Google Scholar – best kept secret
- Distribution topics not generally dealt with
  - Not dealing with technology to supply non electrified areas
- Agility to react rapidly to issues
  - Looking into unbiased position papers
- Young engineers and women welcome
- Webinars, video, teleconferencing for WG's, tutorials
- Enable small NC's to host SC meetings.





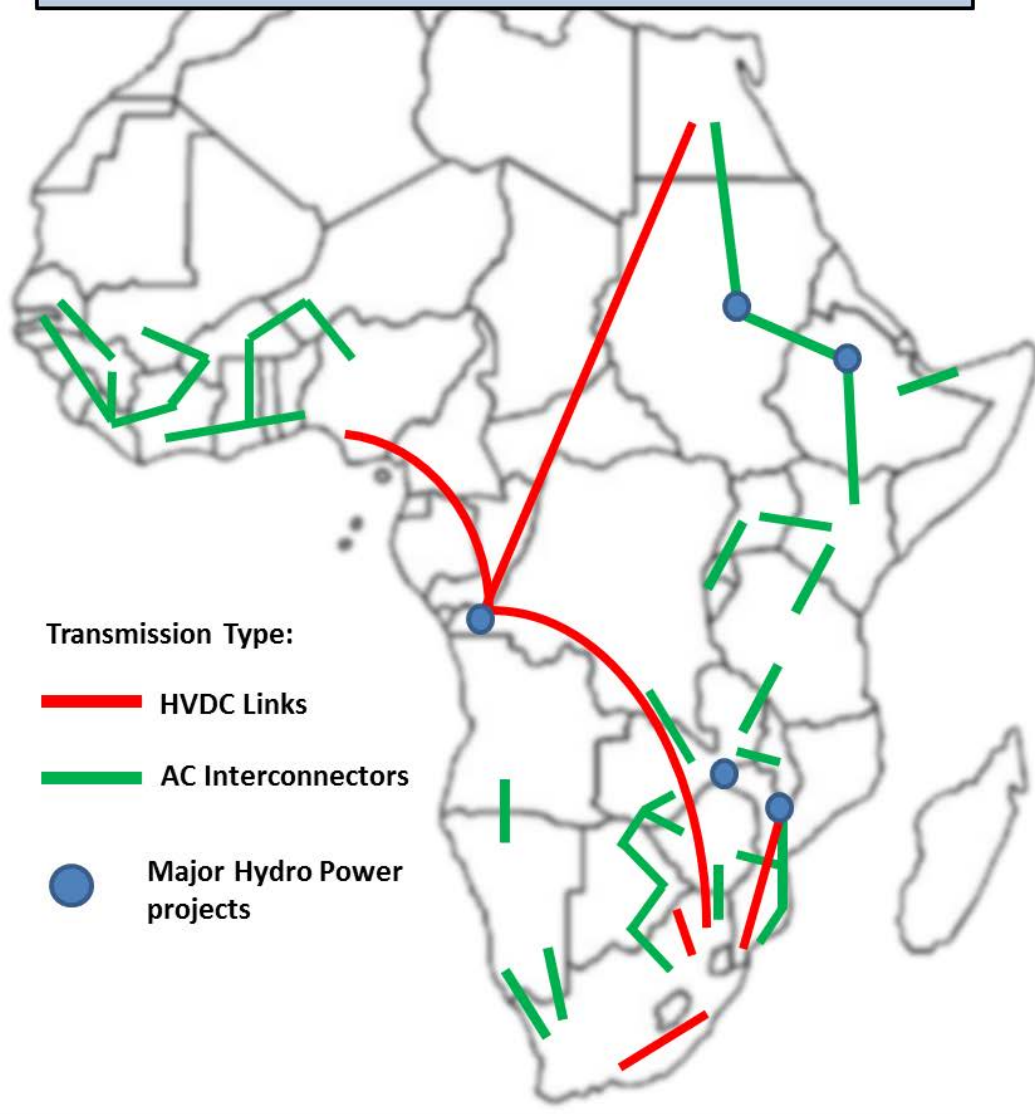
Low density, high cost,  
low demand, no  
address, pre paid  
meters.

House cannot support  
connection, house may  
move, long distance to  
repair faults



# Transmission projects in Africa

## Transmission Projects under consideration in Africa



### International HVDC Projects:

- DRC to South Africa
- DRC to Nigeria
- DRC to Egypt

### Internal HVDC projects

- Mozambique – north to south
- South Africa 1 – north to central
- South Africa 2 – along east coast

### AC International Interconnections (220kV and greater)

- South Africa – Namibia
- Namibia – Angola
- South Africa – Botswana – Zimbabwe – Zambia
- South Africa – Zimbabwe – Mozambique
- Zambia – Malawi
- Zambia – Tanzania
- Zambia – DRC
- Tanzania – Kenya
- Kenya – Uganda – Rwanda – Burundi
- Kenya – Ethiopia
- Ethiopia – Sudan – Egypt
- Benin – Togo – Ghana
- Ghana – Cote d'Ivoire
- Ghana – Burkina Faso – Niger – Nigeria
- Cote d'Ivoire – Mali
- Cote d'Ivoire – Liberia – Sierra Leone – Guinea – Guinea Bissau – Senegal



# Size of Africa





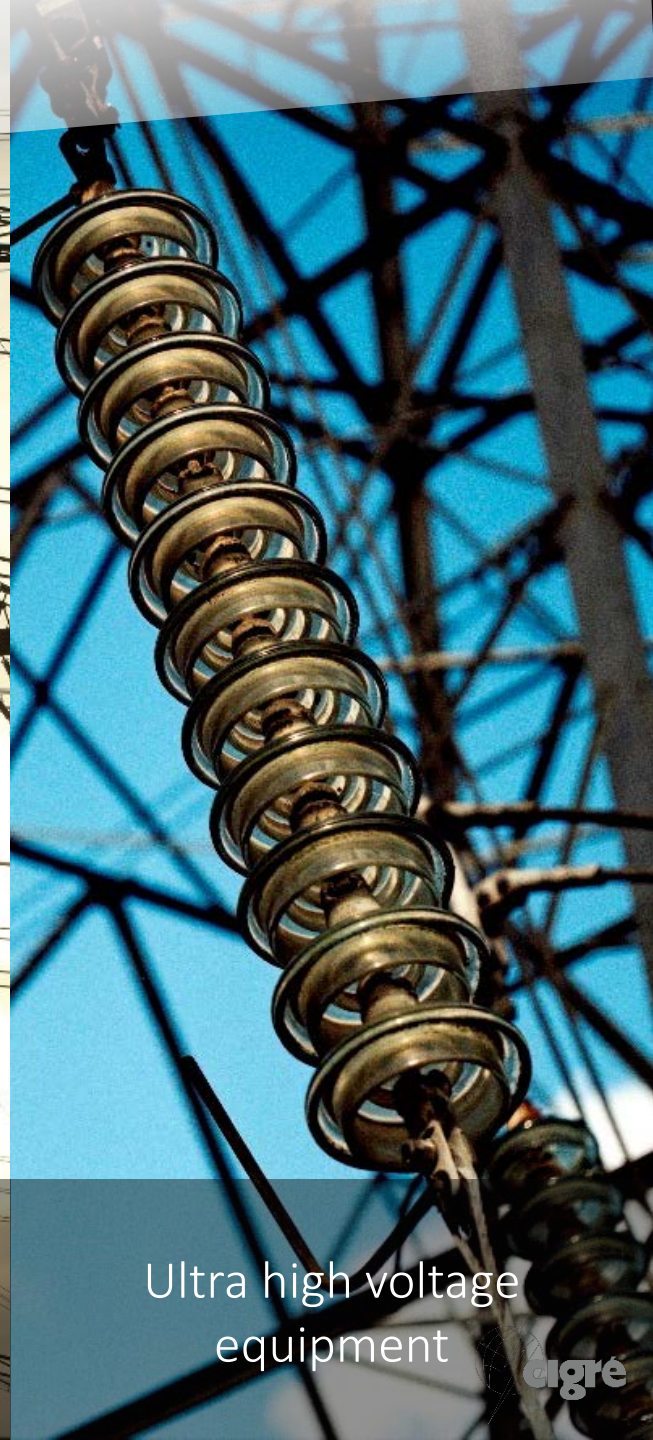
# Available Technologies



Intelligent and compact  
substation



Compact and high capacity  
Overhead lines



Ultra high voltage  
equipment







# Available Technologies



Polymer Cables



DC power transfer (MV-HV)



Information &  
Communication  
Technologies

# Conclusion

- Facing many technical challenges in foreseeable future
  - Renewables, shutting nuclear, long high power transfer corridors, non- electrified areas, electrification.
- Cigre organization critical to share issues and develop solutions
- More visible, covering Distribution and Transmission, encouraging young engineers, and women, more agile, using technology for sharing.





# Acknowledgements

- Thanks to the organisers for inviting me to speak
- K. Frohlich (Past President) for certain slides