

# The world's foremost power system knowledge development programme



CIGRE operates a unique global structure, bringing together a diverse, on the ground community of professionals to form a proven collaborative framework. Outcomes are the knowledge, connections and solutions needed by the world's power system professionals to get their jobs done.



## CIGRE's strategic focus

As shown on the reverse, CIGRE's global community influences the strategic and technical direction of the knowledge programme based on real world experiences. This is achieved through a range of bodies within the organisation, including an Administrative Council that has representatives from each of the National Committees and the Steering Committee which is the executive body of CIGRE.

These groups periodically review and set CIGRE's strategic focus, which is then interpreted by the experts of the Technical Council into a clear set of technical strategies and action plans. These in turn are applied to the programme of work undertaken within the 16 domains that CIGRE's Study Committees work in.

Using this approach CIGRE's work remains relevant to the key factors influencing the world's power systems today and in the future.

## CIGRE current strategic focus

- Capturing all relevant aspects of the Energy Transition
- Industry Transformation on equipment, planning, design and operation in Transmission & Distributions systems
- Environment, sustainability and governance paradigms affecting the company's business models
- System Performance with high penetration of Inverter Based devices
- Hydrogen as a new energy driver
- Unbiased information for all stakeholders

## Current pressing challenges focused on

- Renewable energy sources
- Compliance to environmental requirements
- Limitations to build new transmission infrastructures
- Architecture of Transmission and Distribution networks and systems
- Maintaining the existing power systems by Artificial Intelligence tools
- Transmission of large amounts of power over long distances
- Cyber security and very fast communication, control and supervision systems
- Intermittency of renewable power generation
- Market Regulation enhancements
- New Gases to replace SF6

## CIGRE's technical direction

To translate CIGRE's strategic direction into specific technical knowledge CIGRE works within 16 domains of work, each with its own expert global Study Committee and programme of work. This is the 'engine room' that drives CIGRE's power system knowledge development and covers the key technical domains of the power system.

## CIGRE's Study Committees and domains of work

### Group A – Equipment:

- A1 Rotating electrical machines
- A2 Power transformers and reactors
- A3 Transmission and distribution equipment

### Group B – Technologies:

- B1 Insulated cables
- B2 Overhead lines
- B3 Substations and electrical installations
- B4 DC systems and power electronics
- B5 Protection and automation

### Group C – Systems:

- C1 Power system development and economics
- C2 Power system operation and control
- C3 Power system environmental performance
- C4 Power system technical performance
- C5 Electricity markets and regulation
- C6 Active distribution systems and distributed energy resources

### Group D – New materials and IT:

- D1 Materials and emerging test techniques
- D2 Information systems and telecommunication

## Knowledge development and sharing

This programme is then worked on by the community and National Committees through more than 250+ Working Groups, as well as collaborative events across the globe. Up to 40 new Working Groups are added each year to address identified important emerging issues.

All of this knowledge is ultimately shared through global events and documented in comprehensive technical publications, which can be downloaded from e-cigre.

