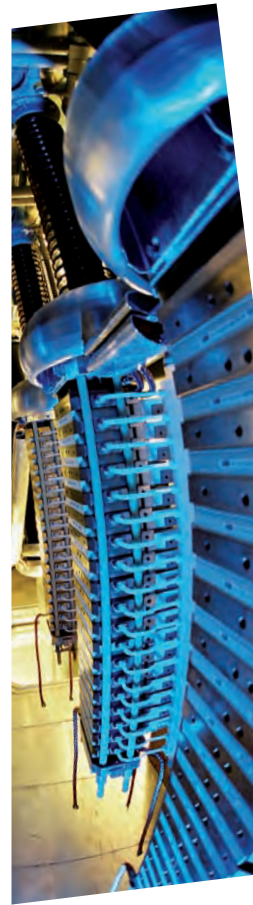


Call for papers

# CIGRE SESSION 44

26<sup>th</sup> to 31<sup>st</sup> August 2012



## DEADLINES

Receipt of synopses  
at Central Office:  
**16<sup>th</sup> May 2011\***

Notification of acceptance:  
**End of August 2011**

Receipt of full Papers  
at Central Office:  
**16<sup>th</sup> January 2012**

\* Please contact your National  
Committee to know by which date  
they need to receive your synopsis  
for a prior screening.

INTERNATIONAL COUNCIL ON LARGE ELECTRIC SYSTEMS  
*Conseil International des Grands Réseaux Électriques*

<http://www.cigre.org>



**SC A1 Rotating Electrical Machines****PS1 > Developments in Electrical Machines and Experience in Service**

- Improvements in design, manufacture, capacity, efficiency, insulation, cooling, bearings, materials, operation and maintenance
- Influence of customer specifications and grid operator requirements on the design and cost of machines
- Effects of the torsional electromechanical oscillations on the shaft fatigue of turbo-generators

**PS2 > Asset Management of Electrical Machines**

- Refurbishment, replacement, power up-rating, efficiency improvement, economic evaluation of proposed alternatives
- Condition/risk based maintenance
- Methods for predicting the remaining life of aged machines

**PS3 > Electrical Machines for Dispersed Generation**

- Developments in design, efficiency, operating performance, reliability and maintenance
- Control, monitoring and diagnostics
- Future trends

**SC A2 Transformers****PS1 > Transformers in the network of the future**

- Intelligent monitoring, algorithms, access to new data and information
- Optimal utilization taking into account monitoring information, dynamic rating and overloading
- Transformer applications resulting from new network technologies
- Impact of harmonics

**PS2 > Transformer Eco design / Eco use**

- Improved material, better efficiency
- Environmental considerations - low noise, oil containment, oil recycling, fire protection
- Life cycle costs, life extension, repair/refurbish/replace decision

**PS3 > Transformer magnetic circuit**

- Core and core structure design, modelling, temperature evaluation
- Material characteristics, manufacturing, assembling
- Saturation - inrush, direct current, geomagnetically-induced current

**SC A3 High Voltage Equipment****PS1 > Equipment design to facilitate network developments**

- Design and testing of equipment for HVDC networks
- Role of intelligence within equipment
- UHV
- Impact of changes in AC network design and operation

**PS2 > Reliability and lifetime of HV equipment**

- Experience and trends in reliability of HV equipment
- Prediction and management of end of life due to age and/or potential overstressing
- Role of condition monitoring and assessment

**PS3 > Environmental suitability of HV equipment**

- Design to minimise environmental impact
- Design and testing for extreme ambient conditions (temperature, seismic levels, pollution ...)
- Design for offshore/marine environments

**SC B1 Insulated Cables****PS1 > Newly installed or upgraded cable systems**

- Design, installation techniques, operation
- Issues associated with long cables

**PS2 > State-of-the-art and trends for cable system rating, testing and monitoring**

- Static and dynamic cable rating calculations
- Qualification, type, routine, sample and after installation testing
- Applications of diagnostics to cable systems
- Trends in on line monitoring of cables and accessories

**PS3 > Cables in the Network of the Future**

- Future voltage levels for AC and DC cables
- Conversion of AC cable circuits to HVDC operation
- New functionalities expected from cable systems

**SC B2 Overhead Lines****PS1 > Improved utilisation of OHL**

- Electrical optimisation of existing rights of way including new conductor technologies
- Conversion of AC lines to DC operation
- Line monitoring and dynamic line rating methods
- Sharing rights of way with other parties

**PS2 > Condition and Assessment of OHL**

- Operational data collection for asset management
- Diagnostics tools and methods for reliability and remaining life of line components assessment
- Mechanical dynamic behaviour, seismic risk and extreme weather conditions

**PS3 > Maintenance and Refurbishment of OHL**

- Live line work, robots, drones
- Use of information systems, maintenance policy, efficiency of different methods and strategies
- Examples of refurbished lines

**SC B3 Substations****PS1 > Advances in Substation Technologies**

- Challenges on the design of UHV AC substations
- Use of GIS for HVDC busbars and switchgear
- Impact of IEC 61850 and non conventional instrument transformers on the substation design
- Requirements on the design of offshore AC substations
- Reducing the environmental footprint of substations

**PS2 > Substation Management Experience**

- Experiences with UHV substations
- Modification of existing substations to meet new requirements such as higher rating, improved reliability and reduced maintenance
- Monitoring and condition assessment for substations and GILs
- Managing different reliability and life expectancy of primary and secondary equipment

**SC B4 HVDC and Power Electronics****PS1 > HVDC and FACTS Schemes**

- Project planning, including environmental and regulatory issues
- Schemes recently completed or under construction
- Service experience of VSC, HVDC and UHVDC schemes

**PS2 > HVDC and FACTS Technology Developments**

- HVDC converter stations
- FACTS equipment
- UHVDC equipment

**PS3 > Applications of HVDC and FACTS**

- HVDC grids and multi-terminal HVDC systems
- FACTS equipment for increased AC network performance
- Embedded HVDC systems, including AC lines converted to HVDC operation, for increased network capacity and performance
- Use of Power Electronics to facilitate the integration of large renewable energy sources into AC networks

**SC B5 Protection and Automation****PS1 > Impact of Future Network Components on Protection and Automation Systems**

- Local and system wide coordination of protection and control for SVCs and other FACTS devices, power storage and dispersed energy resources
- Dynamic relay coordination and verification
- Sharing and allocation of protection, control and automation functions
- Communication requirements

**PS2 > Utilisation and Application of Remote Access for Protection and Automation Systems**

- Present practice, improvements and new opportunities for real time and off-line operation and management, including remote testing, maintenance and adaptive protection
- Bi-directional management of information including fault recording, substation automation systems configuration, setting and testing
- Automated data retrieval, analysis and operational response
- Requirements, specification and organisation of secure cyber access

**SC C1 System Development and Economics****PS1 > Planning options to ensure reliability, sustainability and flexibility as the power system changes across all voltage levels**

- Impact of future generation sources, storage and need of system services
- Uncertainty of supply and demand levels
- Changing transmission/distribution interface

**PS2 > Investment challenges in delivering future power systems**

- Sustainability considerations
- Business case development, project justification and stakeholder engagement
- Risk of stranded assets or late delivery of capacity
- Investment coordination with electric and other utilities

**PS3 > Asset management challenges in future power systems**

- Variable utilisation
- Increased uncertainty and changing risk profiles
- Impact of new technologies

**SC C2 System Operation and Control****PS1 > Methods to overcome operation challenges caused by the combination of intermittent generation and changes in electrical loads behaviour from a TSO perspective**

- Resource balance (day ahead and day at hand), maintaining frequency and uncontrolled excess generation in relation to system demand
- Reduced inertia on the power system
- Congestion management (power flow), voltage control and coordinated Phase Angle Regulator (PAR) settings
- Information and control of dispersed generation

**PS2 > Methods to improve the awareness of the overall status of the interconnected systems and the coordination of TSO actions**

- Information sharing among TSOs in interconnected systems with several control areas
- Coordinated remedial actions
- Information processing, decision support and visualization techniques
- Information exchange and operational interfaces between TSO and other players, including distribution operators

**SC C3 System Environmental Performance****PS1 > Public acceptance of electric power system infrastructures**

- Experiences in communication practices, stakeholder engagement and public awareness improvement
- Legislation requirements, guidelines, roles of authorities and regulators
- Methods and experiences of accommodating stakeholder needs into planning and operation of electric power system infrastructures

**PS2 > How “green” are the future power systems?**

- Methodologies to evaluate environmental and social performances of innovative network structures and concepts
- Environmental implications of new grid concepts
- Environmental impacts of power system efficiency improvements

**SC C4 System Technical Performance****PS1 > Modelling and practical experience of the interaction of new generation/transmission technologies and related power electronics with the transmission and distribution systems**

- Dynamic and transient performance of the network
- Power quality and EMC issues related to the massive use of power electronics and to external phenomena

**PS2 > Advanced tools and techniques for power system performance analysis with particular reference to stochastic methods**

- Incorporating risk in analysis through probabilistic tools and assessment in light of the increasing complexity of future networks
- Advanced numerical methods with particular reference to asymmetrical systems

**PS3 > Lightning protection and insulation coordination as it relates to new generation and transmission technology**

- Wind generators
- UHV systems
- HVDC systems
- New models for the calculation of lightning performance of transmission lines

**SC C5 Electricity Markets and Regulation****PS1 > Integrating renewable energy sources into electricity market – lessons learnt**

- Necessary steps undertaken – market design adjustment, regulatory changes, legislative adjustment, grid codes adjustment
- Interaction and integration of markets
- Impact on the market, impact on prices

**PS2 > Electricity market operating experiences and market performance analyses**

- Are electricity markets providing transparency and promoting liquidity?
- What experiences or conditions have driven the evolution of market designs?
- Have electricity markets provided needed investment signals?
- How will future market evolution be impacted by current market performance?

**PS3 > How is the development of advanced technologies likely to impact development of market designs**

- Communications Technology
- Meter Technology
- Consumption and Production Control Systems
- Storage Technology

**SC C6 Distribution Systems and Dispersed Generation****PS1 > Planning and operation of active distribution networks including Dispersed Generation (DG), Storage and Demand Side Integration (DSI)**

- Integration of micro generation and storage
- Experiences with demand elasticity trials and smart meter solutions
- Distribution management systems (advanced applications, real-time simulation, communication infrastructure and data management)
- Business models for active networks

**PS2 > Integration of Electric Vehicles (EV) in power systems**

- Impact on the power system
- Emerging standards
- Business models

**PS3 > Electricity supply of rural and remote areas including islands**

- Planning and operation of systems with high penetration of renewables
- Effects of storage, hybrid systems, solar home systems
- Emerging grid based technologies to support rural and remote area electrification

**SC D1 Materials and Emerging Test Techniques****PS1 > Dielectric performance and aging of insulation materials**

- Influence of ambient conditions
- Environmentally friendly materials
- Acceptable field stresses

**PS2 > Test Techniques for UHV including HVDC**

- Impulse voltage shapes, wet tests, atmospheric correction
- Test circuits and techniques for HVDC
- PD measurements under DC

**PS3 > Diagnostic tools**

- Material aging assessment and defect detection
- New tools for interpretation
- Tools for monitoring in smart grids

**SC D2 Information Systems and Telecommunication****PS1 > Distributed Information platforms for the power systems of the future**

- New architecture for operation information systems
- Back-up systems and recovery systems
- Cloud computing in applications and shared services platforms
- Cyber security

**PS2 > Interconnected information systems to support competitive markets**

- New market-driven solutions
- New solutions for communication
- Risks and opportunities



### Why Preferential Subjects?

At CIGRE Sessions Authors do not present their papers.

The delegates read the papers in advance and they discuss them around a set of questions given in a Special Report which incorporates the gist of the papers.

To discuss the papers in depth, Session papers must therefore address a strictly limited list of topics, referred to as "Preferential Subjects" and selected by each Study Committee of CIGRE. The "Preferential Subjects" are the main part of this "Call for Papers".

### How are papers selected?

The papers are selected on the basis of synopses.

- They are first screened by National Committees (where applicable), who are entitled to put forward a set number of Papers.
- Then the Study Committee Chairmen, who are in charge of the running of the discussions, will select the proposals received, under the coordination of the Technical Committee Chairman. Authors will be informed of the results.
- A Paper may still be turned down even once written out in full, if considered of insufficient quality.

### Who can propose a paper?

- The main author (assuming there is more than one) must be an individual member or must be collective member staff.  
Co-authors are not required to be CIGRE members. Co-authors may be from different countries; in this case the Paper is identified as an "International paper".
- A paper must focus on one preferential subject and only one.
- A separate synopsis must be drawn up for each paper proposal.
- The synopsis – 500 words minimum – must closely reflect the various points to be developed in the paper.
- When sending the synopsis, the name and address of the main author - and more importantly his email address which will be used for notification of the selection results –, the Study Committee reference and Preferential Subject addressed must be clearly specified.
- Template: Authors will make use of the sample pages for lay-out of synopses; these are available on the CIGRE website, page "2012 Session".

### Where are synopses to be directed?

- If the main Author is from a country with a CIGRE NC:  
The synopsis must be sent by the main author to his CIGRE National Committee (Contact details are available on the CIGRE website: see "Links/ National Committees" from the homepage). Any synopsis sent directly to the Central Office will be returned to the sender.  
For International Papers, the proposal must be sent to the NC of the main Author, only.
- If the main author is from a country where there is no National Committee:  
The synopsis must be sent in electronic format (WORD or PDF) to the CIGRE Central Office, to the following address: Sylvie.bourneuf@cigre.org
- If the proposed paper is written on behalf of a Study Committee (SC Allotment): The synopsis is sent directly to the Study Committee Chairman, who will transfer it to the Central Office.

### Deadlines for reception of the synopses

- **Synopses must be received at the Central Office by May 16th 2011 at the latest. Past this date they will not be accepted.**  
**National Committees are required to send all paper synopses to the Central Office by 16th May 2011 at the latest, which implies that National Committees will have received these synopses earlier. Hence authors must contact their National Committee who will let them know by which date they need to receive the synopses (allowing time for screening and meeting the Central Office deadlines).**
- **Authors from countries where there is no National Committee will be sending their synopsis directly to the Central Office. The strict deadline is 16th May 2010.**
- **Main authors will be notified of the selection results by the end of August 2011.**
- **Deadline for receipt of the full Papers at the Central Office is January 16th 2012.**

### Acknowledgement of reception

The Central Office will acknowledge receipt of the synopses within 2 weeks. If no acknowledgement is received, the sender should forward the message once again, to make sure the proposal(s) will be duly considered in the selection process.

All information on the 2012 Session can be found on the CIGRE website:

<http://www.cigre.org/gb/events/session.asp>

**INTERNATIONAL COUNCIL ON LARGE ELECTRIC SYSTEMS**  
*Conseil International des Grands Réseaux Électriques*

21, rue d'Artois - F 75008 Paris

> Contact for processing of Session Papers : [sylvie.bourneuf@cigre.org](mailto:sylvie.bourneuf@cigre.org)

<http://www.cigre.org>

