



# Call for Papers

***Power System Transformation including Active Distribution***

## **CIGRE International Symposium Kyoto, Japan, 3-8 April 2022**

### **Theme**

The symposium focuses on recent researches, developments and policies related to power system transformation including active distribution.

The global trend of decarbonization drives renewables to be major power resources across the world including Japan, especially at distribution-level. Various types of DERs such as battery energy storage and demand response also have been deployed, which have possibility to change the existing energy utilizations drastically.

These environmental changes bring potentials and challenges for system planning and operation on whole networks integrating the new resources. DERs have great potentials to supply ancillary services such as frequency control and voltage support and enhance the resiliency for power systems. Novel equipment and analytical methodologies for power system performance are expected to be developed and progressed.

This transformation advances the coordination among transmission, distribution and DERs with state-of-the-art ICT and digital technology and requires the policy changes and new market mechanisms. It also accelerates the integration with different types of sector such as heat and mobility industries. The symposium provides an opportunity for experts, scholars and engineers to exchange knowledge about such technical and regulatory aspects during technical sessions.

### **Venue**

Kyoto is the ancient capital and has many World Heritage Sites such as temples and Shinto shrines which attract tourists all over the world. It is close to Osaka, Nara, and Kobe, where you can enjoy the traditional atmosphere of Japan.

The venue of the Symposium is Kyoto International Conference Center which is located about 20 minutes by subway from the city center. This is where the Kyoto Protocol (COP3) was established in 1997.



### **Programme**

- Tutorial sessions will be held in the morning on Tuesday 5<sup>th</sup> April, and the opening session and the welcome reception in the afternoon.
- The main symposium sessions will take place on Wednesday 6<sup>th</sup> and Thursday 7<sup>th</sup> April. Multiple sessions are planned to be held with about several paper presentations in each. Sessions will run in some parallel tracks.
- Young member session will be on Thursday 7<sup>th</sup> April.
- Detailed information for Working Group meetings, Technical visit and Accompanying tour is available at <http://cigrekyoto2022.jp/>

## Preferential Subjects

### **【PS1】 Driving towards an enhanced system reliability, security and resiliency**

- A) Development of methods, models and analytic techniques for establishing dynamic performance of distribution networks such as lightning protection, power quality and EMC
- B) Development of new system planning and operational methodologies and tools
- C) Activities and methodologies as countermeasures against natural disaster and severe climate
- D) Regulatory policies and technical solutions facilitating grid modernization with uncertainty arising from the expansions of DERs
- E) Cyber security issues, including network codes, technologies and strategies supporting and enhancing power system security and resiliency
- F) Maximizing the use of existing assets through innovative and controllable technologies, such as HVDC, FACTS and smart grid devices

### **【PS2】 New commercial and technical relations between TSO, DSO, and customers**

- A) Application of Information and Communication Technologies (ICT) and actual use cases of activities among TSO, DSO, and customer side including new service providing entities
- B) Technological and operational aspects to “Connect and Manage” DERs and actual use cases
- C) Latest activities of market and power system operation for provision of ancillary services utilizing DER’s flexibility and sector coupling solutions
- D) Technical, operational and regulatory aspects of aggregating and integrating DERs

### **【PS3】 Innovative developments for a sustainable power network**

- A) Advanced technologies for power system planning and operation, including Internet of Things (IoT), big data analysis and Artificial Intelligence (AI)
- B) State-of-the-art technologies for field work and asset management, such as drones, Augmented Reality (AR) and Virtual Reality (VR)
- C) New trends of ICT for enhancing the utilization of DERs including Blockchain
- D) Training and fostering work forces for future sustainable grid operation and asset management

## Paper Publication

Papers will be available for downloading from the CIGRE website before the Symposium for all registered participants. The papers can be purchased in electronic format from CIGRE Central Office after the Symposium. The 6 best papers will be published in CIGRE Science & Engineering. A summary report of the Symposium will be published in ELECTRA after the event.

## Registration

Information for registration will be available at <http://cigrekyoto2022.jp/>

## Committees

The Technical Organizing Committee is made up of the following Study Committee chairs:

- C6 – Active Distribution Systems and Distributed Energy Resources (Lead SC)
- D2 – Information Systems and Telecommunication (Lead SC)
- B3 – Substations and Electrical Installations
- C1 – Power System Development and Economics
- C2 – Power System Operation and Control
- C4 – Power System Technical Performance
- C5 – Electricity Markets and Regulation

The Organizing Committee is chaired by Hiroshi Okamoto, the chairperson of Japanese National Committee.

The Technical Organizing Committee is chaired by Christine Schwaegerl, the chairperson of SC C6 and Olga Sinenko, the chairperson of SC D2.

The Local Organizing Committee is chaired by Yasuo Matsuura, the Japanese regular member of SC C6.

## Submission of synopses

Participants wishing to present and publish papers should submit synopses (about 500 words) by following instructions on <http://cigrekyoto2022.jp/>, where the synopses and paper templates are also available. All synopses, papers, and presentations must be in English. Please note authors should be available to present at the symposium.

## Deadline

Authors should note the following deadlines:

Submission of synopsis:	3 <sup>rd</sup> September 2021
Notification of acceptance:	5 <sup>th</sup> October 2021
Submission of full paper:	15 <sup>th</sup> January 2022