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## Preliminary Announcement

### Call for Papers

# Power transmission and distribution systems in the next generation

The 18th IERE General Meeting & Japan Forum



Kyoto, Japan

May 21 (Monday) – May 24 (Thursday), 2018

Kyoto, Japan

Organized by

IERE, CRIEPI and The Kansai Electric Power Co., Inc.

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## Power transmission and distribution systems in the next generation

### *About the theme*

Renewable energy has immense potential for wider implementation in future as it is an effective way to reduce carbon dioxide emissions and its generation costs are falling around the world. However, mass implementation of variable power supplies may impact power transmission and distribution systems. For example, in Japan, home solar power conditioners are causing a flicker effect. There are also concerns that other issues may occur in future, such as voltage fluctuations in distribution line, adverse effects on the power system stability and generation of surplus power.

On the other hand, rapid advances in IoT and AI in recent years have led to a wave of digitalization. The digital transformation has seen the creation of new products and services using digital technology, and companies have adopted new business models to gain a competitive edge. The electric power industry is no exception, with new forms of business arising in unregulated fields. These mainly use demand-side equipment connected to power distribution systems, such as virtual power plants and a smart meter service allowing people to check in on elderly family members. It is also predicted that many customers will have generators installed, resulting in more complex distribution systems and more active electricity transactions on the demand side. To handle this, operation departments of power distribution system (the regulated sector) will need to develop a function for running a platform for electricity transactions that targets power distribution systems in addition to the existing functions for electrical control, planning and maintenance.

For this reason, the Japan Forum will center on the theme of power transmission and distribution systems in the next generation, with a focus on distribution systems and comparatively low-voltage transmission systems, which are setting the scene for the creation of new electrical businesses in future.

### *About this event*

IERE General Meeting is a platform for interactions among IERE members, recommended non-member experts and invited guests to discuss global energy issues focusing primarily on electricity. It provides the audience with opportunities not only to express their views on the ongoing IERE programs but also to discuss strategic approach to the controversial energy issues of the moment.

### *Who should attend?*

This meeting should be attended by IERE members' representatives, as well as those interested in power industries as a whole, specifically in the related future R&D technologies and policies on generation, transmission, distribution, storage, environmental and regulatory issues, etc. Non-members are encouraged to attend and to share and learn about this highly potential but controversial energy issues. Experts on technical sessions, IERE members and non-members alike engaged in the session topics, should attend the event.

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## **Outline Schedule:** This schedule may be changed.

<i>Monday</i>	<i>May 21, 2018</i>	<i>Welcome Reception [in evening]</i>
<i>Tuesday</i>	<i>May 22, 2018</i>	<i>The 18th IERE General Meeting/Japan Forum</i>
<i>Wednesday</i>	<i>May 23, 2018</i>	<i>The 18th IERE General Meeting/Japan Forum</i>
<i>Thursday</i>	<i>May 24, 2018</i>	<i>Technical Tour (Optional)</i>

## **Program & Session themes**

Session structure and speakers may be subject to change according to the submission of contributions.

May 21, 2018

### **Welcome Reception**

May 22 -23, 2018

### **Plenary Session**

- Opening Address : IERE Chair  
Welcome Speech : Details to be announced  
Keynote Speech : Details to be announced

### **Session 1**

Theme: New trends and requirements in the field of transmission and distribution systems

In future, power distribution systems are expected to connect various forms of distributed energy resources such as solar power. This will require the development of a platform and cooperation between the demand side and the supply side to maintain the quality of electric power. The collection of fixed costs of equipment and the design of the electric power market will also become issues. This section will cover the following points:

- The role of power transmission and distribution system operators (management of distributed power supplies, etc.)
- Virtual Power Plant
- Modeling of networks
- Economic viability of platforms
- Measures to mass PV implementation and improvement of hosting capacity
- Power trading
- Handling customers' shift to prosumers (acting as both producers and consumers)

## Session 2

Theme: Technology for power transmission and distribution systems in the next generation

Attendees will discuss the next generation of technology that will be required for power transmission and distribution systems. This session will mainly focus on hardware, and will cover the following points:

- Technology for automation of power distribution system
- Power quality (voltage control, interference between devices, anti-flicker measures, high harmonics)
- Smart inverters
- Linking technology and control technology for distributed power supplies

## Session 3

Theme: Use of ICT (AI and IoT) technology and its impact on power transmission and distribution systems

Attendees will discuss the next generation of technology that will be required for power transmission and distribution systems. This session will mainly focus on communication technology and software, and will cover the following points:

- Use of big data
- Use of smart meter data
- Use of IoT in the power transmission and distribution system
- Use of AI for electric power industry
- Cyber security
- Assessment of the state of power supply and distribution systems (e.g. assessment of actual demand when using systems that link distributed power supplies)
- ICT for communication between devices

## Business Session

The report of IERE activities by IERE chair

## Poster Session

Details to be announced

May 24, 2018

## Technical Tour (optional)

Details to be announced

## Conference Venue & Accommodations

### Venue

*Welcome Reception:*

Kyoto Hotel Okura, 3F 'Ballroom -Suiun - '

*General Meeting & Japan Forum:*

Kyoto Hotel Okura, 3F 'Ballroom -Gyoun - '

*Technical Tour:*

Details to be announced

< Kyoto Hotel Okura >

Kawaramachi-Oike, Nakagyo-ku, Kyoto 604-8558, Japan

<http://okura.kyotohotel.co.jp/english/>



Map URL: <https://goo.gl/maps/jZX6c32oLer>

### Accommodations

A block of rooms at special rates will be reserved for conference participants.

The detail how to book 'Kyoto Hotel Okura' at special rates will be announced in 1<sup>st</sup> and 2<sup>nd</sup> Announcement.



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## Call for Papers

<<Abstract Submission: *No later than **March 1, 2018***>>

You are kindly invited to submit abstract for Oral Session or Poster Session of General Meeting and Japan Forum by e-mail by March 1, 2018

to: **register (at) iere.jp** [Please substitute “(at)” with “@”]

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As for a format of abstract, please refer to the “Events” page on IERE website.  
<https://www.iere.jp/events/forum/2018-japan/index.html>

The official language is English.

## Registration

Detailed information on Registration will be notified by the 1<sup>st</sup> and 2<sup>nd</sup> Announcement, which will be delivered later.

## Registration Fee

The Registration fee will be informed later. Registration fee will cover attendance for the conference, reception/cocktail on May 21, Lunch on May 22-23, and Dinner on May 22, conference package. Expected registration fee is \$500-600 for members and \$550-650 for non-members. For academic participants, that will be the half of Member’s registration fee. (Details including cancellation policy will be informed in the 1<sup>st</sup> and 2<sup>nd</sup> Announcements)

## Organizers

### **Central Research Institute of Electric Power Industry (CRIEPI)**

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<http://www.denken.or.jp/en/index.html>

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1<sup>st</sup> issue: Nov. 21, 2017