

“Integration of Variable Renewable Generation into Power Systems: Challenges and Measures for Increasing Its Penetration Level, and Strengthening Cross Border Interconnection”



CIGRE AORC Technical Meeting 2019 will bring together experts and key players from power system industry across Asia Oceanic region to address the current challenges in delivering secure and efficient energy in the current trends of increased variable energy generation and more extensive cross-border interconnection. This unique platform will facilitate power system engineers, owners of generation, transmission and distribution assets, system operators, policy makers, regulators and academics across the region to share and discuss the current practices and future directions.

PROGRAMS

CIGRE AORC Technical Meeting 2019 will be held on 24-28 March 2019 in Bali. The key programs of the CIGRE AORC 2019 will consist of 4 major CIGRE events: CIGRE 2019 AORC Administrative, Tutorials, Technical Meeting, and Technical Visits.

Thus it will be bringing the experts and leaderships from global power system industry at one location in Bali.

Visits, networking, and social events are all planned to enrich delegates' experience. The tentative schedule of the coordinated program are as shown below:

DELEGATES REGISTRATION FEES

US\$900 | **US\$1000**
CIGRE Member | Non CIGRE Member

Payment can transfer to:
Bank Syariah Mandiri, SWIFT-Code : BSMDIDJA
Acc No : 7006554398, Beneficiary : KNI CIGRE

Fees Includes Full Meeting Package:
Coffee Breaks and Lunches, Cocktail Reception, Cultural Night Dinner.

Full Day Technical Visit USD75 per Pax Includes: Transport and Lunch

Ladies and Accompanying Program for 2 days: USD 200 per Pax Inclusive Transport, Attraction Entrance Ticket, and Lunches for Indonesian delegates, the fee is Rp. 10 million



VENUE :
The Anvaya Beach Resort



Jl. Kartika Plaza, Kuta 80361
Bali, Indonesia

AORC Schedule 2019

Date Time	Sun, 24 March	Mon, 25 March	Tue, 26 March	Wed, 27 March	Thu, 28 March
Morning	Arrival of Delegates Registration	Opening Keynotes Plenary Panels	Parallel Presentation WG-SC Meeting AORC Admin Meeting	Parallel Presentation Tutorial 3, 4 & 5	Technical Visit PLN Bali DCC & Muara Mini Hydro Power Plant
Afternoon		Parallel Presentation Tutorial 1 & 2		Plenary Panel Talk	
Evening	Free Time	Cocktail Reception	Free Time	Cultural Night & Dinner	Free Time Delegates Departure

Notes: Ladies and Accompanying Program Monday & Tuesday 25 - 26 March

Bali is a province and known as paradise island of Indonesia with its unique culture and largest Hindu population.

It is renowned for its highly developed arts, including traditional and modern dances, sculptures, paintings, leathers, metalwork and music.

In March 2017, TripAdvisor named Bali as the world's top destination in its Traveller's Choice award.

TOPICS OF SPECIAL INTEREST

Papers are invited on all topics that align with the theme of the Conference and Technical Meeting – “Integration of Variable Renewable Generation into Power Systems: Challenges and Measures for Increasing Its Penetration Level, and Strengthening Cross Border Interconnection”. Some examples are as follow:

Power Transformer s and Reactors & Substations and Electrical Installations (A2 & B3)

Design, Construction, Manufacturing and Operation for all kinds of Power Transformers, including Industrial, DC Converters and Phase-shift Transformers and for all types of Reactors and Transformer Components.

Design, Construction, Maintenance and Ongoing Management of High Voltage Substations and Electrical Installations in Power Stations.

DC Systems and Power Electronics & Power System Development and Economics (B4 & C1)

Design, Construction and Maintenance of High Voltage Direct Current (HVDC) Transmission and Power Electronics for use in Transmission and Distribution.

Economic and System Analysis Methods for the Development of Power Systems and to Assist Utilities to Find the Best Solutions in Various Evolving, Competitive and Unbundled Conditions in the Context of the Overall Energy Supply System and with Social and Environmental Considerations.

Power System Operation and Control & Active Distribution Systems and Distributed Energy Resources (C2 & C6)

Challenges in the Control Centre (EMS) due to Distributed Generation and Renewables.

System Operation Emphasizing DSO/TSO/DERMS/Microcontroller Interaction, Co-Ordination and Interoperability.

System Impact of Distribution Systems Integrating DG by Synthesizing State-of-the-art Practices and Developing Recommendations.

Develop New Know-how in the Field of Distribution System and Dispersed Generation.

Any other SCs with papers aligned with the theme, such as Future Electricity Market and Regulation

TUTORIALS

Tutorial 1 : Technical Risk and Solutions from Periodic, Large Surpluses or Deficits of Available Renewable Generation - Christian Schorm, Convenor WG C1.30

Tutorial 2 : EMF and Health : “It is time to reassure”
Prof. Dr. Ing. habil Konstantin O. Papailiou, former Chairman SC B2 (OHL), Chief Editor CIGRE Science and Engineering

Tutorial 3 : Quo Vadis Overhead Lines - Dr. Ing. habil Konstantin O. Papailiou

Tutorial 4 : Optimizing Overhead Lines - Dr. Rob Stephen, CIGRE President

Tutorial 5 : Impact of Battery Energy Storage System (BESS) on Distribution Network - Dr. Takenori Kobayashi, Toshiba System & Solution Cooperation

REGISTRATION

All the relevant information of the CIGRE AORC Technical Meeting 2019, Tutorials, and Registration will be made available through cigre-bali2019.com

International Steering Committees

AORC Chairman, AORC Secretaries,
Australia NC Chairman, China NC Chairman,
GCC NC Chairman, India NC Chairman,
Indonesia NC Chairman, Iran NC Chairman
Japan NC Chairman, Korea NC Chairman,
Malaysia NC Chairman, New Zeland NC
Chairman, Thailand NC Chairman

National Steering Committee

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Director General of Renewable Energy & Energy
Conservation MEMR
Director of Planning PLN
Director for Human Capital Management PLN
Director of Business Regional East of Java, Bali
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Evy Haryadi. MEng
I Made Ro Sakya. MSc

Committee Secretariat

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Tutorial Courses

CIGRE is a Global Community, the World's foremost power system knowledge and development programme.

On this CIGRE AORC International Conference 2019, we bring experts of Power System from the world to deliver four Tutorial Courses, for collaborative development and sharing of power system expertise.

The tutorial courses will be delivered by:

Dr. Rob STEPHEN



He is currently President of CIGRE.

Master Specialist in the Technology Group of Eskom South Africa. Responsible for distribution and transmission technologies of all voltages covering both AC and DC and was responsible for the smart grid strategy for Eskom.

Dr. Rob Stephen was born in Johannesburg South Africa. Graduated from University of Witwatersrand in 1979 with a BSc Electrical Engineering degree. He holds both MSc,

MBA degrees as well as a PhD in overhead line design. He joined Eskom the electrical utility South Africa in 1980.

He is past chairman of CIGRE SC B2 on overhead lines, and has held positions in CIGRE of Special reporter and working group chairman, published over 100 technical papers. He is also a Fellow of the South African Institute of Electrical Engineers (SAIEE) and was elected Honorary Vice President in 2005. He received the SAIEE President's award in 2016.

Christian SCHORN



Graduated from electrical engineering University of Saarbrücken and University of Karlsruhe. And then joined EnBW in 1995. In 2003, he involved extensively in Technical Asset Management and from 2013 covers Smart Grid and Electromobility. Since then become a group expert for Grids at EnBW.

In 2017 he is responsible for Asset Management and Operations at TransnetBW, one of four German transmission system operators. In parallel he was spending 11 years as member of the board at PREdi a DSO in Prague, Czech Republic.

He is active and holds several positions in national German Standardization Organisation such as VDE FNN in Berlin and VDE DKE in Frankfurt. He has a longtime experience in working with CIGRE.

He was convener WG C1.30 and role as German delegate in the Study committee C1 "System Development and Economics" till 2018. Currently He is Director Asset Management and Operation of Transnet GmbH Germany.

Prof. Dr. Konstantin O. PAPAILIOU



Konstantin O. Papailiou has spent his entire career of more than 40 years in Power Systems and in particular Overhead Lines.

He received his PhD from the Swiss Federal Institute of Technology (ETH) Zurich and his post-doctoral qualification as lecturer (Dr.-Ing. habil.) from the Technical University of Dresden.

He was CEO of the Pfisterer Group until 2011, a company he served for more than 25 years. He has held leading positions in various international technical societies and standardization bodies and has published more than 100

papers in professional journals as well as co-authored two reference books: "Silicone Composite Insulators" and the EPRI Transmission Line Reference Book "Wind-induced Conductor Motion".

Professor Papailiou is also active in power engineering education, teaching Master's level courses on high-voltage overhead lines. Konstantin Papailiou since many years strongly involved with CIGRE and has served from 2010 to 2016 as Chairman of CIGRE Study Committee "Overhead Lines". He is also the founding Editor-in-Chief of the CIGRE Science & Engineering Journal

Dr. Takenori KOBAYASHI



He is a Chief Specialist on Battery Energy Storage System Solutions

DX Business Design Project Team / Transmission & Distribution Systems Div. Toshiba Energy Systems & Solutions Corporation

Kawasaki, Japan

Obtained BS, MS and Ph.D. in Electrical Engineering, all from The University of Tokyo.

Professional experiences:

Joined Toshiba Corporation in 1994.

25 years of extensive experiences in the field of power system engineering, battery energy storage systems, in particular, lithium-ion battery based and for grid support purposes, power & energy solutions, including energy management systems for smart grids and microgrids, large-scale renewable integration, PMU applications, and energy storage applications.

Senior Member of IEEEJ, Member of IEEE, - Expert for WG3 (planning & installation) and WG5 (safety) of IEC TC120 (Electrical Energy Storage Systems).

Tutorial 1 - Technical Risk and Solutions from Periodic, Large Surpluses or Deficits of Available Renewable Generation

Christian Schorm

Tutorial Content:

- Introduction
- Impact of the integration of RES in the Power System
- Analysis of the technical risks
- Description of solutions
- Recommendation for planning principles
- Conclusion and Outlook

Tutorial 4 - Optimizing Overhead Lines

Dr. Rob Stephen

Tutorial Content:

- Basic theory on factors that affect line impedance
- How to vary line design to meet required impedance values
- Use of an indicator to determine the best line design
- Aspect on insulator
- Lightning performance
- HVDC line design parameters
- Indicator to determine the best HVDC line design
- Result of cost survey on lines

Tutorial 2 - EMF and Health : "It is time to reassure"

Prof. Dr. Konstantin O. Papailiou

Tutorial Content:

- The magnetic field and the human body
- Magnetic field levels at home and at work
- The origin of the controversy: cancer and magnetic field
- Standard approaches to assess carcinogenicity
 - Epidemiological studies
 - Experimental tests: long term animal studies
- International Agency for Research on Cancer: 2B: «possibly carcinogenic»
- All evidence points to a false alarm

Tutorial 5 - Impact of Battery Energy Storage System (BESS) on Distribution Network

Dr. Takenori Kobayashi

Tutorial Content:

- Battery energy storage system – general considerations
- BESS impacts and benefits on power grids
- BESS as a power sources – features and operation
- Planning and design considerations
- Grid codes and standards
- International experience – installations
- Recent example cases
- Closing remarks

Tutorial 3 - Quo Vadis Overhead Lines

Prof. Dr. Konstantin O. Papailiou

Tutorial Content:

- Issues of Overhead Lines
- Line Aesthetics
- Line Upgrading
 - Increase Voltage
 - Increase Current
 - Conductor thermal rating
 - Monitoring techniques
 - HTLS Conductors

All tutorial courses based on the CIGRE reference publications:

