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- Share project experiences
- Present innovative ideas and results from ongoing research
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Phone: +49 (0) 6151 - 785 81 00
www.energy-nautics.com

Co-Organizer:
The Royal Institute of Technology
Stockholm, Sweden
Advisory Committee

- Julio Usaola | Charles III University of Madrid, Spain
- Adrian Timbus | ABB, Switzerland
- Emanuele Taibi | IRENA, Germany
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- Sigrid Bolik | Senvion, United Kingdom
- Jens Bömer | EPRI, USA
- Thomas Ackermann | Energynautics, Germany

Proposed Preferential Topics

- **Project Experience**
  - European wide project experience related to grid connection of PV/OPS/Storage
  - World-wide experience with grid connection of PV/OPS/Storage into power systems
  - Database related to grid connection of high shares of PV/OPS/Variable renewable energy (VRE)

- **Power System Studies**
  - World-wide experiences with power systems with high shares of PV/OPS/Storage
  - Transmission grid planning with high shares of PV/OPS/Storage in power systems
  - Impact of the integration of power system operation with high shares of PV/OPS/Storage in power systems
  - Conversion of AC power lines to DC lines to facilitate higher shares of PV/OPS/Storage in power systems

- **Protection aspects related to PV/OPS/Storage in distribution grids**
  - Issues associated to PV/OPS/Storage in distribution grids
  - Grid code issues

- **Power Quality Issues**
  - Power quality with PV and inverter based generation in power systems
  - Power system studies related to WECs and offshore wind power generation
  - Frequency as related to high shares of PV/OPS/Storage in power systems

- **Transmission Grid/Power System Issues**
  - Grid code issues
  - Transmission grid planning with high shares of PV/OPS/Storage in power systems
  - Power system studies related to WECs and offshore wind power generation
  - Conversion of AC power lines to DC lines to facilitate higher shares of PV/OPS/Storage in power systems

- **Ancillary Services**
  - Ancillary services for PV/OPS/Storage in power systems
  - Ancillary services for PV/OPS/Storage in power systems
  - Ancillary services for PV/OPS/Storage in power systems

- **Hybrid Power Systems**
  - Hybrid Power Systems
  - Hybrid Power Systems
  - Hybrid Power Systems

- **Forecasting**
  - Forecasting
  - Forecasting
  - Forecasting

- **Politics and Energy Governance**
  - Politics and Energy Governance
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  - Politics and Energy Governance

- **Decarbonization of Energy Sectors**
  - Decarbonization of Energy Sectors
  - Decarbonization of Energy Sectors
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- **Market Issues**
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Proposed Preferential Topics

Project Experience

- World-wide experience related to grid connection of PV/CSP/storage
- World-wide experience related to grid connection of PV/CSP/storage into power systems
- Power System Studies
  - World-wide P2xV2G experience – the TSO perspective
  - World-wide PV/CSP/storage grid integration studies – and future opportunities
  - World-wide experiences with balancing power systems with high shares of PV/CSP/storage/variable renewable energy (VRE)

Grid Code Issues

- Impact of the regulations on power system operation with high shares of PV/CSP/storage and VRE
- Grid connection experience and studies of PV/CSP/storage devices and systems
- Grid connection experience and studies of grid-connected PV/CSP/storage systems

Solar Power Modelling Issues

- Solar power production monitoring and prediction systems
- Modeling of inverters and solar power plants/storage devices for system planning and interconnection studies
- State-of-the-art solar power forecasting, scheduling and operation for PV/Storage/Demand
- Solar power plants performance for power system operation and planning
- Solar plant/storage models for interconnection and planning studies

Inertia aspects related to high shares of PV/CSP/storage in power systems

Protection aspects related to PV/CSP/storage in distribution/weak grids

Power Quality Issues

- Power system automation and its benefits for PV/CSP/storage/low voltage systems
- Power quality aspects with PV and inverter based generation in power systems
- Power quality with PV and inverter based generation in power systems
- Power quality aspects with PV and inverter based generation in power systems

Transmission Grid/Power System Issues

- Power system Balancing issues
  - Dynamic line rating/online dynamic security assessment and high inertia aspects related to high shares of PV/CSP/storage/VRE
- Transmission grid planning with high shares of PV/CSP/storage and VRE

Decarbonization of Energy Sectors

- Ancillary Services
  - Ancillary services from solar power plants — world-wide status and experiences
- Ancillary Services
  - Ancillary services from solar power plants — world-wide status and experiences
- Ancillary Services
  - Ancillary services from solar power plants — world-wide status and experiences

Market Issues

- Flexibility of the conventional power plants to manage PV/CSP/storage/VRE variability in power systems
- Power balancing methods and solutions, e.g. balancing markets, impact of VRE in power systems
- Power balancing methods and solutions, e.g. balancing markets, impact of VRE in power systems
- Power balancing methods and solutions, e.g. balancing markets, impact of VRE in power systems

Smart Grid/IT Innovations

- Smart Grid/IT Innovations
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  - Smart Grid/IT Innovations

Hybrid Power Systems

- Power system operation tools and methods for high shares of PV/CSP/storage and VRE
- Hybrid Power Systems
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Ancillary Services

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Regulatory Issues

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Market Issues

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Decarbonization of Energy Sectors

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Virtual power plants utilizing PV/Storage
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Hybrid Power Systems

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Proposed Preferential Topics

- Power System Studies
  - World-wide PV/CSP/storage/VRE grid integration studies – the TSO perspective
  - World-wide experience with balancing power systems with high shares of PV/CSP/storage
  - World-wide experience with balancing power systems with high shares of PV/CSP/storage VARIABLE renewable energy (VRE)
  - World-wide experience with balancing power systems with high shares of PV/CSP/storage VARIABLE renewable energy (VRE)

- Grid Code Issues
  - Modelling solar power plants/output variability and assessing the system integration studies (static and dynamic)
  - Modelling of inverters and solar power plants/storage devices for solar plant/storage models for interconnection and planning studies
  - Compliance testing for grid codes – world-wide status and approach

- Ancillary Services
  - Ancillary services from solar power plants – world-wide status and experience
  - Evaluation of rules and mechanisms for integrating PV/CSP/storage/VRE
  - Design concepts for ancillary services with PV/CSP/storage/VRE

- Market Issues
  - Regulation and relevant regulatory issues
  - New and emerging features of power systems with high share of PV/CSP/storage/VRE
  - Demand response in smart grid context
  - Virtual power plants utilizing PV/storage
  - New and emerging features of power systems with high share of PV/CSP/storage/VRE

- Decarbonization of Energy Sectors
  - Modelling of sector coupling with focus on solar power
  - Innovative Smart Grid solutions and relevant regulatory issues
  - Storage solutions and relevant regulatory issues
  - Innovative Smart Grid solutions and relevant regulatory issues
  - Innovative Smart Grid solutions and relevant regulatory issues

- Solar Power Modelling Issues
  - Solar power production monitoring and prediction studies
  - Solar power production monitoring and prediction studies
  - State-of-the-art solar power forecasting, scheduling and optimisation for incorporation in power system operation
  - Solar power production monitoring and prediction studies

- Transmission Grid/Power System Issues
  - The impact of the inverter on power quality
  - Power quality aspects with PV and inverter based generation in power systems

- Protection aspects related to PV/CSP/storage
  - Power quality aspects with PV and inverter based generation in power systems
  - Power quality aspects with PV and inverter based generation in power systems
  - Power quality aspects with PV and inverter based generation in power systems

- Power Quality Issues
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  - Power quality aspects with PV and inverter based generation in power systems

- Transmission grid planning with high shares of PV/CSP/storage
  - Transmission grid planning with high shares of PV/CSP/storage
  - Transmission grid planning with high shares of PV/CSP/storage

- Hybrid Power Systems
  - Microgrids and other new ideas to increase the share of PV/CSP/storage
  - IT technology for the integration of PV/storage
  - Innovative Smart Grid solutions to increase the share of PV/Storage

- Energy Modelling Issues
  - Energy Modelling of PV plants with high share of PV performance
  - Energy Modelling of PV plants with high share of PV performance
  - Energy Modelling of PV plants with high share of PV performance

- Forecasting
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- Ancillary Services
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- Flexibility of the conventional power plants
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8th Solar Integration workshop with Special Topic Storage

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8th Solar Integration Workshop

Stockholm, Sweden

15 - 16 October 2018

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- Workshop 1: E-Mobility Integration 17th 16 - 18 October 2018
- Workshop 2: Energy Systems Integration 15 - 16 October 2018

Stockholm, Sweden

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