

## FUTURE POWER AND ENERGY SYSTEMS

- Transmission system modeling and simulation
- Transmission system planning: TSO of the future
- Control methods and real-time operation
- System integration of RES
- Advances in RES technology
- Advances in forecasting techniques
- HVDC
- Energy market operation and simulations
- Regulatory issues
- Optimization techniques in power systems
- Large-scale storage systems
- Transition from power to energy grid
- Reliability and protection
- HV equipment testing

## LOW CARBON DISTRIBUTED ENERGY SYSTEMS

- Distributed energy sources: grid integration and control
- Distribution system planning: DSO of the future
- DC and AC microgrids: concepts beyond isolated power systems
- Off grid solutions
- Smart buildings as energy islands
- Energy storage: role, impact, economics, technology
- Cogeneration - trigeneration - multi-generation systems
- Interconnected infrastructures
- Energy efficient buildings and homes
- Flexible demand: smart homes, real-time pricing, electro-thermal shifting potentials
- Renewable heating: models, potentials, economics, policies
- Recasting methods for smart systems: RES, demand, energy prices
- Smart cities: visions and solutions
- Aggregator modeling



## SUSTAINABLE TRANSPORTATION SYSTEMS

- Batteries in electric vehicles
- Fully electric vehicles
- Hybrid and fuel cell electric vehicles
- Electric power trains
- Energy management of transportation systems
- Urban and neighbourhood mobility
- Water mobility
- Policy of sustainable transportation systems
- Electric vehicles and electricity market

## ADVANCES IN ENERGY CONVERSION

- Power electronics for electrochemical apparatus, energy storage and UPS
- Electrical machines and drives
- Power electronics for grid interface, power quality, power factor compensation, filtering techniques
- Power electronics for energy from renewables
- High efficiency electrical machines and drives for energy saving
- Powertrain for ship propulsion and electric vehicles
- Power transformers

## ICT IN ENERGY

- Communication networks, protocols and technologies for smart grids
- Architecture, models and network protocols
- Smart energy measurements
- Smart grid monitoring and control
- Signal processing and compression of power grid sensors data
- Privacy and cybersecurity
- Standardization and regulation
- Field trials and deployments

## THE FUTURE OF GAS IN POWER SECTOR

- Natural gas and power markets
- Large-scale gas to power generation
- Shale gas - opportunities and challenges
- Power-to-Gas (P2G): energy storage system of the future



## CONTACTS

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**“If you want to see  
Heaven on Earth,  
come to Dubrovnik”**

**George Bernard Shaw**

