

# **Resilience of Power Systems and Energy Internet**

Sponsored by  
*IEEE PES Working Group on Energy Internet*  
*IEEE PES China Energy Internet Operation and Control Subcommittee*  
*IEEE PES Task Force on Methods for Analysis and Quantification of Power System Resilience*

**Session Chair:** Yin Xu, *Beijing Jiaotong University, China*

## **Aims and Scope:**

Resilience against extreme events, such as natural disasters and deliberate attacks, is considered as a most essential feature of the future smart grid. Although resilience is becoming a hot topic in the electric power academy and industry, we still do not have a well-accepted definition for it. The difference and relation between resilience and other related concepts, such as reliability, security and robustness, are not clear. A set of metrics for quantification of grid resilience is also needed. Extreme events affect not only the electric power facilities but also other critical infrastructures, including natural gas, communications, water, and transportation. Analysis of resilience must consider the interdependency among these infrastructures. That is resilience of energy internet should be studied. The modelling of extreme events and their impacts on power systems and energy internet should be evaluated. Modelling, simulation, analysis, and management of dependency among different infrastructures in energy internet are challenging tasks. In addition, measures to enhance resilience by design, planning, preparedness, mitigation, response, restoration and recovery measures should be explored.

This session will bring together experts in the area of resilience to share and exchange novel ideas on definition, quantification, analysis, and enhancement of resilience for power systems and energy internet.

## **Panelists:**

**Yilu Liu & Kevin Tomsovic**, *University of Tennessee, USA*

**Fushuan Wen**, *Zhejiang University, China*

**Dipti Srinivasan**, *National University of Singapore, Singapore*

**Shouxiang Wang**, *Tianjin University, China*

**Anurag Srivastava**, *Washington State University, USA*

**Ying Chen**, *Tsinghua University, China*

**Prabodh Bajpai**, *Indian Institute of Technology Kharagpur, India*

**Wenqian Yin**, *Hong Kong University, Hong Kong*