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Topic: Challenges and solutions towards green and resilient power systems

Abstract: The energy transition is a challenge for the power system operators. Both technical and economic major changes are experienced by all involved actors, but especially by the final consumer. Although detailed grid codes are in force to define the path for safe and reliable operation of the power systems, critical events are experienced regularly from multiple reasons. While the interconnected operation of the power systems provides multiple advantages, apparently minor incidents can lead to large scale instability phenomena. The stochastic behavior of the renewable energy sources is increasingly challenging the network operators as the share of generation from such sources increases as a strategy for reaching the clean energy targets. Concepts like virtual power plant, sharing regulation reserves among neighbor power systems, supergrid, TSO-DSO cooperation, and resilience are addressed in this talk as hot topics promoted by the IEEE Power & Energy Society.