

Title:

Paradigm shift in electric power industry and its impact on power conversion devices and controls

Abstract:

Numerous developments in the electric power industry are under way. Transmission means may include vast, spatially large HVDC rings that could help smoothing the volatile power input from renewables, thus reducing the need for costly accumulation. On the low end, the microgrids and other subsystems that comprise the loads, local power sources and local accumulation could introduce considerable changes in the way the electric energy is distributed. Said developments could not exclude some fundamental changes in the ways the electrical power system is controlled and protected. Grid-connected static power converters and other electronically controlled sources, loads and accumulators are the key element in modern electric power industry. Further development of their control and protection mechanisms will have a considerable impact on transmission and distribution systems.