

# **Application of a Static Reactive Power Compensator (STATCOM) and a Dynamic Braking Resistor (DBR) for the Stability Enhancement of a Large Wind Farm**

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## **Abstract**

A control strategy to improve the stability of a large wind farm using a Static Reactive Power Compensator (STATCOM) and Dynamic Braking Resistor (DBR) is proposed and investigated. The STATCOM supplies the reactive power demand of the wind farm dynamically in order to maintain the network voltage, including brief periods of faults. The DBR is controlled by Liapunov's stability criterion to absorb the active power of the wind farm during the network fault. The performance of the STATCOM and DBR, applied to a large wind farm (60MW), is studied in PSCAD/EMTDC. The simulation results show that effective control of the STATCOM and DBR together can enhance the stability of large wind farms.