ABSTRACT

This project investigates the frequency stabilization of highly-distributed future AC networks with high penetration of wind generation and energy storage systems. The investigation focuses on frequency stabilization during unintended split of the AC network into small clusters following large network disturbances, and during power unbalance due to the variability of the wind farms output, which are operated with a maximum power tracking scheme. Such frequency stabilization mechanism will be crucial in any practical realization of future micro and smart grids where the priority is to prevent loss of electricity supply following large permanent network faults.