

CIGRE Study Committee C6, «Distribution Systems and Dispersed Generation»

PROPOSAL FOR CREATION OF A NEW WORKING GROUP

WG N° C6.08	Name of Convenor : Harald Weber (Germany)
Title of the Group : <i>Integration of large share of fluctuating generation</i>	
Scope, deliverables and proposed time schedule of the Group	
Background: Notwithstanding intermittency and variability, the contribution of wind in the power balance of some countries has increased significantly in recent years. In Germany the installed wind power capacity has already achieved the amount of 14 000 MW, that is 18 % of the peak load and approximately 3.5 % of the total electric generation. In the Crete Island the installed wind capacity amounts to 75 MW that provides 40% of the peak load and 10 % of the total electric generation. Other significant programs for the exploitation of the wind energy are in progress in many countries like Denmark, Spain, UK, Ireland, USA. They are relevant to both on shore and off shore installations that allow higher utilisation of wind generators to be achieved. At present, the wind power plants are mostly connected to the HV, MV and LV distribution networks. However, as the extent of wind power penetration increases (on-shore and off-shore) their impact on the transmission grid becomes stronger. In some countries system operators already encountered difficulties due to wind fluctuation, like network congestion, wind generators shut down during network emergencies, etc. Further more, large wind farms with rated power over 100 MW and up to 1000 MW will be connected directly to the transmission grids. Scope: To share system operation experience gained so far, to identify the most important issues related to fluctuating generation, to study conditions and generators design requirements (i.e., protection and control) to face experienced drawbacks and allowing growing fluctuating power penetration. The study will be focused on wind power exploitation; similarities with other intermittent energy sources will be shortly examined. The following topics will be elaborated within the WG 1. Congestion management in accordance with large (compared with the power system size) wind power infeed 2. Use of wind power for frequency control (generation and storage management scenarios) 3. Dynamic adaptation of wind power generation under intermitting wind velocity conditions 4. Generation schedule management, wind power prediction tools and reserve power requirements 5. Communication requirements for wind farm control 6. Design of wind farm control capabilities improving “fault ride through” and network recovery characteristics 7. Simulation of wind power plants for planning purpose Deliverables: Recommendations to be published in a technical brochure with summary in Electra Time Schedule: start : 2004 Final report : 2006	
Comments from Chairmen of SCs concerned :	
Approval by Technical Committee Chairman : Aldo Bolza Date : 30/4/2004	