


CIGRE Study Committee C4

PROPOSAL FOR THE CREATION OF A NEW WORKING GROUP (1)

WG* N° C4.30	Name of Convenor : WH Siew (UK) E-mail address: w.siew@eee.strath.ac.uk	
Technical Issues # (2): Item No.8	Strategic Directions # (3): Item No. 1	
The WG applies to distribution networks (4): Yes / No		
Title of the Group: EMC in Wind Generation Systems		
<p>Scope, deliverables and proposed time schedule of the Group :</p> <p>Background : Wind energy has developed significantly over the last two decades. Today, wind energy forms a significant contribution to the generating resources of most countries and it is expected that its share of generating resource will increase further in the future. Wind turbines operate in a very different environment and this is particularly true for off-shore wind plants. There are challenges on almost every engineering aspects and EMC for wind generation systems will need special considerations. Although CLC/TR 50373:2004 Wind Turbines - Electromagnetic Compatibility exists, several members of WG C4.208 felt that the document is a start and that CIGRE could contribute to it further. It is therefore the aim of this working group to produce a technical brochure covering EMC for wind generation systems that are not sufficiently addressed in the above mentioned documents and are listed in the scope below.</p> <p>Scope :</p> <ol style="list-style-type: none"> 1.To produce a Technical Brochure on EMC for wind generation systems 2. To consider immunity requirements for electronics located in the immediate vicinity of high electromagnetic fields caused by a lightning current. 3. To consider the immunity requirements for electronics as a result of close power interconnection of similar systems in large wind power plants. 4. To consider all the above for on-shore as well as off-shore wind plants. 5. To consider the effect of all of the above to the compact electronics installed within a wind turbine. <p>The scope does not include power quality issues.</p> <p>Deliverables : A technical brochure with summary in Electra</p> <p>Time Schedule : Start : January 2013 Final report : 2015</p>		
Comments from Chairmen of SCs concerned :		
<p>Approval by Technical Committee Chairman :  Date : 23/10/2012</p>		

(1) Joint Working Group (JWG) - (2) See attached table 1 – (3) See attached table 2
(4) Delete as appropriate

Table 1: Technical Issues of the TC project “Network of the Future” (cf. Electra 256 June 2011)

1	Active Distribution Networks resulting in bidirectional flows within distribution level and to the upstream network.
2	The application of advanced metering and resulting massive need for exchange of information.
3	The growth in the application of HVDC and power electronics at all voltage levels and its impact on power quality, system control, and system security, and standardisation.
4	The need for the development and massive installation of energy storage systems, and the impact this can have on the power system development and operation.
5	New concepts for system operation and control to take account of active customer interactions and different generation types.
6	New concepts for protection to respond to the developing grid and different characteristics of generation.
7	New concepts in planning to take into account increasing environmental constraints, and new technology solutions for active and reactive power flow control.
8	New tools for system technical performance assessment, because of new Customer, Generator and Network characteristics.
9	Increase of right of way capacity and use of overhead, underground and subsea infrastructure, and its consequence on the technical performance and reliability of the network.
10	An increasing need for keeping Stakeholders aware of the technical and commercial consequences and keeping them engaged during the development of the network of the future.

Table 2: Strategic directions of the TC (cf. Electra 249 April 2010)

1	The electrical power system of the future
2	Making the best use of the existing system
3	Focus on the environment and sustainability
4	Preparation of material readable for non technical audience