

## SC C6, "Distribution Systems and Dispersed Generation"

### Activity Report

#### Highlights

During the 2006 SC meeting in Paris a new strategic plan, to cover, in agreement with CIGRE practice, the next decade, was agreed. In 2007 the SC pursued the activity following the strategy indicated in the new plan. The plan states some basic guidelines to drive the activity of the SC in the next years:

- ✓ To study the connection and the integration of *Dispersed Energy Resources (DER)*, including small size generators, storage and relevant power electronic devices.
- ✓ To study the application of the DER concept as a part of the medium-long term evolution of distribution systems (Microgrids and Active Distribution Networks).
- ✓ To study actions and processes for demand management and customers involvement,
- ✓ To examine the opportunity to extend the SC activity to study the evolution of distribution networks including subjects that are not strictly related to the application of DG concept.

A number of technical subjects are identified and detailed in the new Strategic plan.

In 2007 a new WG was set up to study the use of storage to support the integration of DER.

#### SC working bodies

List of working forces still active after the 2007 TC meeting.

Type	Number	Title	Name of Convenor	Created	Disbanded
WG	C6.04	Connection and protection practices for dispersed generation <b>(1)</b>	N. Hatziargyriou (GR)	2003	2006
TF	C6.04.02	Computational tools and techniques for analysis, design and validation of distributed generation systems <b>(1)</b>	K. Strunz (US)	2003	2005
WG	C6.05	Technical and economic impact of DG on transmission and generation systems <b>(2)</b>	G. Strbac (UK)	2003	2005 Disbanded in 2007
WG	C6.08	Integration of a large share of fluctuating power <b>(3)</b>	H. Weber (DE)	2004	2006
WG	C6.09	Demand side response <b>(3)</b>	A. Baitch (AUS)	2004	2007
WG	C6.10	Technical and commercial standardisation of DER/microgrids components	J. M. Oyarzabal (E)	2006	2009
WG	C6.11	Development and operation of active distribution networks	C. D'adamo (I)	2006	2009
WG	C6.13 (ex07)	Rural Electrification <b>(3)</b>	G. Dagbjartsson (CH)	2006	2008
JWG	C6.14/C3.05	Environmental impact of dispersed generation	T. Smolka (DE)	2006	2009
WG	C6.15	Electric energy storage systems	Z. A. Styczynski (DE)	2007	2009
AG	C6.01	Strategic advisory group	A. Invernizzi (IT)	2002	Permanent

AG	C6.12	Tutorial advisory group	T. Gaunt (ZA)	2006	Permanent
----	-------	-------------------------	---------------	------	-----------

- (1) The first TF of the WG (C6.04.01) concluded the activity in 2006, published the final reports in 2007 and is already disbanded; the final report of the second TF of the WG (C6.04.02) is expected soon. WG C6.04 and TF C&.04.02 shall then be disbanded.
- (2) The WG did not achieve the expected results. In 2007 the decision was taken to disband the WG.
- (3) Final results expected to be presented at the 2008 SC meeting.

## SC publications

- ELECTRA, February 2007, “*Operating dispersed generation with ICT*”, Summary of the Technical Brochure of WG C6.03
- Technical brochure, Ref. 311, 2007, “*Operating dispersed generation with ICT*”, Final report of WG C6.03
- ELECTRA, February 2007, “*Connection criteria at the distribution network for dispersed generation*” summary of the Technical Brochure of TF C6.04.01
- Technical Brochure, Ref. 313, 2007, “*Connection criteria at the distribution network for dispersed generation*” Final report of TF C6.04.01
- ELECTRA, December 2007, “*SC C6 2007 Colloquium: Electricity for rural socio-economic development*”, by A.Invernizzi, G.Dagbjartsson, A. Zomers

The plan for 2008 publications is as follows.

- Strategic report of SC C6 to be published on April 208 issue of ELECTRA
- Technical brochure and summary for ELECTRA on results of TF C6.04.02, “*Computational tools and techniques, design and validation of DG systems*” to be published late 2008

## SC website

The SC website was rebuilt using the tools provided by the Central Office; it is currently updated by the SC Secretary.

## SC Strategic Plan and Action Plan

In the 2006 SC meeting in Paris the 2007-2016 Strategic Plan was finally approved; the plan is now fully in force. The 2007 – 2008 Action Plan indicates the activities to be undertaken under guidance of the new Strategic Plan.

## SC meetings

The SC met on May 2, 2007 in Langkawi, Malaysia, under invitation of the Malaysian National Committee.

In 2009 the SC shall meet in Canada in conjunction with the CIGRE/PES Symposium.

## **SC participation to Regional Meetings and Symposia**

In 2007 the SC participated to the organisation, together with the Malaysian National Committee, of a 2 days Colloquium (May 3 and 4) on “*Electricity for rural socio-economic development*“. The Colloquium was organised with the support of Asia-Oceania Regional Council (AORC-CIGRE), HAPUA (Head of ASEAN Power Utilities and Authorities) and CIRED Malaysia.

In 2009 the SC shall participate to the organisation of the CIGRE/PES Symposium. on “Integration of wide-scale renewable resources into power delivery system” to be held in Calgary (Canada) on July 29 – 31.

## **Relations with other organisation**

Relations with EURELECTRIC, CIRED and IEA are well established through the action of the Chairman and of some members who are also active in those associations; a link is also assured with IEEE Committees and WGs active on topics of interest of the SC by the action of the USA member.

In 2007 the Chairman chaired a round table on “European regulators and the experience of introduced regulations” during the 2007 CIRED Conference.

Three members of the SC are members of the Advisory Council of the European Technology Platform SmartGrids, stated in 2005.