



## 2011 Activity Report

### Study Committee C6

#### 1. Highlights

- Active participation Bologna Symposium 2011 with several parallel tutorials
- Technical Brochures published:
  - Grid Integration of Wind Generation, February 2011
  - Development and operation of active distribution networks, April 2011
  - Electric Energy Storage Systems, April 2011
  - Demand Side Integration, August 2011
- Electra: SC C6 REPORT - The challenge of rural electrification
- Ideas for 4 new WGs collected, ToR created

#### 2. Working group changes since the last TC meeting

##### a. New WG

WG	Title of the Working Group	Date of approval	Convenor
C6-25	Control and Automation Systems for Electricity Distribution Networks of the Future	<i>status unclear</i>	G, Mauri (IT)
C6-26	Protection of Distribution System with DER	<i>status unclear</i>	Birgitte Bak-Jensen (DK)
C6-27	Asset management for distribution networks with high penetration of distributed energy resources	<i>status unclear</i>	Britta Buchholz (DE)

##### b. WG Disbanded

- no WGs have been disbanded in 2011

##### c. Allocation of WG to the 10 Technical Issues of the Network of the Future and the 4 TC strategic directions

WG	Title of the Working Group	Date of approval	Strategic Directions
C6-16	Technologies employed in rural electrification	26/01/09	4
C6-19	Planning and optimization methods for active distribution systems	02/01/10	1,3
C6-20	Integration of electric vehicles in electric power systems	09/01/10	1,3
C6-21	Smart Metering	25/05/10	1,2
C6-22	Microgrids Evolution Roadmap	20/04/10	1,2
C6-24	Capacity of Distribution Feeders for Hosting DERs	11/03/03	2,3

\* Strategic Directions : indicate the main strategic direction, or the two main directions if needed

- 1 : The future power system
- 2 : Best use of the existing power system
- 3 : Environment and sustainability
- 4 : Communication with the public and with political decision makers



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### 3. Publications

#### a. Publications since the last TC meeting (April 2011)

- Technical brochure and summary for ELECTRA on results of WG C6.08, “Integration of a large share of fluctuating power”, by February 2011
- Technical brochure and summary for ELECTRA on results of TF C6.04.02, “Benchmark Modeling and Simulation for Analysis, Design, and Validation of Distributed Energy Systems”, by September 2011
- Technical summary for ELECTRA on results of WG C6.05, “Technical and Economic impact of DG on Transmission and Generation Systems”, by October 2011
- Technical brochure and summary for ELECTRA on results of WG C6.15, “Electric Energy Storage Systems”, by July 2011
- Technical brochure and summary for ELECTRA on results of WG C6.16, “Technologies employed in rural electrification”, by November 2011
- Technical brochure and summary for ELECTRA on results of WG C6.11, “Active Distribution Networks”, by July 2011
- Technical brochure and summary for ELECTRA on results of WG C6.09, “Demand Side Integration”, by July 2011

#### b. Publication plan for the coming year

Working Group	Title	Kind of publication	Expected date
<b>WG C6.16</b>	Technologies employed in rural electrification	<i>Technical brochure and summary for ELECTRA on results</i>	12/12
<b>WG C6.19</b>	Planning and optimization methods for active distribution systems	<i>Technical brochure and summary for ELECTRA on results</i>	10/12
<b>WG C6.20</b>	Integration of electric vehicles in electric power systems	<i>Technical brochure and summary for ELECTRA on results</i>	08/13
<b>WG C6.21</b>	Smart Metering – state of the art, regulation, standards and future requirements	<i>Technical brochure and summary for ELECTRA on results</i>	12/12
<b>WG C6.22</b>	Microgrids Evolution Roadmap	<i>Technical brochure and summary for ELECTRA on results</i>	12/12
<b>WG C6.23</b>	Capacity of Distribution Feeders for Hosting DER	<i>Technical brochure and summary for ELECTRA on results</i>	12/12
<b>TF C6.04.02</b>	Computational Tools and Techniques for Analysis, Design and Validation of Distributed Generation Systems	<i>Technical brochure and summary for ELECTRA on results</i>	01/12



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### 4. Tutorials and workshops in 2011

- CIRED, Frankfurt, Jun 2011:

Tutorial on probability-based analysis of voltage drop in MV and LV feeders with dispersed generation (Gaunt, Celli, et al)

- CIGRE Symposium, Bologna, Sep 2011: Three tutorials on
  - Distribution planning (F. Pilo)
  - Impact of EVs (J.P. Lopes)
  - Microgrid topologies (Suryanarayanan)

### 5. Strategic Plan and Action Plan : status (to be reviewed, updated, re-written or still valid, consideration of the TC strategic directions)

A strategic plan for the period 2007-2016 and an action plan for the period 2010-2011 (last update December 2010) are available; both are still valid. An update of the strategy plan will be discussed in next SC C6 meeting in August in Paris.

### 6. Planned SC meetings (in 2011 and next)

In 2011 the SC met in Bologna on September 16th during the CIGRE Symposium.

The 2012 SC meeting will take place in conjunction with the CIGRE Session in Paris, on Wednesday, August 29th 2012.

The 2013 SC meeting will take place in Yokohama, Japan, on October 11th, 2013

### 7. Participation to Regional Meetings, colloquia and symposia :

- In 2011 (passed)
  - Bologna (Italy) - The electric power system of the future - Integrating Supergrids and Microgrids - September 13-15, 2011, supported by SC C6
- In 2012 and beyond (scheduled)
  - Yokohama (Japan) – Symposium, title to be confirmed - October 2013, supported by SC C6

### 8. Relations with other organisations

The SC C6 chairman Nikos Hatziargyriou is strongly involved in European smart grids technology platform and European research activities.

Close connections to CIRED and IEEE exist due to activities of SC C6 members.

### 9. Measures to improve the quality of SC documents

All documents have to follow a quality check.

### 10. SC website : on-line contents and date of last update

SC website is regularly updated, last update on January, 31<sup>th</sup> 2012

### 11. Communication Officer

Alex Baitch from Australia was assigned to be communication officer.

### 12. Miscellaneous