



## 2014 Activity Report

### Study Committee C6 – April 9, 2015 (MAXIMUM OF 4 PAGES)

#### 1. Highlights

- 3 Technical brochures published  
TB 575 “Benchmark Systems for Network Integration of Renewable and Distributed Energy Resources”  
TB 586 “Capacity of distribution feeders for hosting DER”  
TB 591 “Planning and optimization methods for active distribution systems”  
Report on Rural Electrification in Electra 273 by WG C6.17
- 2 Final reports available  
WG 6.20: “Integration of electric vehicles in electric power systems” ;  
& WG C6.22 “Microgrids Evolution Roadmap”: First part of final report ready for approval by TC
- 4 new proposals for working groups in progress  
“Power electronics for voltage regulation”; “Smart Meter Data”; „MVDC Grid Feasibility Study“; „Problems and Contribution of DER connected at Distribution Networks to the Transmission System Operation”

#### 2. Working Group changes since the last TC meeting :

##### a. New WG

WG	Title of the Working Group	Date of approval	Convenor
C6.28	Hybrid systems for offgrid power supply	2014	Ravi Seethapathy (Canada)
C6.30	Battery electric storage systems	2014	Nikos Hatziargyriou (GR)

ToR in progress / for approval

C6	Power electronics for voltage regulation	Expected 2015	Ken ASH (Australia)
C6	Utilisation of data from smart meter system	Expected 2015	Yasuo MATSUURA, (Japan)
C6	MVDC Grid Feasibility Study	Expected 2015	Zhao MA (China)
C2-C6	Problems and Contribution of DER connected at Distribution Networks to the Transmission System Operation	Expected 2015	Nikos Hatziargyriou (Greece)



## 2014 Activity Report

### b. WG Disbanded

Three working groups were disbanded in 2014:

WG C6.19 "Planning and optimization methods for active distribution systems"

WG C6.20 "Integration of electric vehicles in electric power systems"

WG C6.24 „ Capacity of Distribution Feeders for Hosting DER”

JWG B5/C6.26/CIREN “Protection of Distribution System with Distributed Energy Resources” has provided all material in March 2015 and is supposed to be disbanded at the next SC meeting in 2015.

### c. Total number of active WGs, JWGs: 9

<b>WG</b>	<b>Title of the Working Group</b>	<b>Date of approval</b>	<b>Convenor</b>
C6.21	Smart Metering	2010	E. Navarro (E)
C6.22	Microgrids Evolution Roadmap	2010	Ch. Marnay (US)
C6.23	Terminology	2010	A. Baitch (AU)
JWG B5/ C6.25/CIREN	Control and Automation Systems for Electricity Distribution Networks of the Future	2012	G. Mauri (IT)
JWG C6.26/CIREN	Protection of Distribution System with DER	2012	B. Bak-Jensen (DK)
C6.27	Asset management for distribution networks with high penetration of distributed energy resources	2012	B. Buchholz (DE)
C6.28	Hybrid systems for Offgrid-Supply	2014	R. Seethapathy (Canada)
C4/C6.29	Power quality aspects of solar power	2012	C6 liaison member: S. Papathanassiou (GR)
JWG C4/C6.35/ CIREN	Modelling and dynamic performance of inverter based generation in power system transmission and distribution studies	2013	C6 liaison member: M. Braun (DE)
C6.30	The Impact of Battery Energy Storage Systems on Distribution Networks	2014	N. Hatziargyriou (GR)



## 2014 Activity Report

- d. Allocation of WG to the 4 TC Strategic Directions and the 10 Technical Issues of the Network of the Future (only one SD and TI per WG)

WG	Title of the Working Group	Strategic Directions	Technical Issue
C6.21	Smart Metering	2	2
C6.22	Microgrids Evolution Roadmap	1	1
C6.23	Terminology	4	-
C6.27	Asset management for distribution networks with high penetration of distributed energy resources	2	5
C6.28	Hybrid systems for offgrid power supply	1	7
JWG B5/ C6.25/CIREN	Control and Automation Systems for Electricity Distribution Networks of the Future	1	5
JWG C6.26/CIREN	Protection of Distribution System with DER	1	6
JWG C4/C6.29	Power quality aspects of solar power	1	3
C6.30	Battery electric storage systems	1	4
JWG C4/C6.35/ CIREN	Modelling and dynamic performance of inverter based generation in power system transmission and distribution studies	1	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

### 3. Publications

- a. Publications during 2014

Working Group	Title	Kind of publication	Date
TF C6.04.02	TB 575 Benchmark Systems for Network Integration of Renewable and Distributed Energy Resources	<i>Technical brochure and summary for ELECTRA on results</i>	04/14
C6.24	TB 586 Capacity of Distribution Feeders for Hosting DER	<i>Technical brochure and summary for ELECTRA on results</i>	06/14
C6.19	TB 591 Planning and Optimization Methods for Active Distribution Systems	<i>Technical brochure and summary for ELECTRA on results</i>	08/14
C6.17	Electra 273 Report on Rural Electrification	<i>Report in ELECTRA on results</i>	04/14



## 2014 Activity Report

### b. Publication plan for the coming year

Working Group	Title	Kind of publication	Date
JWG B5/C6/CIREC	TB 613 "Protection of Distribution System with Distributed Energy Resources" (JWG B5/C6/CIREC)	<i>Technical brochure and summary for ELECTRA on results</i>	03/15
<b>WG C6.20</b>	Integration of electric vehicles in electric power systems	<i>Technical brochure and summary for ELECTRA on results</i>	04/15
<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>	08/15
<b>WG C6.22</b>	Microgrids Evolution Roadmap	<i>Technical brochure and summary for ELECTRA on results</i>	06/15
<b>WG C6.27</b>	Asset management for distribution networks with high penetration of distributed energy resources	<i>Technical brochure and summary for ELECTRA on results</i>	09/15

### c. Green Books progress

Preparation for the green book has started to be published in 2018

4. **Tutorials and workshops in 2014** : No tutorials were offered in 2014
5. **Strategic Plan and Action Plan** : Strategic Plan and Action Plan was re-written in March 2015; a draft is ready for comments by C6 AG Strategy
6. **Planned SC meetings** (in 2015 and next)
  - September 8th 2015 : SC-C6 Meeting in Vienna
  - August 2016 : during CIGRE Session 2016 in Paris
7. **Participation to Regional Meetings, colloquia and symposia** :
  - a. In 2014 (passed) –
  - b. In 2015 and beyond (scheduled)
    - September 2015: Vienna
    - August 2015: South Africa
8. **Liaisons and Relations with other organisations:** CIREC, EDSO
9. **Specific actions for the recruitment of young experts, Place of Women in the SC**
  - Chair & Secretary are females and serve as role models. Participation & presentation in first women's lunch during CIGRE Session 2014
  - Experts are continuously encouraged to propose papers, join working groups etc.
10. **SC website : on-line contents and date of last update**
  - SC website is regularly updated, last update on January 2015
11. **Miscellaneous**