



2015 Activity Report

Study Committee SC C6

1. Highlights

- 3 technical brochures published
 TB 613 “Protection of Distribution System with Distributed Energy Resources,
 WG B5/C6.26/CIREN, March 2015
 TB 632 “Integration of Electric Vehicles in Electric Power Systems”, WG 6.20,
 September 2015
 TB 635 “Microgrids 1 Engineering, Economics, & Experience”, WG C6.22,
 October 2015
- 1 Final report available
 WG 6.21: “Smart Metering, Regulatory Aspects, Standards and Development Status”;
 ready for final review
- 3 new WGs had its kickoff
 WG C6.31 “MVDC Grid Feasibility Study”
 WG C6/D2.32 “Utilization of data from smart meter system”
 JWG C2/C6.36 “System Operation Emphasising DSO/TSO Interaction”
- New C6 strategy 2015-2024 developed and approved by SC

2. Working Group changes since the last TC meeting :

a. New WG

WG	Title of the Working Group	Date of approval	Convenor
WG C6.31	MVDC Grid Feasibility Study	2015	Zhao MA (China)
WG C6/D2.32	Utilization of data from smart meter system	2015	Yasuo MATSUURA, (Japan)
JWG C2/C6.36	System Operation Emphasising DSO/TSO Interaction	2015	lead by C2

b. WG Disbanded

JWG B5/C6.26/CIREN “Protection of Distribution System with Distributed Energy Resources”.

c. Total number of active, WGs, JWGs: 12

WG	Title of the Working Group	Date of approval	Convenor
C6.21	Smart Metering	2010	E. Navarro (E)
C6.22	Microgrids Evolution Roadmap	2010	Ch. Marnay (US)
C6.23	Terminology	2010	A. Baitech (AU)



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JWG B5/ C6.25/CIRED	Control and Automation Systems for Electricity Distribution Networks of the Future	2012	G. Mauri (IT)
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)
JWG C4/C6.29	Power quality aspects of solar power	2012	C6 liaison member: S. Papathanassiou (GR)
JWG C4/C6.35/ CIRED	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. Hatziaargyriou (GR)
C6.31	MVDC Grid Feasibility Study	2015	Zhao MA (China)
JWG C6/D2.32	Utilization of data from smart meter system	2015	Yasuo MATSUURA, (Japan)
JWG C2/C6.36	System Operation Emphasising DSO/TSO Interaction	2015	C6 liaison member: Tony Hearne (Ireland)

- 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	-
JWG B5/ C6.25/CIRED	Control and Automation Systems for Electricity Distribution Networks of the Future	1	5
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 C4/C6.29	Power quality aspects of solar power	1	3
JWG C4/C6.35/ CIRED	Modelling and dynamic performance of inverter based generation in power system transmission and distribution studies		
C6.30	Battery electric storage systems	1	4
C6.31	MVDC Grid Feasibility Study		
JWG C6/D2.32	Utilization of data from smart meter system		
JWG C2/C6.36	System Operation Emphasising DSO/TSO Interaction		



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* 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 2015

Working Group	Title	Kind of publication	Date
JWG B5/C6.26/CIRED	TB 613 “Protection of Distribution System with Distributed Energy Resources”	<i>Technical brochure and summary for ELECTRA on results</i>	03/15
JWG B5/C6.26/CIRED	Electra 280 – Brochure Protection of Distribution System with Distributed Energy Resources	<i>Report in ELECTRA on results</i>	06/15
WG C6.20	TB 632 “Integration of Electric Vehicles in Electric Power Systems”	<i>Technical brochure and summary for ELECTRA on results</i>	09/15
WG C6.20	Electra 280 – TB 632 Integration of Electric Vehicles in Electric Power Systems	<i>Report in ELECTRA on results</i>	12/15
WG C6.22	TB 635 “Microgrids 1 Engineering, Economics, & Experience”	<i>Technical brochure and summary for ELECTRA on results</i>	10/15
WG C6.22	Electra 280 – TB 635 Microgrids 1 Engineering, Economics, & Experience	<i>Report in ELECTRA on results</i>	

b. Publication plan for the coming year

Working Group	Title	Kind of publication	Date
JWG C6.25/B5/CIRED	Control and Automation Systems for Electricity Distribution Networks of the Future	<i>Technical brochure and summary for ELECTRA on results</i>	08/15
WG C6.21	Smart Metering – state of the art, regulation, standards and future requirements	<i>Technical brochure and summary for ELECTRA on results</i>	04/16
WG C6.22	Microgrids Evolution Roadmap – part 2	<i>Technical brochure and summary for ELECTRA on results</i>	12/16
WG C6.27	Asset management for distribution networks with high penetration of distributed energy resources	<i>Technical brochure and summary for ELECTRA on results</i>	06/16
WG C6.28	Hybrid systems for off-grid power supply	<i>Technical brochure and summary for ELECTRA on results</i>	12/16
JWG C4.C6.29	Power quality and PVs	<i>Technical brochure and summary for ELECTRA on results</i>	08/16
WG C6.30	Impact of battery energy storage	<i>Technical brochure and</i>	12/16



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		<i>summary for ELECTRA on results</i>	
JWG C4/C6.35/CIREC	Modelling and dynamic performance of inverter based generation in power system transmission and distribution studies	<i>Technical brochure and summary for ELECTRA on results</i>	12/16

c. **Green Books progress**

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

4. **Tutorials and workshops in 2015:** No tutorials were offered in 2015.

5. **Strategic Plan and Action Plan:** Strategic Plan and Action Plan were re-written in March 2015, discussed during SC C6 meeting in September 2015 and approved by all SC C6 members in December 2015.

6. **Planned SC meetings (in 2017 and next)**
2017 Ireland

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

a. In 2015 (passed)

September 2015: IEEE/C6 Colloquium, Vienna, Austria

October 2015: CIGRE/IEC Symposium Cape Town, South Africa

b. In 2016 and beyond (scheduled)

2016 CIGRE Colloquium on Grid Codes, November 2 and 3, 2016
in Philadelphia, PA, USA

2017 CIGRE Symposium, Ireland

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 women and serve as role models.

Experts are continuously encouraged to propose papers, joint working groups etc.

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

SC website is regularly updated, last update on January 2016

11. **Miscellaneous**