

**CIGRÉ – 2010 Activity Report for SC C6**  
**DISTRIBUTION SYSTEMS AND**  
**DISPERSED GENERATION**

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**Hydro One**

# Outline

- ⇒ **Scope and Objectives of the SC**
- ⇒ **Working Group Activities**
  - Recent activities
  - New working groups
- ⇒ **2010 Preferential Subjects**

# SC C6 - Distribution Systems and Dispersed Generation - Scope

- Assessment of technical requirements for widespread adoption of DG/DER/RES and its impact on structure and operation of T&D systems
- Include Rural Electrification, DSM, Limits, Storage, Evs, Smart Meters, Microgrids
- 14 Active WGs (4 new in 2010). 7 will be complete next year

# SC C6 Active Working Groups

Can. Mbr.	Number	Title	Name of Conv.	Cr.	Disb.
Yes	C6.04.02	Computational tools and techniques for analysis, design and validation of distributed generation systems	K. Strunz (DE)	2003	2010
Yes	C6.05	Technical and economic impact of DG on transmission and generation system.	G. Strbac (UK)	2003	2010
Yes	C6.09	Demand Side Integration	A. Baitch (AUS)	2004	2010
Yes	C6.11	Development and operation of active distribution networks	C. D'adamo (IT)	2006	2011
No	C6.14/ C3.05	Environmental Impact of Dispersed Generation	T. Smolka (DE)	2006	2011
Yes	C6.15	Energy Storage Technologies	Z. Styczynski (DE)	2007	2011

# SC C6 Active Working Groups – cont.

Can. Mbr.	Number	Title	Name of Conv.	Cr.	Disb.
Yes	C6.16	Technologies for Rural Electrification	T. Gaunt (SA)	2009	2012
Yes	C6.18/C1/ C2	Coping with limits for very high penetrations of renewable energy	J. Sullivan (IR)	2008	2011
Yes	C6.19	Planning and Optimization Methods for Active Distribution Systems	Fabrizio Pilo (IT)	2010	2012
Yes	C6.20	Integration of Plug-in Hybrid Electric Vehicles in Electricity Grids	Joao A. Pecas Lopes (Portugal)	2009 start 2010	2012
Yes	C6.21	Smart Metering-State of the art, regulation, standards and future requirements	Eduardo Navarro (Spain)	2010	2012
Yes	C6.22	Microgrids Evolution Roadmap	Chris Marnay (USA)	2010	2012

## **SC C6 publications - 2009**

- **ELECTRA, June 2009, “Rural Electrification: A Scoping Report, WG C6.13”.**
- **ELECTRA, August 2009, “The Challenge of Rural Electrification: CIGRE’s Strategy and Organizational Approach”.**

## **SC6 Contributions – 2010/11 Publications**

- ⇒ Technical Brochures & Electra Articles will cover:
- ❑ **C6.04.02 – HV/MV/LV Benchmark Network Models**
  - ❑ **C6.08 – Integrating Large Fluctuating Generation**
  - ❑ **C6.09 – Demand Side Integration**
  - ❑ **C6.10 – Technical/Commercial Standardization of DER Components**
  - ❑ **C6.15 – Energy Storage**
  - ❑ **JW C6.18/C1/C2 – Coping with Limits for high Penetration of Renewables**

## SC C6 Working Groups – Proposals

Type	Number	Title	Name of Conv.	Cr.	Disb.
		New Network Concepts (virtual power plants, energy hubs, active cells)			

A strategic advisory group will review the Cigre Technical Committee “**Network of the Future**” Roadmap and propose areas of activities for C6.

## SC Meeting

- ⇒ July 2009 – Cigre/IEEE Symposium Wind Integration, Calgary, Alberta , Canada
- ⇒ August 2010 – Annual Meeting, Paris, France
- ⇒ 2011 – Brazil or Italy (tbd)

# 2010 Paris Preferential Subjects

- **PS1: Planning and Operation incorporating DER/RES (23 papers)**
  - Operation/Performance characteristics of Dx with high penetration of DER/RES
  - Effect of large scale integration on reliability
  - Provision of ancillary services by DER/RES
  - Regulatory schemes to support DER/RES and to implement smart grids
  
- **PS2: Demand Side Integration (8 papers)**
  - Load characteristics of appliances
  - Practical experience of DSI through pricing
  - V2G (challenges and opportunities)
  
- **PS3: New concepts/Technologies for Rural/Remote Electrification (8 papers)**
  - Microgrids, other advanced methods and DERs
  - Financing schemes, service delivery methods
  - Practical experience including system upgrades and grid connections

**Thank You**