

EPRI Pre-Conference Workshop

CIGRE C6.11: Development and operation of active distribution networks

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Membership: 27 members, experts and observers

Convenor: Christian D'Adamo, ENEL

Background

- CIGRE
 - 16 Study committees
 - Number of working on various topics related to SC objectives
 - Documentation and dissemination of knowledge
- CIGRE C6 study committee – dispersed generation and distribution networks
- C6.11 working group – planning and operation of active distribution networks

C6.11 Working Group - Scope

- Provide a shared definition of active networks;
- Assess the actual status of implementation of active networks worldwide;
- Assess the network and generators requirements for the integration of DER (islanding criteria, black start capability and ancillary services);
- Identify the enabling technologies;
- Identify limits/barriers (infrastructure requirements, DG control, technology, economic, contractual / regulatory)

C6.11 Working Group - Achievements

- Preparation of a survey on active distribution networks
 - Define “distribution active network” concept and main features
 - Review actual status of implementation and barriers
 - Review actual operational rules for DG
- Definition of 5 sub-WG and review of questionnaire responses
- Presentation of results from 5 WGs at Aug. 2008 meeting
- Draft of paper for Electra based on survey results

Active Distribution Network Definition

Revised Definition

Active networks are distribution networks with the possibility of controlling a combination of Distributed Energy Resources (generators, loads, and storage). The DSO has the possibility to manage electricity flows using a flexible network topology. DERs take some degree of responsibility for system support, which will depend on a suitable regulatory environment and connection agreements.

Future Activities

- Finalize Electra paper
- Summarize results from EPRI workshop
- Participation in CIREN tutorial and panel session
- Document innovative pilot projects using standard template
- Classify active distribution network applications
 - Distribution network operator benefits
 - Enabling technologies
 - Barriers or research needs
- Final technical report (August 2010)