CIGRE Study Committee C6, « Distribution Systems and Dispersed Generation »

PROPOSAL FOR CREATION OF A NEW WORKING GROUP *

WG N° C6/D2.32	**Name of Convenor: Yasuo Matsuura (JP)**
Technical Issues: 2	**Strategic Directions: 1**
The WG applies to distribution networks: Yes	
Title of the Group: Utilization of data from smart meter system	

Scope, deliverables and proposed time schedule of the Group

Background:

Smart Meters which collect a huge amount of metering data are being installed worldwide. This data represents the actual condition of energy usage on customer side and has great potential for providing valuable information for the management of many issues on power distribution grid, such as overvoltage problems and reverse power flow caused by mass deployment of renewable energy sources and the new developments in demand side, like electric vehicle and demand response.

By using ICT, especially "Big Data" technology, this huge amount of smart meter data could be extensively utilized. Coordination with other systems, such as distribution automation systems, has further potential.

Scope:

The aim of this WG is to provide an overview of data utilization, to integrate and organize the values, tasks, and approaches to be taken, and to make a proposal to the electric power utilities and associated market participants. The following topics will be elaborated within this WG:

Review general outlines, specifications and deployment plans of smart meter system based on the work done by WG C6.21.

- General outlines of smart meter system in each country, area or company
- Summary of examples on how smart meter data has been already utilized

Survey:

- Needs and ideas of the utilization of data from smart meter system
- Tasks in order to realize such needs and ideas
- Technologies and co-ordinated systems required to realize such needs and ideas
- Actual evaluation cases and actual applications of data utilization

Propose potential use cases in future power systems

Deliverables: Report to be published in Electra or technical brochure with summary in Electra.

Time Schedule: start : 2015 **Final report**: 2017

Comments from Chairmen of SCs concerned:
This addresses a very important issue which is relevant world-wide. I recommend mentioning briefly in the background section the potential relevance of smart meter data for distribution and overall/transmission system planning, and for the participation of customers in various electricity product markets including ancillary services. In the scope section it could be interesting to add some info about the interfaces to other utility data and control systems that respondents have considered.

Approval by Technical Committee Chairman:

Date: 07/07/2015

Table 1: Technical Issues of the TC project "Network of the Future" (cf. Electra 256 June 2011)

1	Active Distribution Networks resulting in bidirectional flows within distribution level and to the upstream network.
2	The application of advanced metering and resulting massive need for exchange of information.
3	The growth in the application of HVDC and power electronics at all voltage levels and its impact on power quality, system control, and system security, and standardisation.
4	The need for the development and massive installation of energy storage systems, and the impact this can have on the power system development and operation.
5	New concepts for system operation and control to take account of active customer interactions and different generation types.
6	New concepts for protection to respond to the developing grid and different characteristics of generation.
7	New concepts in planning to take into account increasing environmental constraints, and new technology solutions for active and reactive power flow control.
8	New tools for system technical performance assessment, because of new Customer, Generator and Network characteristics.
9	Increase of right of way capacity and use of overhead, underground and subsea infrastructure, and its consequence on the technical performance and reliability of the network.
10	An increasing need for keeping Stakeholders aware of the technical and commercial consequences and keeping them engaged during the development of the network of the future.

Table 2: Strategic directions of the TC (cf. Electra 249 April 2010)

1	The electrical power system of the future
2	Making the best use of the existing system
3	Focus on the environment and sustainability
4	Preparation of material readable for non technical audience