

Presented by Graeme Ancell- Convener

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For power system expertise

C1

Power system
development and
economics



SC C1 Overview

Study Committee Scope

The scope of Study Committee C1 is to study economics and system analysis methods for the development of power systems in order to support electricity system planners worldwide

Specific Activities of SC C1:

System planning

Asset management

Business management

Interconnections – horizontal, vertical



Chengdu Symposium

20-25 September 2019

Towards active, sustainable digital networks that are resilient and integrated from UHV to distribution

Keynote Speakers

“Technology and Applications of **IOT** in Electricity Power”, Kunlun Gao, Global Energy Interconnection Research Institute

“Three Issues in the Application of **Electric Internet of Things** for Energy Transition”, Junyong Liu, Professor of Sichuan University

“Potential Effects of **IoT** Devices on Electricity Demand Functions under Sector Coupling Scenarios”, Konstantin Staschus, Chair of C1



Reliability' and 'resilience'. A holistic view

The power system

Resilience

Design of

- Primary equipment
- Monitoring, protection and control equipment
- ICT systems
- The power system

Investment in

- Primary equipment
- Monitoring, protection and control equipment
- ICT systems
- The power system

Processes and structures

- Construction
- Maintenance & repair
- Planning & investment
- Operation
- Stakeholder relations

Reliability

- Quantification of probability of preventing adverse outcomes
- Operational rules for prevention & containment of adverse outcomes

Prevention
of adverse
outcomes

Containment
of adverse
outcomes

Recovery
from adverse
outcomes

Disturbances

System users'
actions

Actions of
malicious actors

Policy makers'
actions

Weather

The natural
environment

Society, technology
and the economy

Climate

Relevance to Australia

SC C1 has produced many Technical Brochures with very high relevance to the Australian electrical industry.

TB 775 Global electricity network - Feasibility study

TB 715 The future of reliability - Definition of reliability in light of new developments in various devices and services which offer customers and system operators new levels of flexibility

TB 701 Review of drivers for transmission investment decisions

TB 681 Planning criteria for future transmission networks in the presence of a greater variability of power exchange with distribution systems

TB 670 Establishing best practice approaches for developing credible electricity demand and energy forecasts for network planning

TB 666 Technical risks and solutions from periodic, large surpluses or deficits of available renewable generation



2019 Deliverables

TBs published in 2019

TB 775 Global electricity network - Feasibility study

WGs nearing completion with a TB expected late 2019 or 2020

C1.34 ISO SERIES 55000 STANDARDS: IMPLEMENTATION AND INFORMATION GUIDELINES FOR UTILITIES

C1.38 Valuation as a comprehensive approach to asset management in view of emerging developments

Other WG of interest

C1.44 Global Interconnected and sustainable electricity system Effects of storage, demand response and trading rules

C1.41 “Closing the Gap in Understanding between Stakeholders and Electrical Energy Specialists”

ATC Seminar 2019