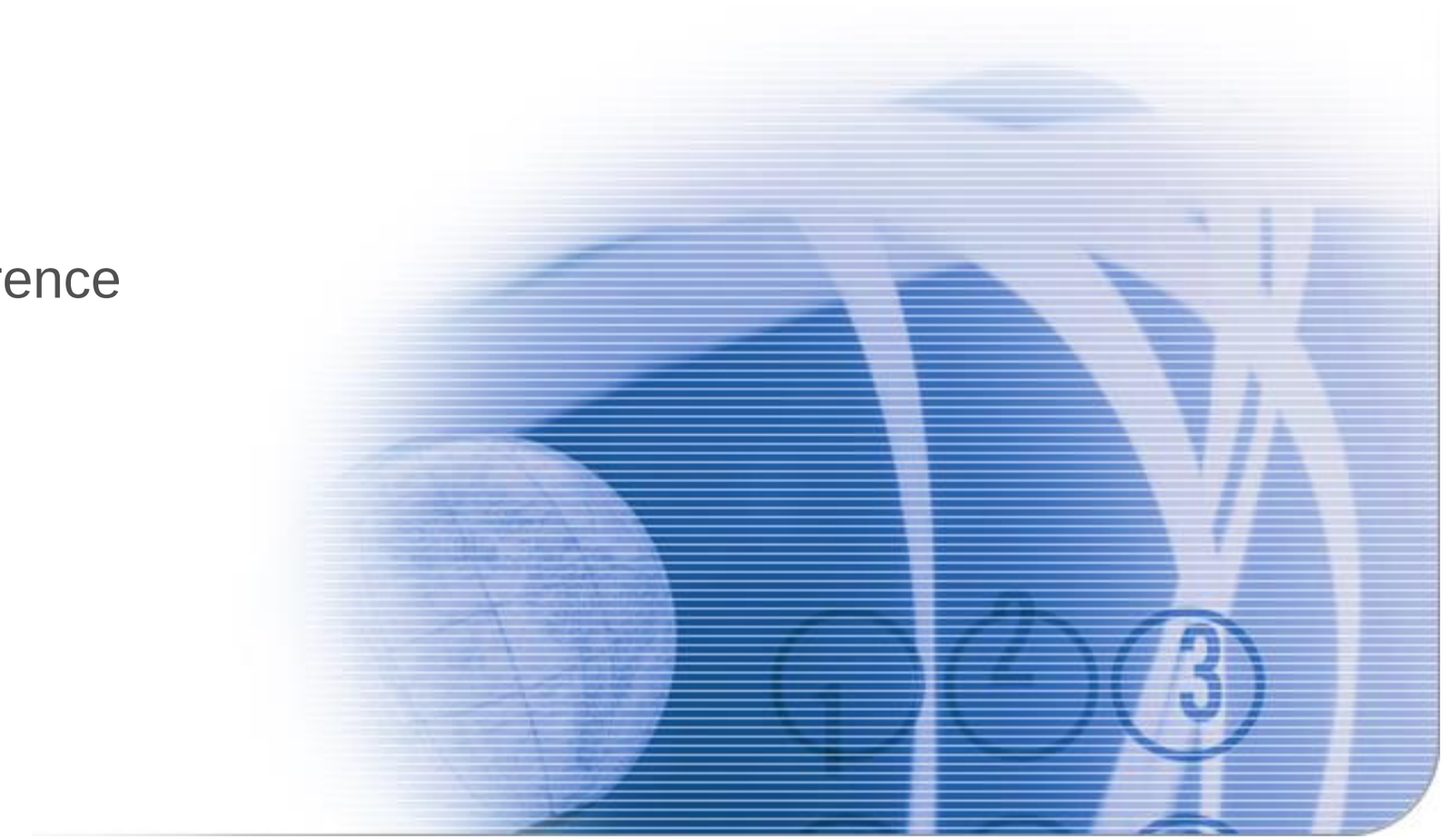
Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

IEC TC120

Global Storage Conference
Paris, 2014-11-19

Erik Wolf – Chairman
Hideki Hayashi– Secretary



Status of the TC120

- TC 120 was proposed to the IEC by Japanese NC, based on an IEC MSB WP.
- IEC did accept the proposal in October 2012.
- Established 2012

- 1st Plenary, Tokyo 2013-07-17, kick-off
- 2nd Plenary, Frankfurt, 2013-12-11/12, liaison, structure, scope and WGs
- 3rd Plenary, Milano, 2014-05-21/22, kick-off WGs & ahWG, nomination of convener
- 4th Plenary, Tokyo, 2014-11-08

- 17 membership countries
- Five working groups and one adhoc group found & working
- Liaison to other TC established to avoid duplication in work & results

Overview of working groups

WG 1 Terminology

WG 2 Unit Parameters & Testing

WG 3 Planning & Installation

WG 4 Environmental Issues

WG 5 Safety Considerations

ahG 1 Gap Analysis

Liaison:

IEC TC111 and WG 1 & 4, AHG 5

IEC TC 8, TC 21, TC 22, TC 57, TC 64, TC 65, TC 95, TC 99

ISO TC 207 WG 5 & 7

General statement

- In the context of TC120, EESS acts as an **enabler to integrate high to 100% share of** fluctuating **renewable energies** (fRE) such as PV and wind power in existing or in new electrical systems.
- The focus on fRE serves not just as an example.
  - that type of RE poses the highest challenges for system compliant integration
  - fRE are the most used ones due to the low energy production costs
  - fRE are globally available
- Once TC 120 has **derived a methodology to integrate fRE**, other RE resources such as tidal, hydro power can easily be addressed as their predictability is better.
- The **standard(s)** will have to be applicable to all potential storage technologies and is therefor **technology independent**.
- The technical specification(s) may provide recommendation per technology

Storage Applications

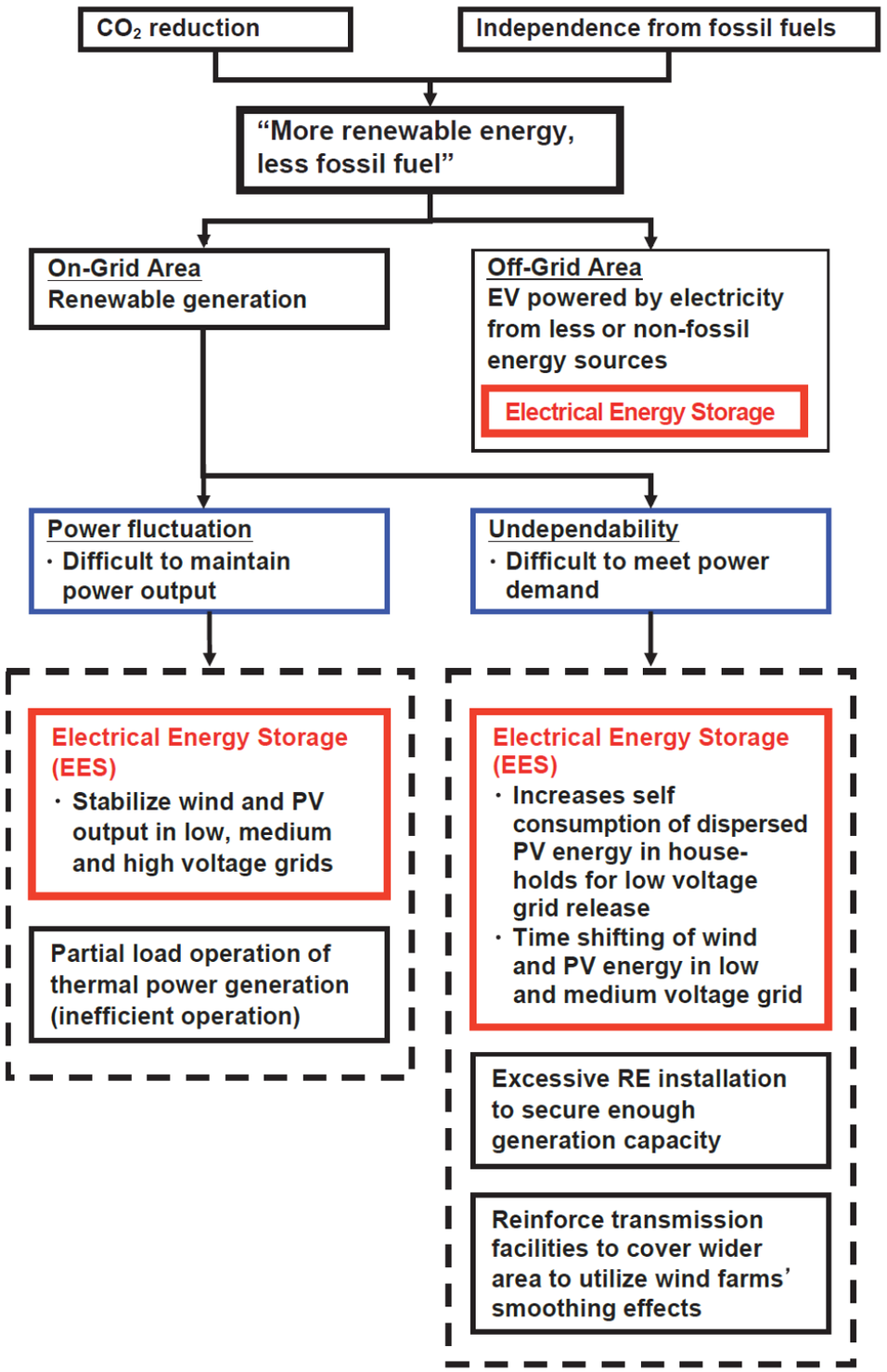


Figure 1-2 – Problems in renewable energy installation and possible solutions
(TEPCO)

WG 1 Terminology (Italy, Standard)

- WG 1 is responsible for the definition of meaningful and necessary terms applicable to describe and to operate EESS. It includes also auxiliary parameters which for example are used during testing and commissioning only.

WG 2 Unit Parameter & Testing (Japan, Standard)

- WG 2 defines unit parameters and testing methods to ensure the required performance of the EESS.
- WG 2 provides techniques which are used to validate in a standardized procedure the performance data provided by the manufacture of the EESS. The testing concerns the energy as well as the grid forming and grid stability required parameters.

WG 3 Planning & Installation (Germany, Standard)

- Planning and installation will determine the dimensioning and sizing of the EESS.
- The expected result of the WG 3 work is **a standardized methodology** that will be used by electrical system owners and planers to integrate fRE and others by assessing all relevant aspects of their system and **to receive the necessary performance parameters and information** of the EESS.
- Based on the needs, the adequate storage technology can be selected (not part of TC 120).
- Before the physical installation, for example model based simulation can be used to verify the effectiveness of the EESS in respect to the two main requirements. That type of a model may jointly be developed by WG 2 & 3.

WG 4 Environmental Issues
(S-Koera, Standard)

- It is assumed by the TC 120 that in order to get permissions to bring an EESS in commercial operation, it must comply to the environmental requirements. The standards cover the normal operation of the EESS as well as the end of life handling (e.g. recycling).

WG 5 Safety Considerations (France, Technical Specification)

- Safety concerns the operation / the autonomous operation of a storage device within an electrical grid. The potential risks to other grid connected users and suppliers such as consumers, generators and service personnel will be assessed and gathered in a globally valid Technical Specification.

ahG 1 Gap Analysis (US, TC internal work)

- Overview of existing and ongoing standardization work that could lead to an overlap of the TC120 activities.
- All WG are asked to inform ahG 1 if they have identified potential fields of duplicates. ahG 1 will validate the finding and provide guidance.
- Currently the main purpose of ahG 1 is the avoidance of duplications of the TC 120 work in relation to other international normative activities.

Thank you for your attention!