

IECTC III Presentation



IEC TC 111 Chair
Dr. Miyuki TAKENAKA

- **Event:** TC 111 Workshop for CFP and PCR
- **Date:** September 27, 2024
- **Location:** CROWNE PLAZA SHANGHAI
NOAH SQUARE

Agenda

- 1. Introduction and Scope of the TC 111**
- 2. Current Activities in TC 111**
- 3. Horizontal Function and Horizontal Publication**
- 4. Cooperation with Stakeholders**
- 5. Conclusion**

IEC TC 111 Overview

Environmental standardization for electrical and electronic products and systems



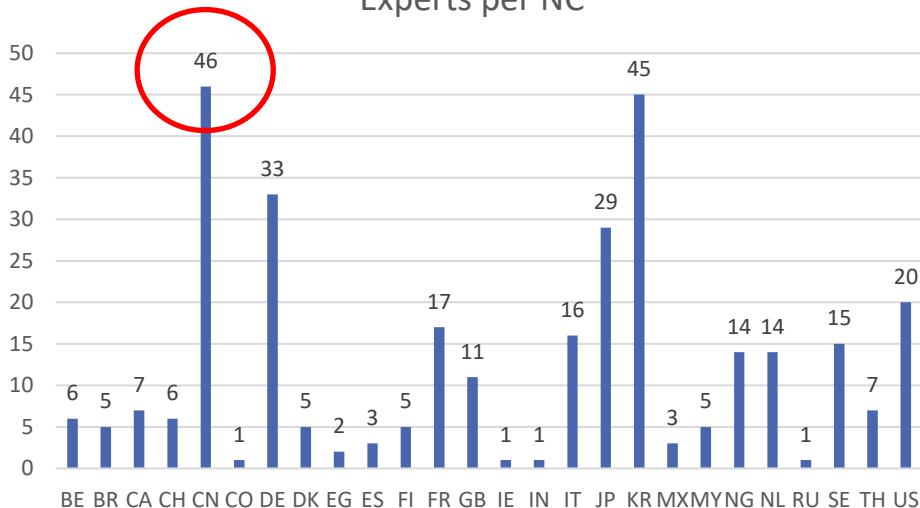
International
Electrotechnical
Commission

- **Established in October 2004**
- **TC 111 Officers**
 - **Secretariat: Alfonso Sturchio (IT)**
 - **Assistant Secretariats: Andrea Legnani (IT), Vittoria Vitagliano (IT)**
 - **Chair: Miyuki Takenaka (JP)**
 - **Vice-Chair: Walter Jager (CA)**
- **Countries: 27 P-members + 11 observer**
- **Experts: 385+ from 38 countries**
- **Liaisons: 24 IEC, 10 ISO, 5 ORG (ECMA, ECOS, WBCSD, FEICA, IAEG)**
 - **Including several joint standards development projects with ISO**
- **Publications: 37**
- **Active groups: 17**
- **Chairman Advisory Group (CAG)**
- **Standardization Strategy Advisory Group (AG2)**



TC 111 Facts and figures

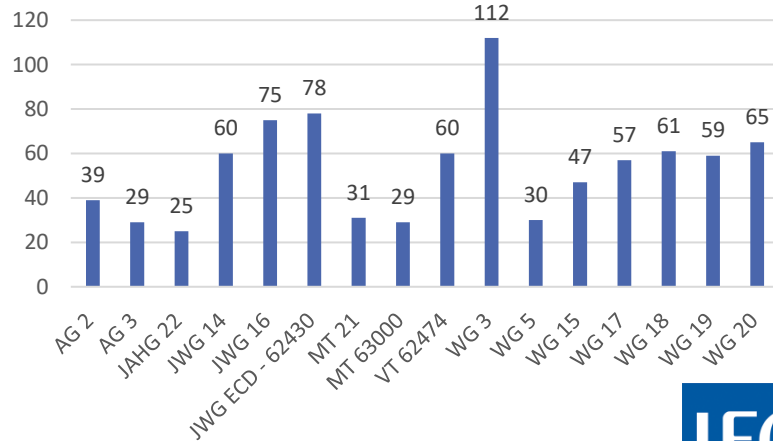
Experts per NC



P-members:
Nigeria (2023-02)

- P-member countries 27
- O-member countries 11
- Number of sub-groups 16
- Number of experts 385
- Number of published standards 31
- Number of ongoing projects 12
- Number of NPs in 3 years 7
- Number of publications in 5 years 14

Experts per sub-group

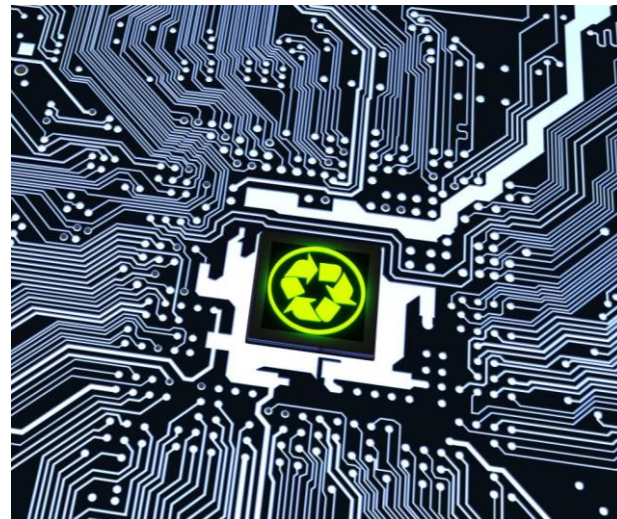


Scope of IEC TC 111

Standardization of **environmental aspects** concerns:

- To prepare the necessary guidelines, **basic and horizontal standards**, including technical reports, in the environmental area, **in close cooperation with product committees** of IEC, which remain autonomous in dealing with the environmental aspects relevant to their products;

- To liaise with product committees in the elaboration of environmental requirements of product standards **in order to foster common technical approaches and solutions** for similar problems and thus assure consistency in IEC standards;

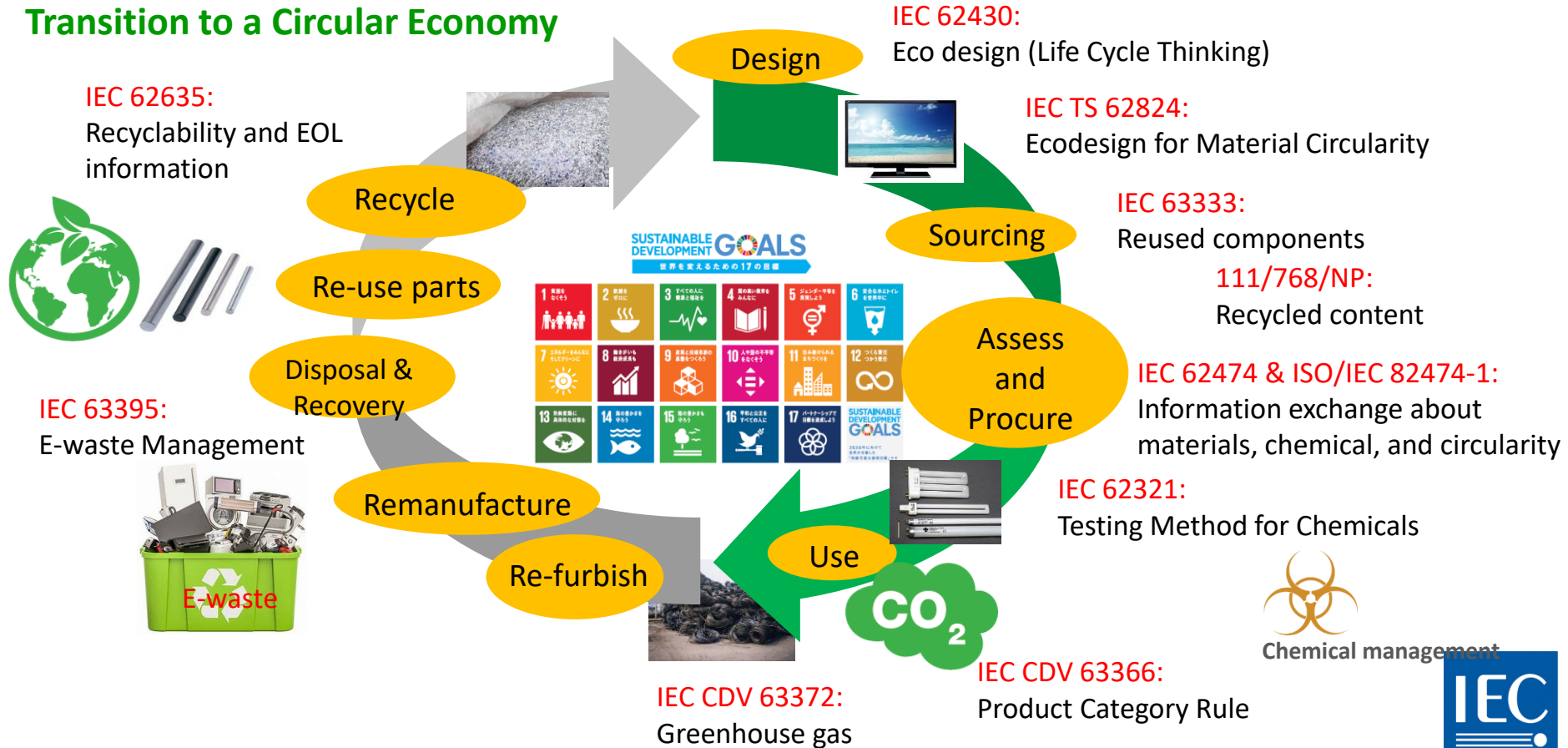


What are Environmental Aspects ?

- **Chemical substances and materials in EE Products**
 - testing, management, communication, and documentation
- **Environmentally Conscious Design (ECD)**
- **The principles and requirements for implementing a circular economy**
 - incl. use of circular materials and waste management of EEE
- **Greenhouse Gas (GHG) emissions and reductions**
- **Life Cycle Assessment (LCA)**
 - **Product Category Rules (PCR)**
- **Environmental performance assessment of products**

TC 111 contribution to the environmental standards

Transition to a Circular Economy



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Material Declaration

IEC 62474: Material declaration for products of and for the electrotechnical industry

- Specifies the requirements for reporting the substances and materials used in electronic and electrical products
- Parts of the standard are in a Database (SDB) -- updated on a regular basis
Free access: <http://std.iec.ch/iec62474/iec62474.nsf/>
- Edition 2.0 published in November 2018
- Update to the Data Exchange Format (DXF) to include circularity information to be published in March 2024



Supply chain
management

ISO/IEC 82474-1 Material declaration – Part 1: General requirements

- Cross-sector material declaration standard
- CDV/DIS Approved in both ISO and IEC; publication is expected in late 2024
- Leverages IEC 62474 as a starting point and adds Process Chemical Declaration, Reference List formats, web services to S2S data exchange.
- Extensive support for circular economy



Test Methods

IEC 62321-X Series: Determination of certain substances in electrotechnical products

- The development of screening and verification test methods of certain substances relevant to EEE
- Developing New part of JWG with ISO/TC 61 (Plastics)
- Revisions and new standards under development for:
 - Tetrabromobisphenol A (TBBPA) in plastics
 - Elemental Screening by X-ray fluorescence spectrometry
 - Polycyclic aromatic hydrocarbons (PAHs) in polymers
 - Tris(2-chloroethyl) phosphate (TCEP) in plastics
 - Bisphenol A in plastics
 - short-chain chlorinated paraffins (SCCPs) and medium-chain chlorinated paraffins (MCCPs)



Hazardous substances
management



Target audience:

Industry and the whole supply chain, test & certification bodies, recyclers

Substance Compliance

IEC 63000 - Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

- IEC 63000:2016+AMD1:2022 is designed to develop a standard helping industries verifying and declaring conformity to RoHS and similar legislations or programs



Hazardous substances
management

Life Cycle Assessment (LCA)

IEC 63366: Product category rules (PCR) for life cycle assessment of electrical and electronic products and systems.

- Specifies the process and requirements on how to conduct life cycle assessment in the context of environmental declarations.
- Provides guidance on how to develop PSR (product-specific rules) in corresponding technical committees. Applicable to any type of EE products
- **111/691/CDV has been successfully approved (June 2023)**
- Expected Publish Date: late 2024



Life cycle impact



Greenhouse gas
reduction

Target audience:

Designers and developers of EE products and their supply chain

Carbon Footprint / GHG

IEC 63372: Quantification and communication of Carbon Footprint and GHG emission reductions/avoided emissions from electric and electronic products and systems – Principles, methodologies, requirements and guidance

- Provide requirements and guideline on the following points about Carbon Footprint of Products (CFP), emission reductions and avoided emission
 - Framework to low carbon society toward decarbonization
 - Quantification methodology to be used in common in EE industry
 - Communication
- **111/757/CDV has been successfully approved (July 2024)**
- Expected Publish Date: early 2025



Greenhouse gas
reduction

(New) JahG22 – Digitalization and data exchange of Carbon Footprint of Products (CFP)”

- Collaborating with SC3D (CDD)

Target audience:

Designers and developers of EE products and their supply chain; certification bodies; solution providers



Eco-design – Circular Economy

ISO/IEC 62430: Environmentally conscious design (ECD) — Principles, requirements and guidance

- Edition 2.0 published by JWG ECD with ISO/TC 207 in October 2019
- Can be integrated into an ISO 14001 Environmental Management System

IEC TS 63428 - Guidance on material circularity considerations in environmentally conscious design

- Focus on optimal and efficient use of material within products to help enable the circular economy
- Material circularity principles
- Considerations for material selection, manufacturing, distribution and installation, product use (durability: reliability, maintenance, repairability, upgradability)
- Trade-offs in designing for circularity
- Ensures sustainability of natural resources
- **111/759/DTS has been successfully approved (June 2024)**

Target audience:

Designers and developers of EE products and their supply chain



Environmental
conservation



Circular Economy

- **Five areas** of standardization for implementing a Circular Economy
 - **Circular Economy terminology**
 - **Ecodesign for Circular Economy**
 - **Circularity of Resource Inflows**
 - **Assessment methods for circular content used in making EE Products**
 - **IEC 63333: General method for assessing the proportion of reused components in products (published 2023)**
 - **NP: General method for assessing the Proportion of recycled content**
 - **Durability and lifecycle extension assessment methods**
 - **Circularity of Resource Outflows**
 - **IEC 63395 CDV - Sustainable management of waste electrical and electronic equipment (e-waste) (Expected publication 2025)**
 - **IEC 62635 WD- Guidelines for end-of-life information provided by manufacturers and recyclers and for recyclability rate calculation of electrical and electronic equipment (Expected publication 2026)**



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IEC Guide 108-2019

Guidelines for ensuring the coherence of IEC publications – Horizontal functions, horizontal publications and their application

3.1.2

horizontal function

task assigned to a committee to prepare one or more **horizontal publications** related to a given scope

Note 1 to entry: The assignment of a **horizontal function** to a committee is a pre-condition for a committee to prepare **horizontal publications**.

3.1.3

horizontal publication

document dealing with a subject relevant to a number of committees and of crucial importance to ensure the coherence amongst publications

GUIDE



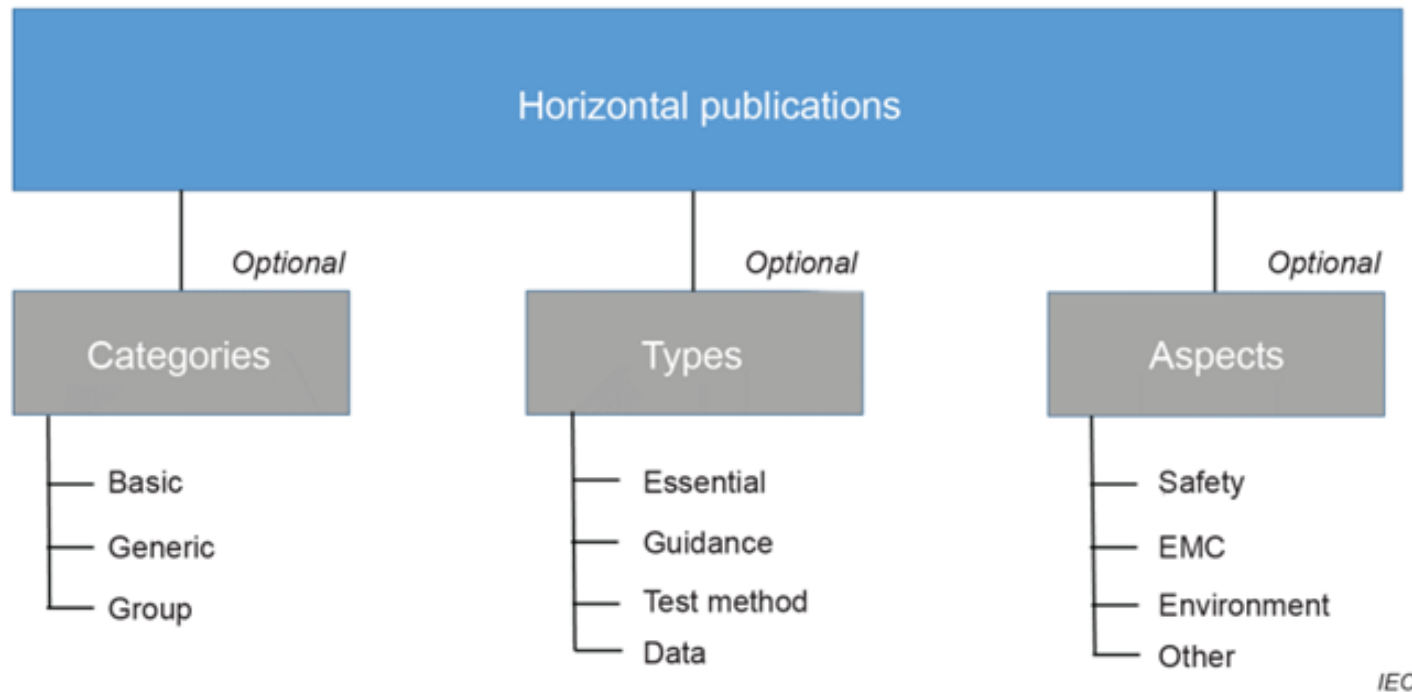


Figure 1 – Different categories, types and aspects of horizontal publications

SMB Approval for HF request from TC 111

SMB/8214A/RV (2024-08-06)

CONCLUSION

Decisions of the Standardization Management Board (SMB) taken by correspondence require a two-thirds majority of those voting, abstention is not considered as voting; clause 14.3, Rules of Procedure.

SMB has therefore approved the recommendations of ACEA below:

1. Assign HF "Assessments of proportion of recycled, reused and renewable content in electrical and electronic products and system" to TC 111
2. Assign HF "Common PCR for electrical and electronic products and systems" to TC 111
3. Assign HF "Materials and substances declaration applicable to products and systems" to TC 111
4. Assign HF "Quantification and communication of greenhouse gases (GHG) from electric and electronic products and systems" to TC 111

SMB is invited to note the comments which are referred to ACEA.

TC 111 Approval for Horizontal Publication

IEC 63366 ED1 CDV– Product category rules for life cycle assessment of electrical and electronic products and systems

- HF category: generic publication
- HF Type: essential publication

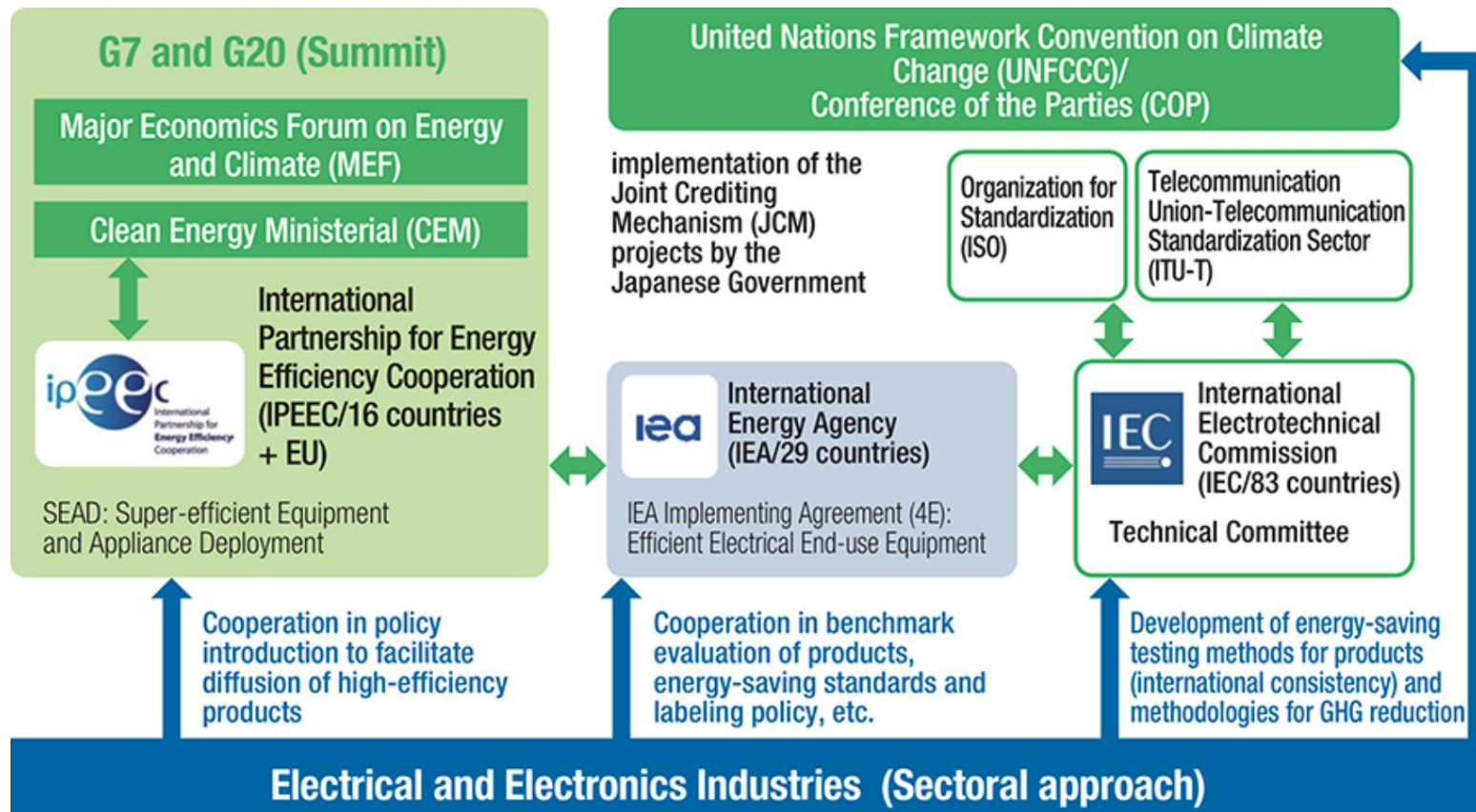
IEC 63372 ED1 Quantification and communication of Carbon Footprint of Product and GHG emission reductions/avoided emissions from electric and electronic products and systems

- **Principles, methodologies, requirements and guidance**
 - HF category: basic publication
 - HF Type: essential publication

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Initiatives for International Cooperation for Climate Change



Collaboration with various stakeholders

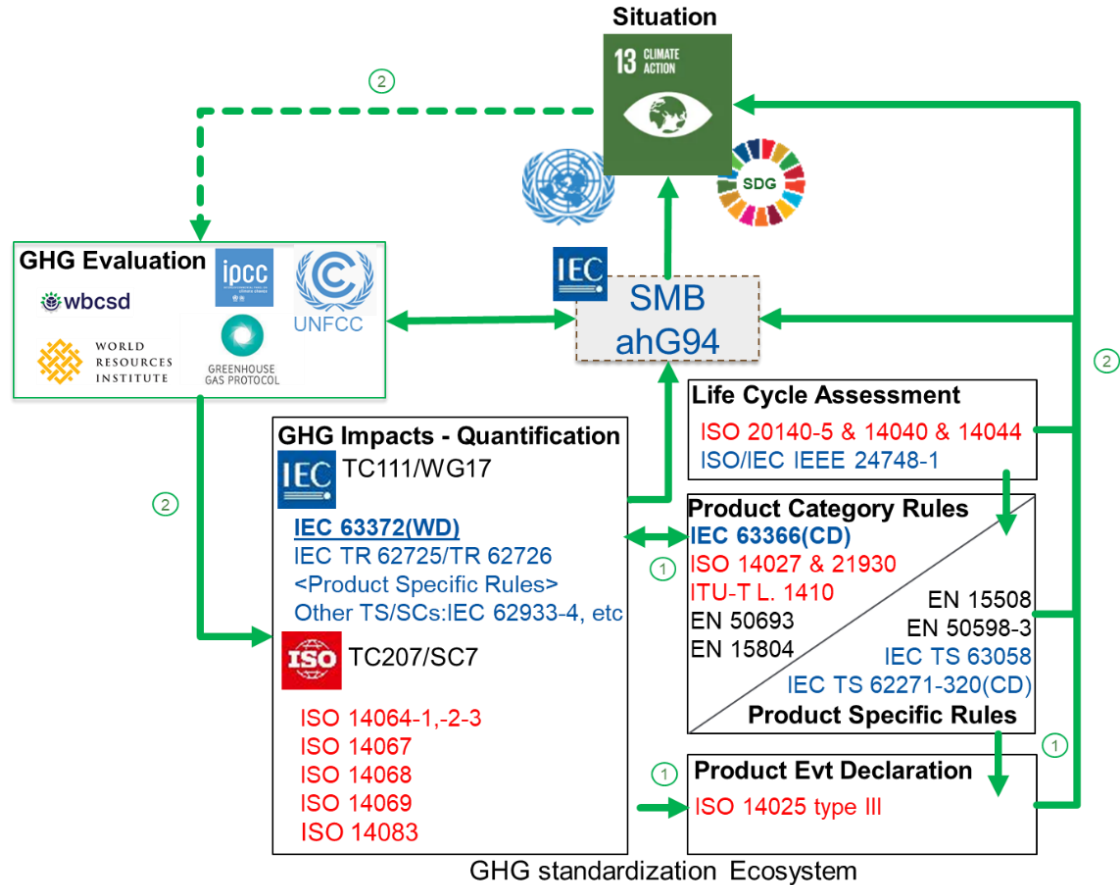


IPCC:

Day 1 of the COP26 summit. Vimal Mahendru, IEC Ambassador (Current IEC SMB Chair), shared his key messages.

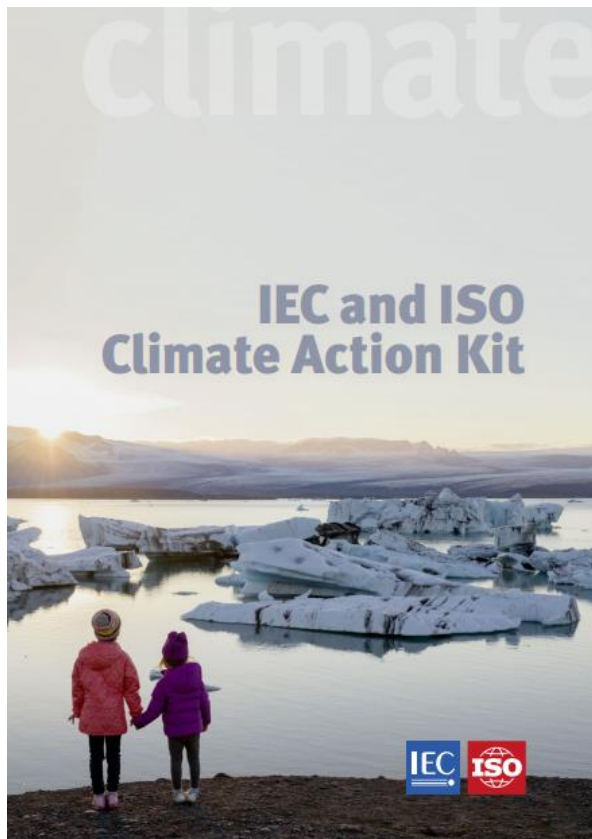
WBCSD:

TC 111 Liaison-ship has started since October 2023



GHG standardization Ecosystem

Climate Action Kit



A package to support policy makers in their commitment to reducing net greenhouse gas emissions. The package presents case studies on how standards can support public policies and influence climate change initiatives.

- ▶ Germany
- ▶ Italy
- ▶ **Japan**
- ▶ Jordan
- ▶ Korea



JAPAN

New IEC Standard addresses GHG emissions and UN SDG 13

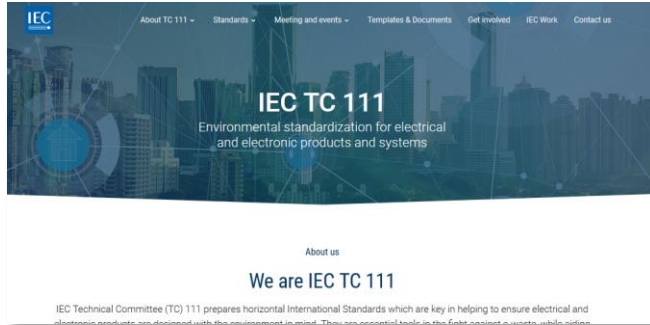
In a bid to reduce the rise in the global average temperature, countries have set targets to reduce their greenhouse gas (GHG) emissions as part of their commitment to the Paris Agreement. Japan has pledged to decrease its GHG emission levels by 46% by 2030.

The global home appliance industry was worth more than USD 420 billion in 2020, and is expected to reach USD 500 billion by 2023, according to [research](#) by Statista. Action is already being taken to help reduce GHG emissions caused by electric and electronic (EE) products, such as improving raw material acquisition, extending product lifetime, and limiting or replacing substances that result in additional GHG emissions.

As part of this effort, IEC is developing a new horizontal standard, IEC 63372, which will provide the principles, methodologies and guidance for the quantification and communication of GHG emissions, emission reductions and avoided emissions from EE products, services and systems. The draft IEC 63372 expands the scope of two existing technical reports, IEC TR 62725 and IEC TR 62726, to include avoided emissions, which are defined as the GHG amount not to being emitted thanks to the use of digital systems.



TC 111 Information



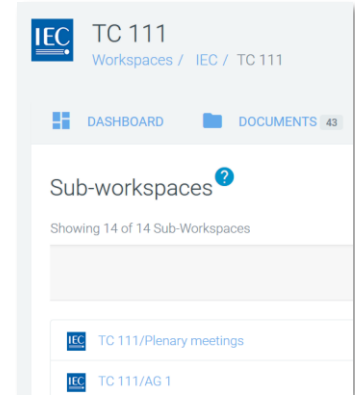
Public and promotional website
<https://dev-tc111.ieccloud.com/>



Private
collaborate.iec.ch



Presentation



Development **process**
www.iec.ch

Conclusion

- **IEC TC 111** will continue to prepare the necessary international standards and other deliverables in the environmental sustainability area, in close cooperation with product committees of IEC.
- **IEC TC 111** would like to contribute to the realization of Carbon Neutrality society through the development of environmental standards.



Thank you very much for this opportunity

TC
111

Environmental standardization
for electrical and electronic
products and systems



International
Electrotechnical
Commission