



IEC/TC OR SC: TC 111	SECRETARIAT: ITALY	DATE: [2018-10-25]
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Please ensure this form is annexed to the Report to the Standardization Management Board if it has been prepared during a meeting, or sent to the Central Office promptly after its contents have been agreed by the committee.

A. STATE TITLE AND SCOPE OF TC

The title of TC 111 is Environmental Standardization for Electrical and Electronic Products and Systems.

The scope of TC111 is:

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;
- To liaise with ACEA and ISO/TC 207;
- To monitor closely the corresponding regional standardization activities worldwide in order to become a focal point for discussions concerning standardization;
- EMC and EMF aspects are excluded from the scope.

B. MANAGEMENT STRUCTURE OF THE TC

TC 111 is made up of members from the national standards bodies of 37 countries, of which 25 are P-members and 12 are O-members. Members play a vital role in TC 111 standardization work.

TC 111 is chaired by Christophe Garnier (FR). He has chaired the TC 111 committee since 1 August 2018. The TC 111 Chair represents the TC. TC111 vice-chair is Miyuki Takenaka. In addition to supporting the chair, she has specific roles in the substances domain.

The TC 111 Secretary is Andrea Legnani (IT), who became Secretary in 2004 after the SMB approved the Italian NC proposal to set up a Technical Committee on Environmental Standardization for Electrical and Electronic Products and Systems. The Secretary is the Chief Executive Officer of TC 111 and is responsible for its day-to-day operations.

Standardization Teams

TC 111 contributes to improving the global environment by timely delivery of technical reports, specifications, and standards. TC 111 sets up standardization teams to address environmental issues over the next 5 years. The structure of TC 111 includes working groups (WGs), project teams (PTs), maintenance teams (MTs), ad-hoc groups (AHGs) and Advisory Groups (AGs) as needed. The committee also includes a validation team (VT) responsible for regular updates to the database portion of one of the standards and an advisory group (AG2) responsible for maintaining the SBP. The structure of TC 111 is reviewed every three years and updated as needed in response to new and emerging technologies, changes in regulations, and upon publication of

standards.

Workgroups and teams working on standardization deliverables related to environmental matters:

- WG3 Test methods of certain substances: to develop new and improved harmonized test methods for regulated substances;
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- MT 62474 Maintenance team of IEC62474 Material Declaration: to revise IEC 62474 standard;
- VT 62474 Material Declaration for Products of and for the Electrotechnical Industry Database: to maintain and improve material declaration tools by performing two maintenance cycles per year to the IEC62474 declarable substance list and data exchange format;
- PT01 Study on the feasibility of harmonizing environmental performance criteria for electrical and electronic products;
- JWG ECD - 62959 Environmentally Conscious Design (ECD) - Principles, requirements and guidance: to replace IEC 62430 (Environmentally Conscious Design for Electrical and Electronic Products) by joint work of IEC/TC 111 and ISO/TC 207;
- AG 1 Terminology Advisory Group: to harmonize environmental terminology between TC111 and other IEC and ISO groups on terminology;
- AG 2 SBP Advisory Group: periodic maintenance of TC111 Strategic Business Plan (SBP)
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Note: PT 63031 Definition of Low Halogen Materials used in Electrical and Electronic Products was disbanded in May 2018 following outcome of questionnaire 111/481/Q.

TC 111 liaises with ACEA, various ISO Technical Committees, other systems committees, product technical committees, and external organizations 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. The list of TC 111 liaisons is provided on the IEC TC 111 dashboard.

C. BUSINESS ENVIRONMENT

Environmental issues have become more and more important globally, especially regarding the impact on ecosystems, climate change, energy and natural resource depletion and impact on humans. With the advent of global legally binding agreements, such as the Paris agreement to limit global warming, industry has committed to meeting ambitious environmental targets. In the electrotechnical industry specifically, the exponential growth in the use of electronic devices by individuals and industry is another key factor in the need to address the environmental issues with these devices. The range of environmental issues has widened and now includes the whole life cycle of these products. Accordingly, purchasing of products based on environmental performance and preference of EEE products is a significant growing factor for government, institutional and consumer purchasing. In response to these trends, legislation as well as voluntary initiatives from business and other organizations have been developed globally.

In the electrical and electronic equipment sector, the focus is on control of chemical substances, circular economy (including product waste management), and environmentally conscious design of products and systems (including the reduction of adverse environmental impacts of a product throughout its entire life cycle, such as the efficient use of materials, energy, and other resources and controlling emissions).

Moreover, material efficiency aspects relating to the circular economy are becoming an increasingly important topic. The European Union's Vision 2020 strategy is developing standards for a sustainable economy, with standardization around material efficiency and circular economy at its core. This will be an area to continue monitoring and assessing what the global response

should be.

Reference to standards has been effective for assessing regulatory compliance and can also be equally effective in considering environmental aspects to applicable product life stages. Under the above circumstances, it is strongly desired to provide all stakeholders including product committees (TCs/SCs) industry, and regulators with basic and horizontal environmental standards for electrical and electronic products and systems. Attention should be given to maintaining the deliverables as credible and as representative to intended and actual use cases and to avoid unintended or intended circumvention.

D. MARKET DEMAND

Customers of the standards and other deliverables developed by TC 111 are:

- technical committees of IEC, including experts who develop standards and other deliverables;
- organizations that manufacture and use electrical and electronic products and systems;
- suppliers to the electrotechnical industry;
- test and certification bodies, dealing with product certification and compliance assessment and ecolabel operators;
- waste treatment operators and WEEE recyclers;
- governments and other equivalent organisations, dealing with conformity assessment and/or setting up product conformity;
- other organizations dealing with climate change, energy and natural resource depletion (for example, United Nations, NGOs and other non-profit organizations);

Avoiding inconsistency between standards on environmental specifications and guidelines is necessary for the market. This includes standards developed by product TCs/SCs. TC 111 provides TCs/SCs with basic and horizontal standards, including guidelines and technical reports in the environmental area.

E. TRENDS IN TECHNOLOGY AND IN THE MARKET

The progress of technologies, legal requirements and scientific data on environmental impacts have led to additional environmental requirements and opportunities. Examples include worldwide opportunities to establish harmonized international schemes to address

- energy saving effects made by energy-efficient products,
- life-cycle evaluation of GHG emission from products, and
- resource scarcity.

Trends in standardization include:

- A continuing shift of focus from a specific life cycle stage to the entire life cycle. This trend leads to supply-chain issues including information exchange, cooperation and management;
- Use of Life Cycle Assessment (LCA) methodologies and tools to evaluate the environmental impacts of products and processes across the entire life cycle;
- Environmental assessment scope is moving from a product to complete system solutions, such as addressing urbanization issues through infrastructures (e.g. Smart Cities).

The market will require further effective guidelines and standards since it is anticipated that laws and regulations in the environmental field will continue to diversify and expand.

The UN Conventions on Climate Change and Biodiversity and the abundance of regional

regulations on recyclability and restriction of hazardous substance content in products demonstrate the growing demand for international standards in the environmental field.

IEC TC 111 has worked proactively regarding the standardization needs on environmental topics by publishing standards on hazardous substances, ecodesign and other relevant environmental topics. IEC TC 111 has started new work in response to standardization needs in the areas of recyclability, climate change, and environmental performance assessment of products. It is anticipated that there could be future environmental standardization needs associated with resource efficiency and smart cities concepts. IEC TC 111 would respond to such new and prospective business needs by providing expertise in environmental aspects and impacts.

For economic growth, one must consider natural resource availability. This concept of “Resource Efficiency” is designed to maintain growth and promote improvement in quality of life globally in the face of resource depletion and cost increases. Governments are considering legislative frameworks to provide the economic conditions for an “environmentally-conscious economy”. These legislative frameworks include:

- Implementation of environmentally conscious design in products;
- Waste reduction and recycling requirements to boost a circular economy.

There are many emerging environmental performance programs (certifications, registries and logos) across different products and regions (e.g. EPEAT, ECOLOGO, Ecolabel, Eco Mark, Blue Angel). The creation of these programs is driven by a market and regulatory environment that is trying to interpret the complexity of environmental performance. Such simplification and standardization of environmental performance is needed by purchasers and other stakeholders that are not experts in the evaluation of environmental aspects. The environmental assessment programs have generally been regional and many of the environmental performance criteria for these programs are inconsistent. The lack of standardization results in duplication of work and confusion within the market. There is growing market demand and industry demand for global harmonization of these criteria.

The growing use of nanomaterials is a technology trend in electrical and electronic products and systems. The interest from several countries in tracking and regulating nanomaterials is expected to lead to new environmental regulatory requirements.

F. SYSTEMS APPROACH ASPECTS (REFERENCE - AC/33/2013)

TC 111 is not considered a system committee. A systems approach is not applicable.

G. CONFORMITY ASSESSMENT

TC 111 has published and/or is developing standardization documents that support conformity assessment of products and processes, such as:

- standards covering test methods for the determination of the levels of substances in materials/products (IEC 62321 series) in support of hazardous substances legislations world-wide
- guidance for evaluation of product with respect to substance-use restrictions and technical documentation requirements (IEC/TR 62476)
- standard for technical documentation for the assessment of products with respect to the restriction of hazardous substances (IEC 63000)
- standards related to exchange of information on materials in products (IEC 62474 database on material declaration)

Due to the structuring potential of standards on (upcoming) environmental legislations, TC 111 standards have the potential to positively influence the harmonisation of requirements specified in

legislation and with it conformity assessment worldwide.

H. 3-5 YEAR PROJECTED STRATEGIC OBJECTIVES, ACTIONS, TARGET DATES

STRATEGIC OBJECTIVES 3-5 YEARS	ACTIONS TO SUPPORT THE STRATEGIC OBJECTIVES	TARGET DATE(S) TO COMPLETE THE ACTIONS
New and improved harmonized test methods for regulated substances	<p>Continue to develop new and improved harmonized test methods for regulated substances. New substances include:</p> <ul style="list-style-type: none"> • Hexabromocyclododecane • PAH • Fluorine and iodine • TCEP • Phthalate substances <p>Collaboration with ISO TC61/SC5/WG11</p>	In progress – Target dates are 2018 to 2021 depending on substance
Up to date and comprehensive material declaration requirements for the electrotechnical industry	<ol style="list-style-type: none"> 1. Maintenance of IEC 62474 database by VT62474 of the declarable substance list, exemption lists and data exchange format 2. Facilitate deployment of IEC 62474 revision standard by updating the IEC 62474-1 guidance document. 	Two updates per year Expected 2020
Dual-logo standard (IEC/ISO) for material declaration to cover broader range of products	Investigate the possibility to engage with ISO for possible collaboration on dual logo standard	End of 2018
Develop standards and guidance for demonstration of due diligence for substance restriction conformity	Evaluate the need for an update of IEC/TR 62476 on Guidance for Restricted Substance Controls	By 2020 (stability date of IEC TR 62476)
Joint ISO/IEC standard on Environmentally Conscious Design	Revision/Maintenance of IEC 62430 (Environmentally Conscious Design for Electrical and Electronic Products) per approved NWIP scope as ISO/IEC 62430 Ed.2	In progress – Expected 2019
Develop minimum requirements for the collection, logistics and treatment of WEEE in order to minimize environmental impacts.	TC 111 to consider CENELEC offer of standards (possible NWIP to consider EN 50625 series of standards and other regional deliverables)	TC 111 consideration - Oct 2018
Standardized methodologies and rules for carbon footprint calculation of EEE	Evaluate the need for an update of IEC TR 62725/62726 on analysis and guidance of quantification methodologies of greenhouse gas emissions	By 2020 (stability date of IEC TR 62725/62726)

	<p>(consider collaboration with actions for LCA PCR standardization)</p> <p>This activity may involve multiple stages of standardization work:</p> <ol style="list-style-type: none"> 1. Collect information from different-sector carbon footprint studies and pilot projects. The initial study phase should consider carbon footprint methodology, rules, and potential secondary data that is specific to EEE. 2. Implement next steps based on the review of the information collected. 3. After sufficient data is obtained, develop TS or IS for carbon footprint calculation methodology. 	
<p>Environmental performance criteria that are consistent and compatible. (Develop a standardization document that specifies environmental performance criteria which are common across product sectors and may be harmonized for consistency. A set of rules for developing sector specific criteria that supplement the common criteria could be provided.)</p>	<p>Two step process:</p> <ol style="list-style-type: none"> 1. Conduct study to assess feasibility of harmonized environmental performance criteria (publish the study results as TR) 2. If study concludes feasibility of developing harmonized environmental performance criteria, proceed to develop TS or IS 	<p>Step 1 (conduct study) is in progress. Target date for study report is end 2018/early 2019</p>
<p>Product Category Rules (PCRs) for full LCA of multiple environmental impacts to enable transparency for EPD development and improve comparability between different EPDs based on the same PCR.</p>	<ol style="list-style-type: none"> 1. Follow development of CENELEC PCR work and EU PEF Pilot. (CENELEC PCR standard is forecasted for publication in 2019 and is expected to be offered for use in an IEC project (regional annexes are recommended)) 2. Launch a study group (AHG) to evaluate results of above activities and work in progress in different TCs and other organizations and recommend course of action. (consider collaboration with actions for standardized methodologies and rules for carbon footprint calculation of EEE) 	<p>EU PEF Pilot will be completed in Q2 2018 CENELEC PCR standard is forecasted for publication in 2019.</p> <p>TC111 to consider launching a study on PCR at October 2018 Plenary meeting</p>

<p>Standardization documents to assess and calculate Materials Efficiency for Circular Economy:</p> <ul style="list-style-type: none"> • Extending product lifetime (durability, upgradability) • Ability to access/remove components, consumables, assemblies to facilitate repair, remanufacturing and reuse • Re-use of components or recycle materials from products at EoL • Use of reused components and/or recycled materials in products 	<p>Conduct study of possible circular economy standardization within TC 111 (study by AHG13)</p> <ul style="list-style-type: none"> • Includes consideration of CEN/CENELEC and other work on circular economy worldwide 	<p>AHG13 study report to be presented at Oct 2018 Plenary meeting</p>
<p>Harmonization of environmental terminology in the scope of TC111</p>	<ol style="list-style-type: none"> 1. Collaboration of TC111/AG1 with TC111 work groups and teams 2. Collaboration of TC111/AG1 with IEC TC1 and ISO TC207 Terminology TF 	<p>Ongoing</p>
<p>Note: The progress on the actions should be reported in the RSMB.</p>		