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TECHNICAL REPORT

Analysis of quantification methodologies for greenhouse gas emissions for electrical and electronic products and systems

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colour inside

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ANALYSIS OF QUANTIFICATION METHODOLOGIES FOR GREENHOUSE GAS EMISSIONS FOR ELECTRICAL AND ELECTRONIC PRODUCTS AND SYSTEMS

FOREWORD

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IEC/TR 62725, which is a technical report, has been prepared by IEC technical committee 111: Environmental standardization for electrical and electronic products and systems.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
111/266/DTR	111/291/RVC

Full information on the voting for the approval of this technical report can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

Electrical and electronic products and systems (hereinafter referred to as “EE products”) are widely used in our society, hence raising awareness of their environmental impacts. Consequently customers in the market and other stakeholders are requiring or requesting that the electronics sector take actions to address the quantification and reduction of environmental impacts through environmental conscious design during the product development phase.

Among those environmental impacts, climate change is an important issue. A number of initiatives at local, national, regional, and international levels are being developed and implemented, aiming to curb the concentration of greenhouse gas (GHG) emissions which is understood to be a major contributing factor.

A basic and generic methodology to quantify Carbon Footprint of Products (hereinafter referenced as “CFP”) is under development in ISO 14067. It specifies principles and requirements for studies to quantify CFP, based on the methodology of life cycle assessment (LCA) specified in ISO 14040 and ISO 14044. In addition, major standardisation activities, and private, government and industry driven initiatives have started work on establishing methodologies for CFP, quantifying GHG emissions and related issues.

This plurality of initiatives highlights the necessity of developing guidance, which facilitates the understanding of existing methodologies and suggests workable and implementable options that address the specific characteristics of EE products, for example;

- Supply chains can be dynamic, long, complicated and global. Some product categories are associated with significant impacts from raw material acquisition, production stage, or end-of-life. Reasonable and consistent methodologies are needed to be shared with all the relevant actors along the global supply chain.
- Many products have relatively long lives, extending over many years, with associated energy consumption, which underlines the significance of the use stage. For such product categories, specific attention is paid to energy efficiency. It should be noted that the assumptions behind use scenarios are critical to achieve consistency.
- In addition to associated CO_2 emissions, some products use substances that have the potential for additional GHG emissions (e.g. SF_6 used in switchgear).

These characteristics support the market relevance for providing generic guidance in the form of this Technical Report (hereinafter referred to as TR) for the quantification, documentation and communication of GHG along the life cycle of EE products.

The contents and features of this TR are as follows:

- A study and review of relevant standards, regional initiatives and practices are provided to clarify and compare the differences and similarities in multiple existing methodologies for CFP studies.
- This Technical Report, based on relevant International Standards, Draft International Standards, especially ISO/DIS 14067, and other standards, gives a comprehensive additional guidance which enable readers to carry out CFP study for EE products.

It should be also emphasized that CFP addresses the single impact category of climate change and does not assess other potential social, economic or environmental impacts. Therefore CFPs do not provide an indicator of the overall environmental impact of products.

The information in this TR is entirely informative in nature and does not establish nor is it intended to imply any normative requirements.

NOTE 1 This TR may be used as quantification guidance for GHG emissions as a part of the environmental impact categories in a multi-criteria environmental assessment.

NOTE 2 This TR is not directly intended for electrical and electronic equipment (EEE) as defined by EU regulation therefore this TR uses the term "electrical & electronic products (EE products)."