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ACEE PUBLICATION

IEC Advisory Committee on energy efficiency (ACEE)

Case study: low-voltage electrical installations

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

Case study: low-voltage electrical installations

This case study is provided to illustrate a practical example (in practice) on how IEC Guide 118 concepts can be applied/found in low-voltage electrical installations and in product standards and, more generally, on how International Standards can support the energy efficiency market and national energy efficiency policies.

1 Energy efficiency of low-voltage electrical installations

Buildings represent 40 % of the global energy demand. A significant part of this energy is supplied by electricity. Therefore, the overall efficiency of the low-voltage electrical installation is key.

IEC 60364-8-1 is an International Standard based on the concepts of IEC Guide 118, which gives guidance and methods in order to:

– improve by design the efficiency of the installation;
– control the usage of equipment;
– benefit from the tariff of the supplied electricity;
– measure the consumption of relevant loads;
– maintain the energy performance of the installation;
– assess the efficiency of the installation.

IEC 60364-8-1 is also a group energy efficiency publication (GEEP) according to IEC Guide 119. Therefore, it can be used by other IEC Technical Committees in order to design the functions to be implemented in their product to contribute to the implementation of energy efficiency measures in low-voltage electrical installations.

2 Standardization and energy efficiency: IEC approach

IEC set up an Advisory Committee on Energy Efficiency (ACEE) to coordinate its activities in this domain.

ACEE has developed two Guides (IEC Guide 118 and IEC Guide 119) with the aim of defining the concept of Energy Efficiency Aspects (EEAs) to provide guidance to IEC Technical Committees (TCs) on how to approach energy efficiency standardization, promoting a systems approach and defining procedures for the preparation of such standards.

IEC Guide 118 proposes a general approach to energy efficiency standardization by defining the concept of EEAs as all those elements/services that a standard can provide to support a generic "energy efficiency improvement" process. Five categories of EEA that should be considered when developing a standard have been proposed:

– energy efficiency definition;
– energy efficiency design;
– energy efficiency measurement;
– energy efficiency assessment;
– energy efficiency improvement;
– energy efficiency enabling.