



IEC Advisory Committee on Energy Efficiency

Philippe VOLLET
IEC ACEE Chairman

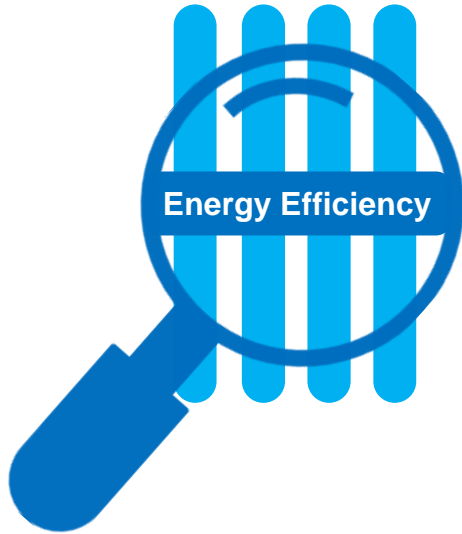
SEAD IEA Workshop
November 12, 2020
Zoom webinar



International
Electrotechnical
Commission

Why ACEE ?

Energy efficiency poses a **challenge** not only to policy makers but also to standardization organizations:



- Energy efficiency has a **transversal and interdisciplinary** nature.
- Therefore, working in the field of EE requires a **shift**:
 - from “traditional standardization”
which has historically focused on products and is generally “vertically” organized
 - to a “**systems integration approach**” and “**application-oriented global solutions**” perspective.
- This is not only because of the horizontal nature of energy efficiency, but also because very often a **holistic approach provides the highest energy efficiency potential**.

Why ACEE ?

Despite the many identified benefits of energy efficiency, **many barriers to its wide adoption remain.** These include:

- ✓ Lack of awareness of savings potential
- ✓ Focus on devices instead of systems = lower ROI
- ✓ Focus on Low initial cost vs. life-cycle gains
- ✓ Lack of incentive: user ≠ payer
- ✓ ...



Standardization can play an important role in overcoming some of these barriers.

Why ACEE ?

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



- ACEE deals with energy efficiency matters **which are not specific to one single technical committee** of the IEC.
- ACEE is responsible for the assignment of **horizontal energy efficiency** aspects and requirements.
- ACEE provides **guidance for implementation** in a general perspective and for specific sectors. It encourages a **systems perspective** for the development of standards for energy efficiency and provides support for system considerations

ACEE Activity ?

ACEE has developed **two Guides** to provide guidance to IEC Technical Committees (TCs)



- **IEC Guide 118**: Inclusion of energy efficiency aspects in electrotechnical publications.

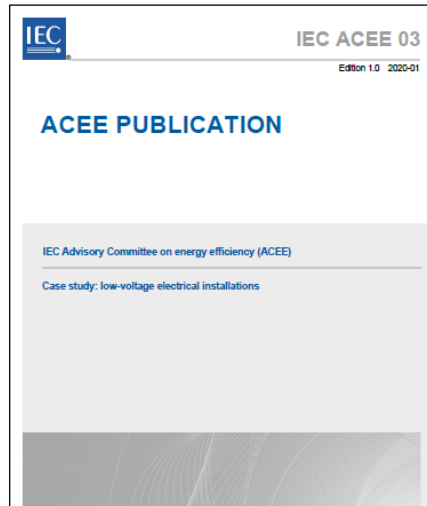
This Guide gives guidance on how to consider energy efficiency aspects when preparing IEC publications.

- **IEC Guide 119**: Preparation of energy efficiency publications and the use of basic energy efficiency publications and group energy efficiency publications.

This Guide defines procedures for the preparation of energy efficiency (EE) publications and describes the relationship between technical committees (TCs) with group EE functions.

ACEE Activity ?

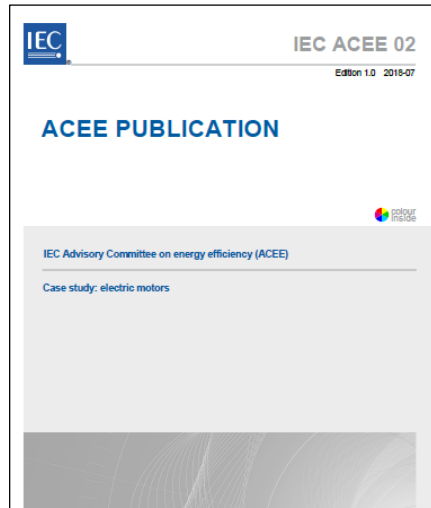
ACEE has published **two Case Studies** to illustrate practical examples on how IEC Guide 118 can be applied



- **Case study 1: 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.
 - This use case is based on the **Group Energy Efficiency Publication IEC 60364-8-1: Low-voltage electrical installations Part 8-1: Functional aspects – Energy efficiency**

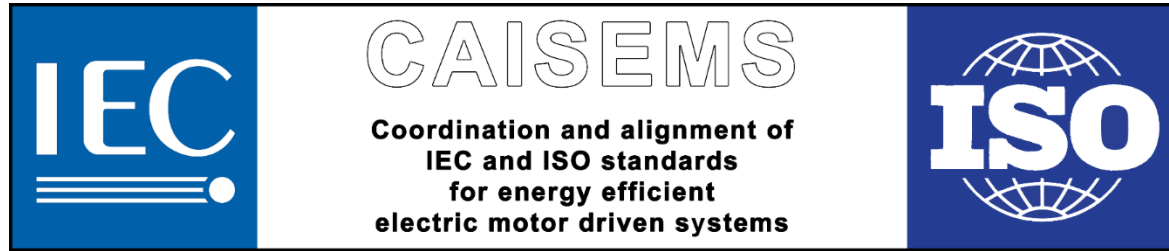
ACEE Activity ?

ACEE has published **two Case Studies** to illustrate practical examples on how IEC Guide 118 can be applied



- Case study 2: **electric motors**
 - The biggest user of motors is **industry**.
 - **Industry consumes 40 % of global electricity**, of which the large majority drives electric motors in machines, pumps, fans, compressors, conveyer belts, and the like (source: IEA).
 - If using the best available technology will typically save about 4 % to 5 % of all electric motor energy consumption, **it is through the optimization of the complete system** (motor, driven equipment, converter, control equipment and strategy) that much larger savings can be achieved (**20 % to 30 % of all electric motor systems energy consumption**).

ACEE CAISEMS Initiative



Coordinator: IEC Advisory Committee on Energy Efficiency ACEE - Task Group 6

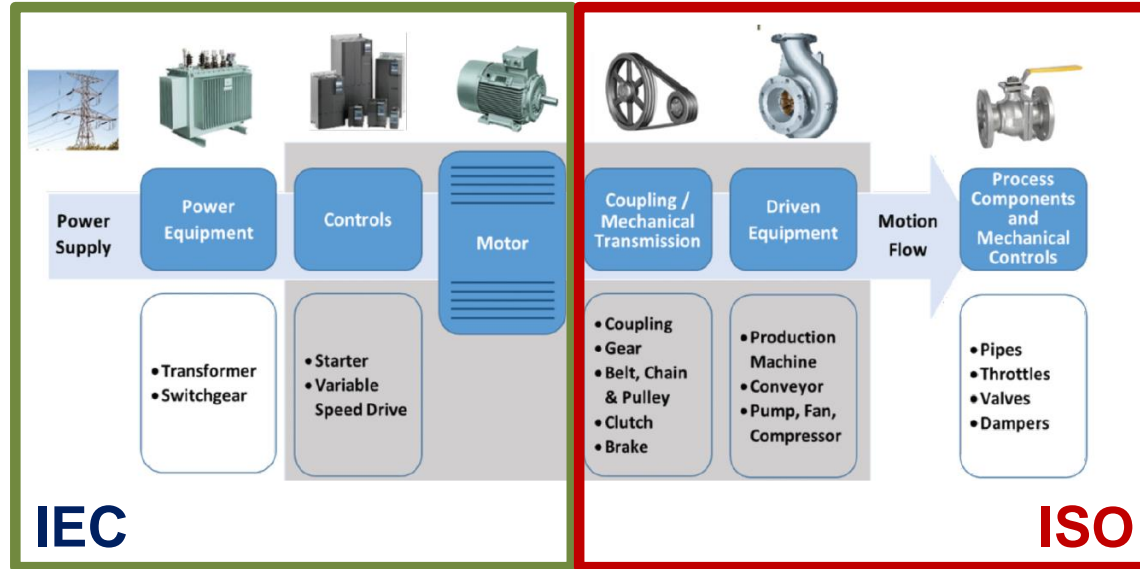
Coordination and Alignment of IEC & ISO Standards for Energy
Efficient Electric Motor Driven Systems
(CAISEMS)

ACEE TG6 Convenor: Maarten van Werkhoven

ACEE CAISEMS Initiative

System standards

EMDS = Electric Motor Driven Systems



International Electrotechnical Commission

International Organization for Standardization

ACEE CAISEMS Initiative

Standardization Bodies (IEC & ISO)

| Motor control | | Motor | Mechanical equipment | | Driven equipment | | | |
|--------------------------------|---------------------------|-----------------------|----------------------|-----------|------------------|------------|--------------------------|----------------------|
| IEC TC 121 | IEC TC 22 SC 22G | IEC TC 2 | ISO TC 41 | ISO TC 60 | ISO TC115 | ISO TC 117 | ISO TC 86 | ISO TC 118 |
| Switchgear & controlgear | Adjustable speed drive | Rotating machinery | Pulleys & belts | Gears | Pumps | Fans | Cooling-Com- pressors | Air-Com- pressors |
| 1927 | 1934 | 1911 | 1947 | 1947 | 1964 | 1964 | 1957 | 1965 |

ACEE CAISEMS Initiative

System Standards: the CAISEMS project

IEC ACEE (Advisory Committee on Energy Efficiency), Task Group 6

Coordination and alignment of standards for energy efficient electric motor driven systems

Goals - generic

- provide a platform to initiate and organize coordination and alignment activities
- initiate concrete cooperation between IEC and ISO TCs on energy efficient electric motor driven systems



Coordinator: IEC Advisory Committee on Energy Efficiency ACEE - Task Group 6

CAISEMS: **60 members** (active & passive)

1st meeting: 20 September 2019 in Tokyo, Japan

4th meeting: **20 November 2020, teleconference**

Please visit our IEC ACEE WebSite @ www.iec.ch/acee

International Electrotechnical Commission

International Standards and Conformity Assessment for all electrical, electronic and related technologies

You & the IEC | About the IEC | News & views | Standards development | Conformity assessment | Members & experts | Developing countries | IEC Academy | Webstore

→ About the IEC > Who we are > Management Structure > **ACEE**

ACEE Advisory Committee on Energy Efficiency

Scope | **Structure** | Documents | Guides/Projects | Meetings / Workshops

Scope

ACEE deals with energy efficiency matters which are not specific to one single technical committee of the IEC. It coordinates activities related to energy efficiency. ACEE is responsible for the assignment of horizontal energy efficiency aspects and requirements. ACEE provides guidance for implementation in a general perspective and for specific sectors. It encourages a systems perspective for the development of standards for energy efficiency and provides support for system considerations.

Guides:

ACEE is responsible for the following guides:

- IEC Guide 118: Inclusion of energy efficiency aspects in electrotechnical publications.
 - This Guide is intended for technical committees and gives guidance on how to consider energy efficiency aspects when preparing IEC publications.
- IEC Guide 119: Preparation of energy efficiency publications and the use of basic energy efficiency publications and group energy efficiency publications.
 - This Guide defines procedures for the preparation of energy efficiency (EE) publications and

Mr Philippe Vollet (fr-ph-vo) [Log out] [En] [Fr]

Further information

| | |
|-----------------------------|----------------------|
| Secretariat | IEC Central Office |
| Introduction to ACEE work | 📄 1223 kb |
| Case study: electric motors | 📄 1271 kB |
| Energy Efficiency | 🌐 |
| Chair | 👤 Mr Philippe Vollet |
| Secretary | 👤 Mr Damien Lee |



Philippe VOLLET
IEC ACEE Chairman

SEAD IEA Workshop
November 12, 2020
Zoom webinar



**International
Electrotechnical
Commission**