

Electric Motor Systems Annex Overview 2019-2024



The 4E Electric Motor Systems Annex (EMSA) promotes the opportunities for energy efficiency in motor systems by disseminating best practice information worldwide. It supports the development of internationally aligned technical standards and the implementation of national policies to improve the energy performance of new and existing motor systems. This briefing gives an overview on EMSA's work.

Electric motor systems in industrial plants, infrastructure applications and buildings that drive pumps, fans, compressors and other equipment, are responsible for 53% of the world's total electricity consumption. New and existing technologies offer the potential to reduce the energy demand of motor systems across the global economy by 20% to 30%. The know-how to realise energy savings exists but is not widely applied.

EMSA's work focuses on the following areas:

- **International Standards.** EMSA contributes to the development of internationally aligned and globally applicable technical standards for motor systems:
 - EMSA stays up-to-date with the activities of, and contributes independent research results for, relevant International Electrotechnical Commission (IEC) standards committees, in which some EMSA members participate directly.
 - EMSA runs an international round robin testing programme for converters in cooperation with IEC.
 - EMSA researches advanced technology motors.
- **Digitalisation and motor systems.** EMSA explores the potential for energy savings through ICT technologies in motor systems, identifies barriers and possible solutions.
- **Motor Systems Tool.** EMSA has developed this independent user-friendly software tool to assess the efficiency of a complete motor system.

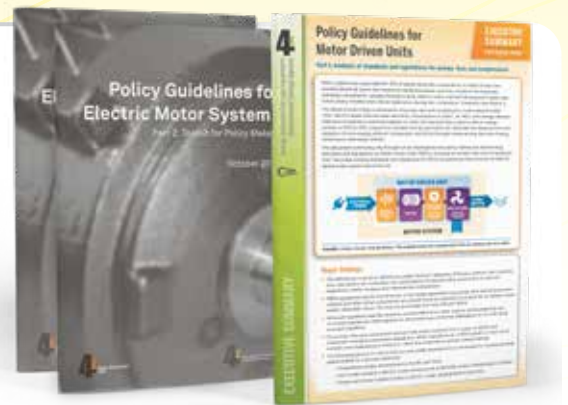
EMSA provides a platform for an in-depth technical and policy exchange between members and is a vehicle for collaborative projects. Most of EMSA's research results are made available through its publications.

EMSA Publications

EMSA publishes a range of guides covering best practice policies, lessons learnt and opportunities for the international alignment of technical standards and regulations. These are complemented by practical guides for particular energy saving aspects of motor systems.

The following guides have been published:

- *Report on the EMSA survey on digitalisation in electric motor driven systems (2021)*
- *Energy Audit Guide for Motor Driven Systems (English: 2018, Turkish: 2020)*
- *Report on Test Standards for Advanced Motor Technologies (2020)*
- *Round Robin of Converter Losses – Report of Results of Phase 1 (2019)*
- *Policy Guidelines for Motor Driven Units – Part 1 (2016) and Part 2 (2018)*
- *Energy efficiency roadmap for electric motors and motor systems (2015)*
- *Policy Guidelines for Electric Motor Systems – Part 2: Toolkit for Policy Makers (2014)*
- *Motor Policy Guide – Part 1: Assessment of Existing Policies (2011)*
- *Motor MEPS Guide (2009)*



EMSA Capacity Building

The EMSA Motor Systems Tool calculates the energy efficiency of a motor system, taking into account the motor and controls, transmission and load characteristics of the application. It is intended for engineers and others aiming to optimise existing and new machine systems.

To access: www.iea-4e.org/emsa/our-work/emsa-tools



EMSA Network

EMSA's Global Motor Systems Network comprises around 5000 contacts in 85 countries. Members include policy makers, representatives of governmental bodies, international organisations, standards developers, researchers, motor systems efficiency experts, utilities, industrial end-users and manufacturers.

Network members receive the EMSA Newsletter in English, Chinese, Japanese or Spanish, with updates on standards, regulations, events, publications and EMSA's activities.

To subscribe: www.iea-4e.org/emsa/emsa-newsletter

Who's Involved?

The following 8 countries and one region are members of EMSA: Australia, Austria, Denmark, European Commission, Netherlands, New Zealand, Sweden, Switzerland, and the United States of America*.

**Member listing March 2022*

Where can I access the EMSA documents?

All publicly available EMSA documents can be found on the EMSA website at www.iea-4e.org/emsa. For further information contact the EMSA Operating Agent Maarten van Werkhoven (mvanwerkhoven@tpabv.nl) or the EMSA Vice-Operating Agent Rita Werle (rita.werle@impact-energy.ch).