



How can digitalisation in industrial electric motor driven systems contribute to saving more energy?

We invite you for a discussion on “digitalisation in industrial electric motor driven systems” organised by the IEA 4E EMSA (Electric Motor Systems Annex).

Following the presentation of the latest results of the EMSA research on digitalisation, we would like to discuss with you on market and technology trends as well as energy effects, best practices and policies.

EMSA is part of the IEA Technology Collaboration Programme 4E:

www.iea-4e.org/emsa.

Date 19 September 2023

Time 13.00 – 15.00 CEST

Format ZOOM

Registration:

<https://us02web.zoom.us/meeting/register/tZwrd-GuqT0rHN1Ou36qldBfEYFcQLEL9vru>

Part 1: Technologies, market trends (13.00-14.10)

13.00	Welcome	Maarten van Werkhoven
	Introduction: EMSA research on technologies	Konstantin Kulterer
13.10	Digitalisation and electric motor systems	Ronald Piers, European Commission
13.20	Overview of use cases	EMSA
13.25	Example of digitalisation	Samotics, Netherlands
13.35	Discussion: technological trends, business models	Maarten van Werkhoven

Subjects for discussion:

- 1) Market situation of digitalisation of motor systems; what trends can be observed?
- 2) Main drivers for digitalisation? Can energy efficiency become a driver for digitalisation?
- 3) What is the business model for digital energy efficiency solutions? What are the value propositions?

Part 2: How to bring to market (14.10 - 15.00)

14.10	Results of previous and current EMSA research on drivers, barriers and policies	Konstantin Kulterer, Roger Nordman, Rita Werle
14.20	Discussion: market framework, policy interventions	Maarten van Werkhoven
14.55	Conclusions	Maarten van Werkhoven
15.00	End	

Subjects for discussion:

- 1) What are major hurdles, e.g. sharing data between end-user and supplier, lack of skills, end user company size, real value proposition, others?
- 2) Is there a need for improved standardisation in certain aspects of digitalisation?
- 3) Is there a need for market change and if so, in which way? (e.g. capacity building, alignment to other activities like energy monitoring systems)
- 4) What policy instruments were introduced and proved useful for driving digitalisation in motor systems?
- 5) How could policies/policy makers help to accelerate digitalisation of motor systems?

Interested in EMSA resources on digitalisation of motor systems?
Check out our publications:



4E Energy Efficient End-use Equipment International Energy Agency

EMSA4

Digital technologies for motor systems

Statement of Acronyms Objectives

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 best standards and policies to improve the energy performance of new and existing motor systems with the aim of achieving 20% to 30% energy savings.

This Policy Brief gives an overview of the content of the EMSA report on Classification of digitalisation technologies for electric motor driven systems. The report identifies 10 digital technologies with the potential to influence energy consumption in electric motor driven systems and contains definitions, descriptions and examples in this area.

Observations for Policy Makers

- All major digital technologies, which have been identified and analysed, are already used in the field of electric motor systems.
- Digital technologies are mainly used for reasons other than energy efficiency such as higher production efficiency, a more flexible system, better control and predictive maintenance.
- All identified and reported digital technologies can be used to increase the energy efficiency in electric motor systems and save energy.
- As it is the interrelation of different digital technologies that often leads to energy savings, it is difficult to attribute concrete savings to specific single technologies.
- While digital technologies can help identify opportunities, energy savings will only be realised once this information is acted upon.
- Examples of specific applications with concrete evidence of energy savings are rare.
- Limited data is available on the energy consumption of digital communication and data analysis applications used for energy optimisation since this is often not possible to be distinguished from energy used for other processes and quality-related analysis.

Local implementation The EMSA report Classification of digitalisation technologies for electric motor driven systems is available for download here. Further information is available on www.4e-4e.org/emsa and by contacting the main author of the report: tomartin.kuller@energyagency.eu.

Published August 2022

Technology Collaboration Programme

Classification of digitalisation technologies for electric motor driven systems
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4E Energy Efficient End-use Equipment International Energy Agency

EMSA3

Digitalisation in electric motor driven systems

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This Policy Brief summarises the key findings of an EMSA survey on digitalisation in electric motor driven systems conducted in 2020 with over 100 respondents worldwide. The report sheds light on the most digital technologies used in industrial facilities, the energy saving potential attributed to digital technologies, the perceived drivers and barriers as well as the most useful mechanisms to overcome these barriers.

Observations for Policy Makers

- Respondents rate the average increase in energy efficiency of electric motor systems from the use of digital solutions to be around 30%.
- Smart sensors, smart control and continuous monitoring are the digital technologies most used by industrial users in conjunction with motor driven systems. These three digital technologies are expected to have the greatest impact on potential future energy savings.
- Superior production efficiency, more flexibility and higher system availability are considered to be the main advantages.
- An increased risk of failure and higher implementation costs were mentioned as the main disadvantages.
- The lack of qualified staff and high investment costs are perceived as main barriers to greater uptake of digital technologies.
- Good technical solutions for cybersecurity and the availability of qualified staff are the most significant enablers.
- Around three quarter of respondents consider the development of training programmes, the standardisation of protocols, and subsidies for research as important policy instruments to overcome the barriers mentioned above.

Local implementation The EMSA Report is available for download at 4e-4e.org/emsa. For further information contact the author of the report: TomMartin.Kuller@energyagency.eu.

Published November 2021

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Report on the EMSA Survey on digitalisation in electric motor driven systems
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