

Digital Production Technologies in Electric Motor Driven Systems – project brief

February 2022

Introduction

Digitalisation brings ‘smart’ applications to all kinds of industrial energy systems, of which electric motor driven systems take the largest part of the industrial electricity use. Electric motor driven systems (EMDS) are responsible for some 53% of global electricity consumption (IEA 2017), and approximately 70% of the industrial electricity use.

Goal

The IEA Technology Collaboration Programme 4E EMSA (Electric Motor Systems Annex) works on the assessment of specific developments in the field of industrial digitalisation. The target is to identify the relevant technology fields (areas), their potential impact on energy use and efficiency and the potential need for policy measures. EMSA will categorise the key technologies in this field, describe the potential effects on energy use and efficiency, other non-energy benefits (NEBs), and will report on some key examples for application in motor driven systems.

Organisation

Work under this Task is a collaborative effort by Austria, the Netherlands, Sweden and Switzerland.

Topics

The following key work areas were defined:

- Analysis, definition and categorisation of digital production technologies in the field of motor driven systems (report to be released in 2022)
- Identification of stakeholders and collection of national best policy practices in the areas mentioned
- Assessment of the effects of digital technologies on energy consumption
- Survey on enablers, advantages, barriers, and disadvantages of digital production technologies, suggestions for policy intervention and examples of applications of digital technologies in motor driven systems (report published in 2021: [download](#))
- Research on human skills and routes for capacity building needed to enable digitalisation of motor systems in industry
- Identification of the development, necessity and possibility for policy interventions
- Preparation of a ‘Quick-starter’ guide as resource for industrial users for the digitalisation of their motor systems
- Research and description of use cases of Industry 4.0 technologies in the field of energy-efficient motor driven systems from each participating country.

Timeline

This ongoing work will be concluded by February 2024.



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