EMSA Electric Motor Systems Annex

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www.motorsystem
Challenges for EMSA

Some figures:
- All motor systems consume annually about 10’700 TWh (over 50% of the global electric energy consumption in 2015)
- Savings potential is in the range of 1’400 TWh/a to 3’100 TWh/a by 2040 (13% to 29%)

→ Motors and motor systems are very energy-relevant

Overaged motor installation (issue of replacement):

56% older on average twice older

Motors and motor systems are very energy-relevant
Tasks

1. **International Standards**
   - Motors, Converters, combinations
   - Motor Driven Units

2. **Testing**
   - Round Robin Converter losses
   - Advanced technology motors

3. **New Industrial Developments and Digitalization in Motor Systems**

4. **Motor Systems Tool Maintenance & Dissemination**

5. **EMSA Outreach**

→ Work on different levels for maximum impact
EMSA Activities: International Standards / Testing

• Testing of converter as part of the motor system in cooperation with IEC
  - 7 labs from 7 different countries (CA, CN, DK, DE, JP, CH, US)
  - Foreseen lab from China: China National Center for Quality Supervision and Test of Electrical Control and Distribution Equipment

• International Standards
  - The International Electrotechnical Commission (IEC) is developing international standards for testing and efficiency classification of:
    - Electric motors / motors with variable frequency drives (VFD)
    - VFDs / VFDs and motor combinations
  - IEC ACEE TG6: IEC and ISO interact on alignment of international standards on motor driven units (pumps, fans, compressors) → Workshop in Tokyo Sep ‘19

→ Basis for policies / regulations like Minimum Energy Performance Standards (MEPS)
EMSA Activities: Motor Systems Tool / Future development

• EMSA Motor Systems Tool
  – Calculates the efficiency of a motor system
  – Manufacturer independent
  – Chinese translation possible
  ➔ Basis to identify efficient solutions

• Analyse the future of motor systems:
  – New Industrial Developments (Industry 4.0)
  – Digitalization in Motor Systems (Benefits e.g. in CO₂-reduction, energy efficiency, etc)
  ➔ Basis to identify future potential
EMSA Activities: EMSA Newsletter

- EMSA Newsletter
  - EN, JP, ES, CN
  - 5500+ contacts in 85 countries
  - Chinese translation by CNIS

→ Basis for international knowledge dissemination
Contact

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