

ISO 50001 Energy Management and Electric Motor Driven Systems

*Motor Summit 2012
Zurich, Switzerland*

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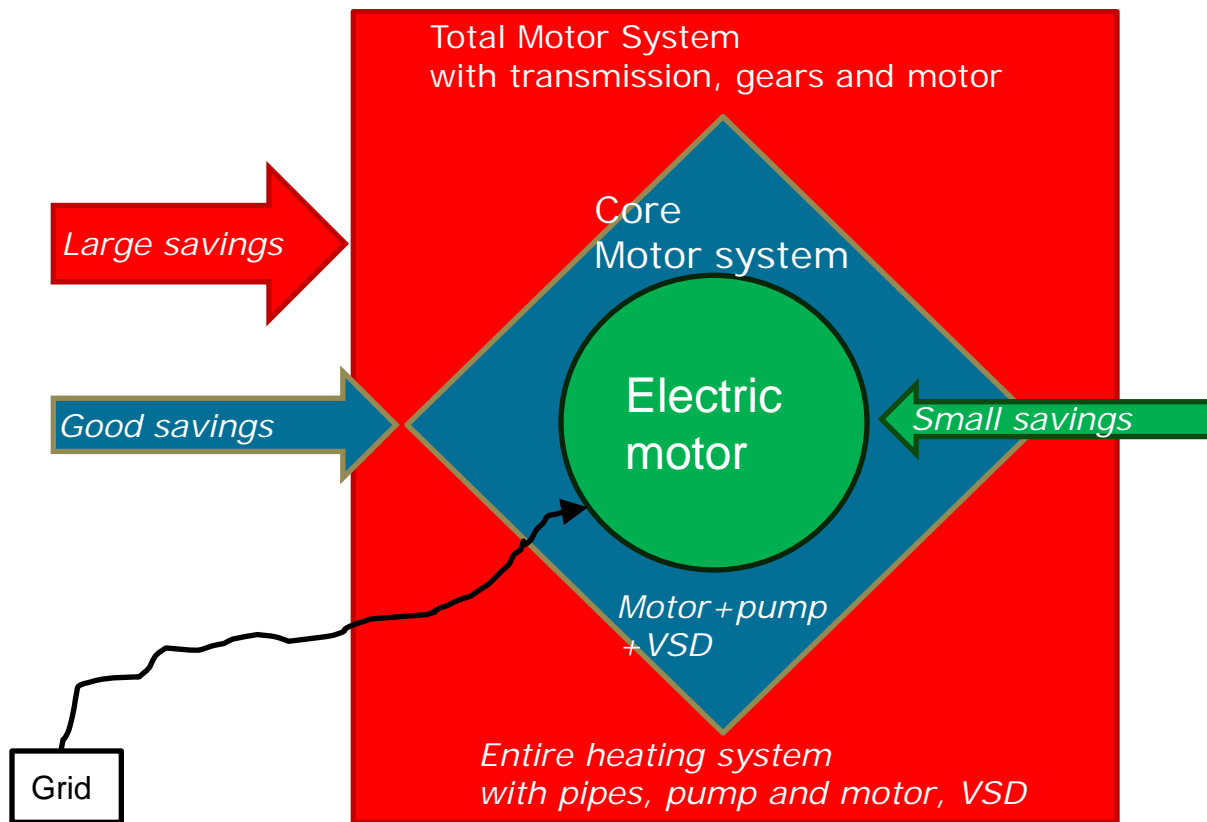
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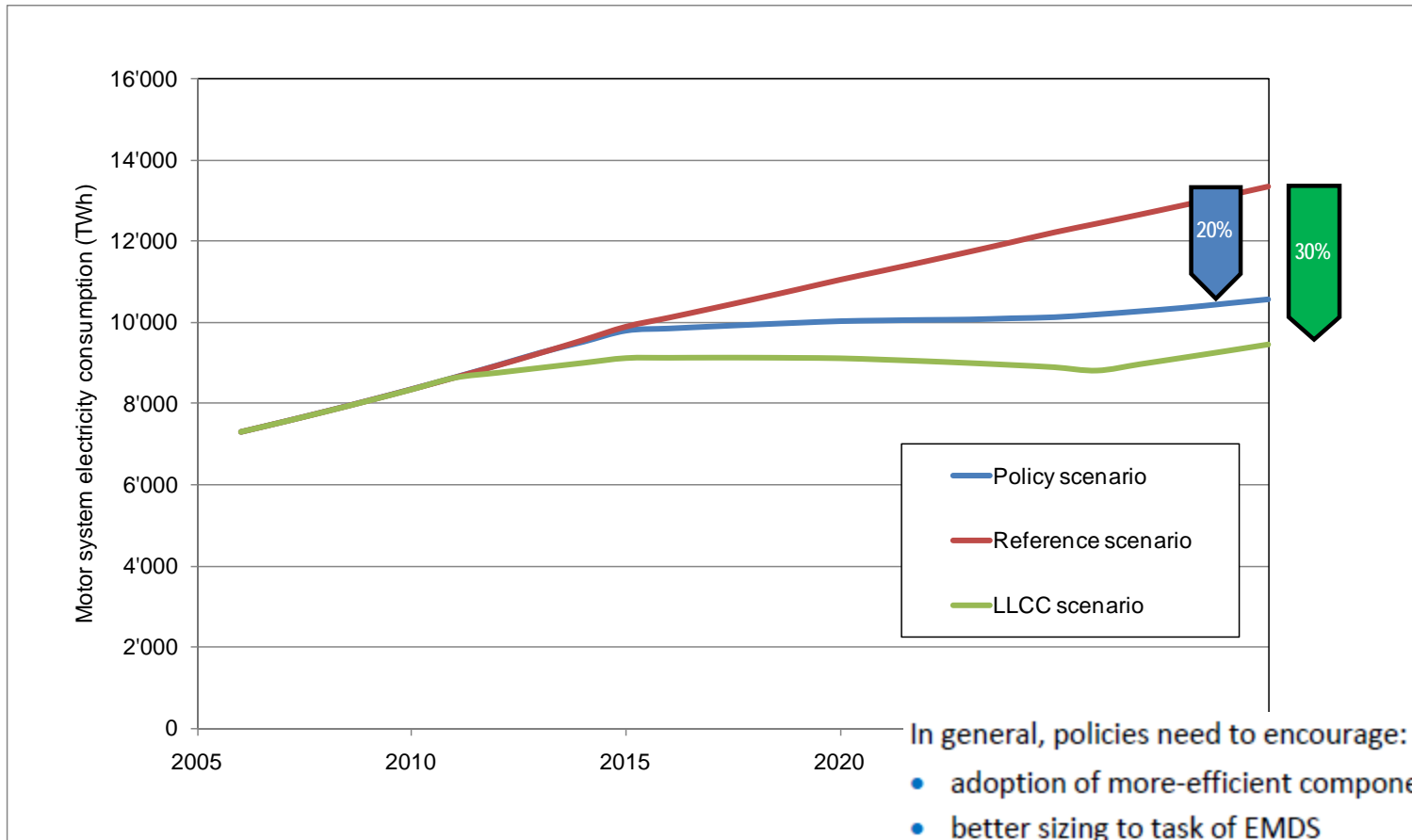
History of Energy Management in Netherlands

- **2000:** Introduction EnMS within Voluntary Agreements (VA's) EnergyEfficiency Based on ISO 14001
 - no formal standard, no certification requirement
 - Other elements: EnergyEfficiencyPlan, Monitoring EE results
- **2009:** 70% of industrial energy use is covered:
 - 900 companies have implemented an EnMS according to **Referentie Energiezorg** or are working on it
 - 150 E-intensive companies have energy identified as environmental aspect within **ISO 14001**
- **Mid 2009:** Publication EN 16001 Energy Management Systems
- **Mid 2011:** Publication ISO 50001 Energy Management Systems
- **2012/2013:** Energy audits (prEN 16247 JWG1) --> TC242/ISO50001/2

2. Definition Electric Motor Driven System EMDS



2. Savings with Electric Motor Driven Systems



In general, policies need to encourage:

- adoption of more-efficient components within EMDS
- better sizing to task of EMDS
- optimisation of the ensemble of components within EMDS
- use of VFDs for variable-load applications
- better in-field management of EMDS

Source: IEA 2011, Paper by P. Waide, C. Brunner

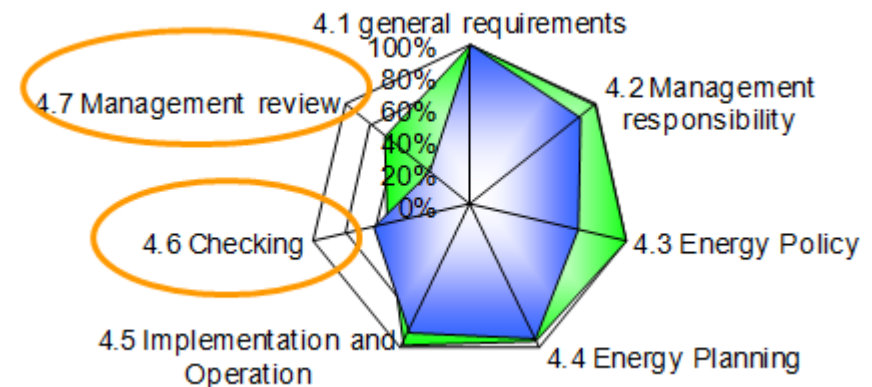
3. EnMS and EMDS in The Netherlands

Yearly sample audit at 30-50 participating companies

- Check on the implementation of the En-ManagementSystem
- Check on the compliance with the VA

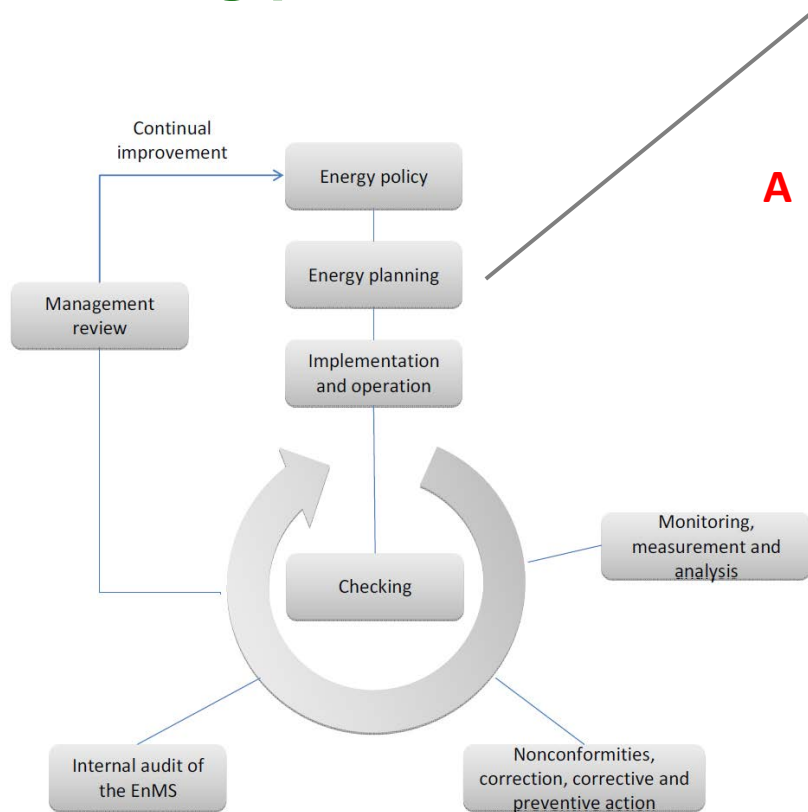
This year special attention for

- Compliance with ISO50001
- Check on EMDS-related issues in
 - A. Consumption analysis & identification of drives, Analysis of measures
 - B. Maintenance and overhaul
 - C. Procurement and design





Starting points for E-Motor Driven Systems in EnMS

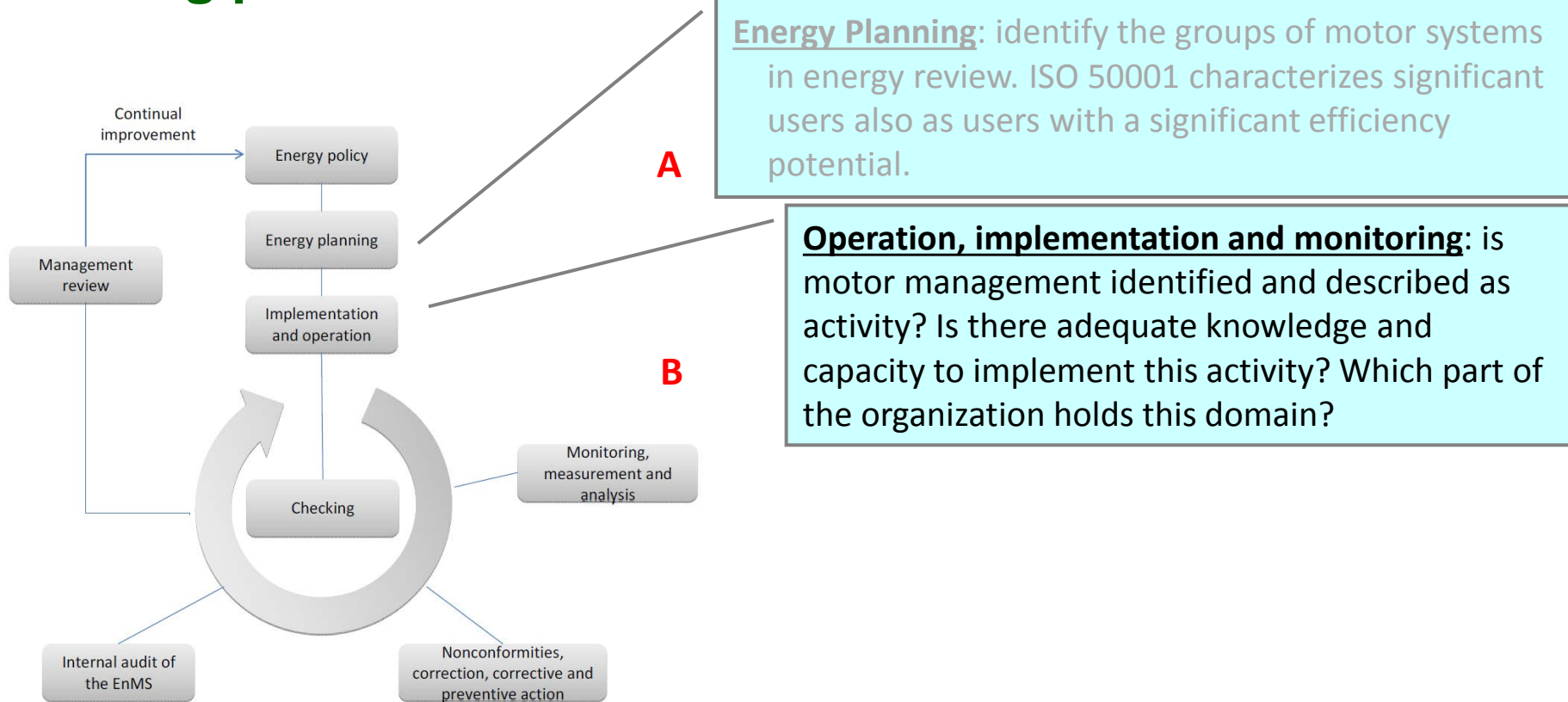


Energy Planning: identify the groups of motor systems in energy review. ISO 50001 characterizes significant users also as users with a significant efficiency potential.

A

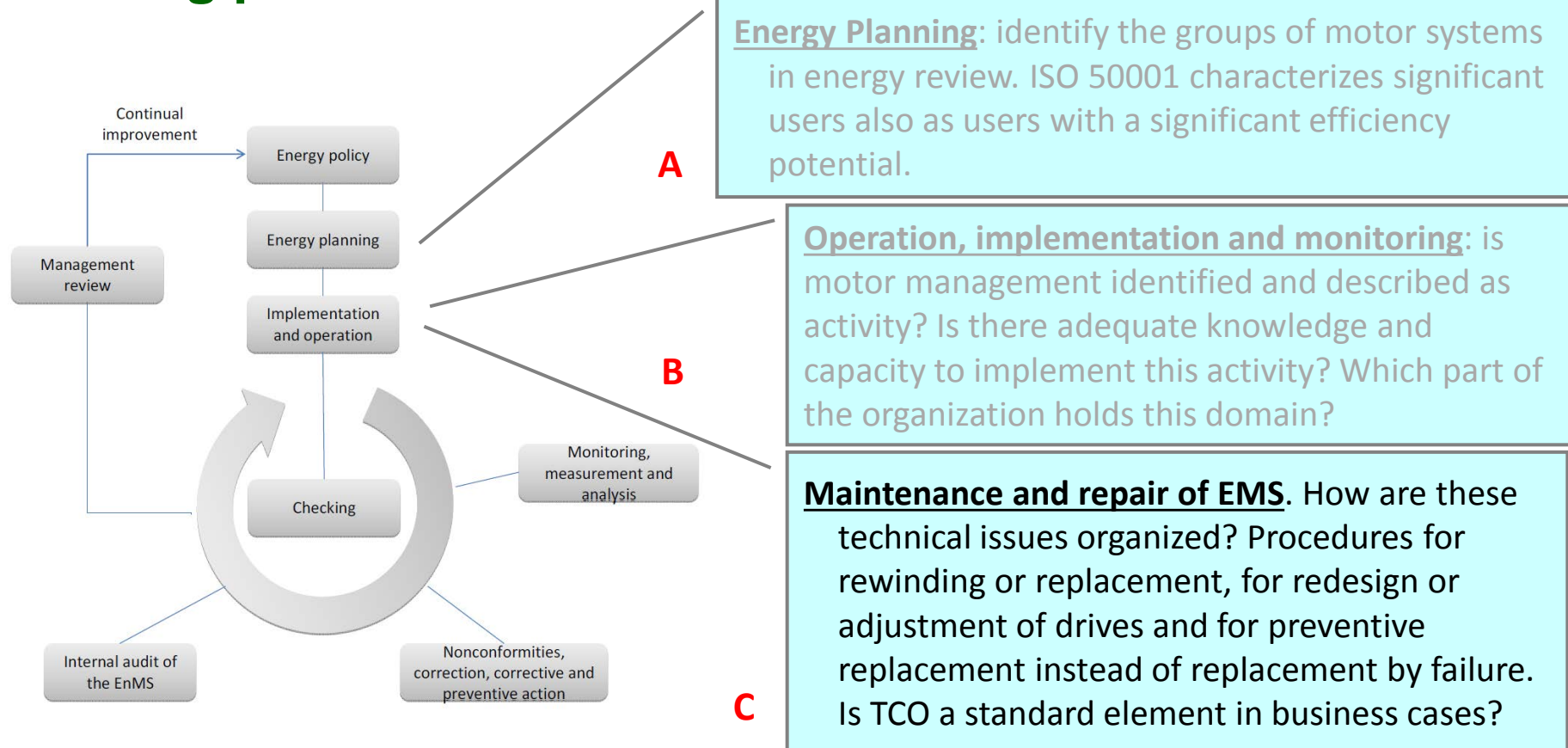


Starting points for E-Motor Driven Systems in EnMS



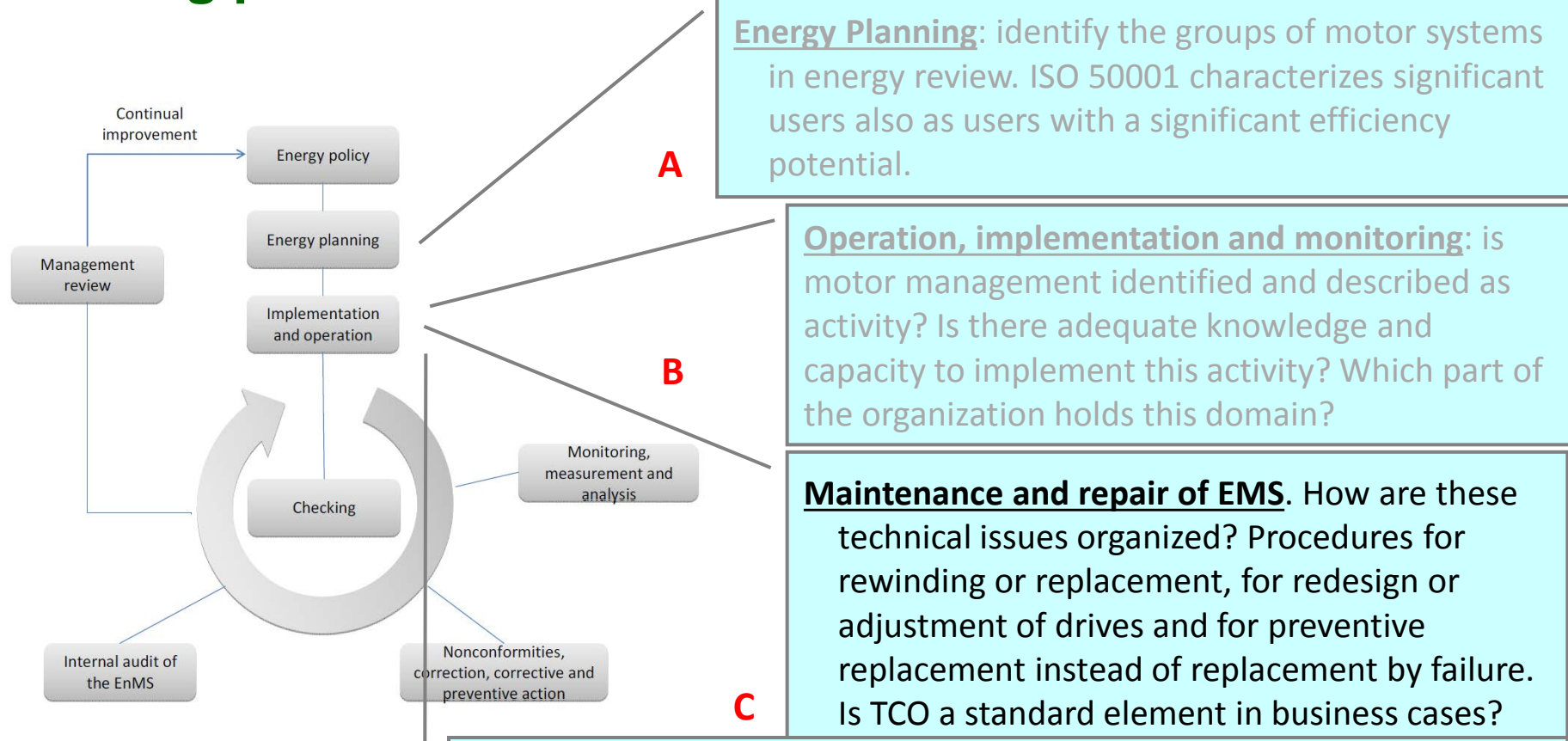


Starting points for E-Motor Driven Systems in EnMS





Starting points for E-Motor Driven Systems in EnMS



Procurement and Design. Are minimum efficiency requirements for motors in place? Are they differentiated towards the application, e.g. processing equipment or pumps? How are the responsibilities divided between engineering, energy coordinator and procurement? Is personnel trained in the use of total cost of ownership principles?

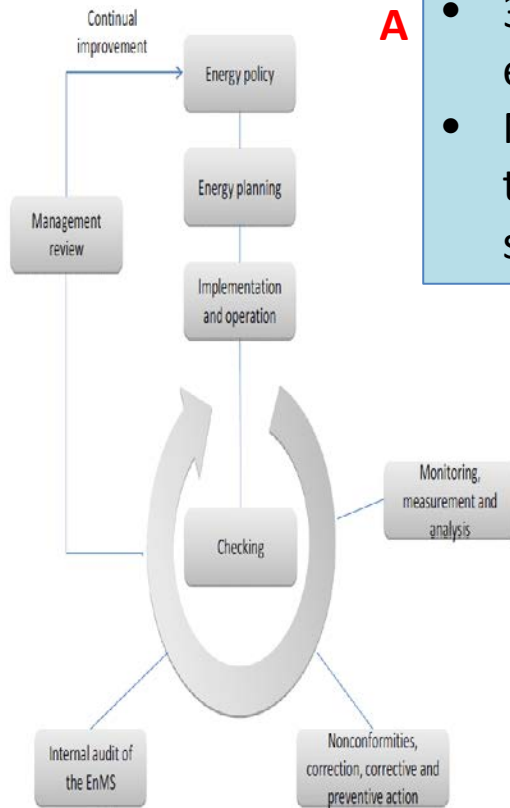


Results: starting points for EMDSystems in EnMS

Energy Review/Planning

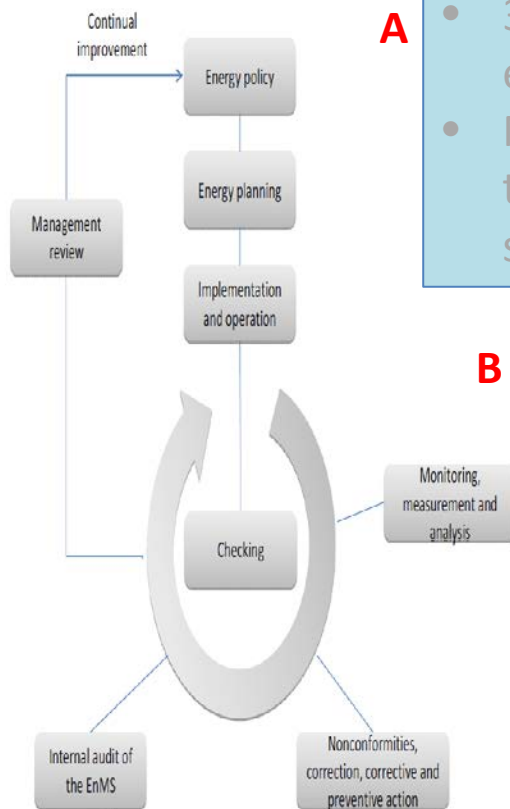
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- 30% know some details of their motor energy use. In 70% the motor electricity use is not recognized as 'significant energy users'.
- Not one enterprise has a specific plan for EMDS, nor do they have the intention to do so the coming period. Some will implement more submeters to gain more insight in the energy use of systems





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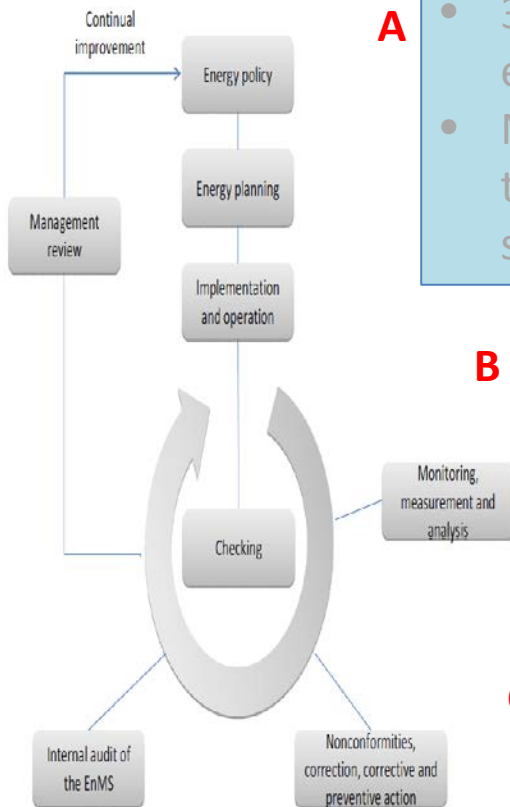
B

Maintenance and overhaul

- Covered in general (equipment) maintenance schemes.
- Only some (<10%) have specific attention for *efficiency* of motor systems in maintenance/replacement procedures: VSD, belts, IE2+, condition monitoring



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C

Procurement (and Design)

- Minimum standards (EU-regulation) are known by most.
- 10% use IE3 as standard; VSD's are applied in single cases; but higher efficiencies are no part of procurement procedures
- LCC is not applied

4. Concluding

- Low awareness of the savings potential of efficient EMDS within the audited companies
- A gap in the implementation of EnMS (a poor application of 'significant energy use') shows the need for identifying EMDS within the various EnMS activities
- Having a EnMS in place is not synonym with utilizing the (full) potential of efficient EMDS
- The audited companies with the highest compliance (80% av.) also show the best score on the 3 audited aspects of EMDS in EnMS
- The ISO 50001 standard in itself seems to have good starting points for applying efficient EMDS
- More focus is needed on connecting EMDS-subjects to the (implementation of the) ISO standard, and on developing awareness on the savings potential of efficient EMDS.
 - especially in Analysis, Maintenance, Procurement and Design

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- Implementation of ISO50001 (NL: transition towards) offers good chances in getting more attention for the potential of efficient EMDS
- The outcomes of this audit 2012 underlines the need for action from government, suppliers and installers towards the industry in accelerating the implementation of efficient EMDS
- In the Netherlands these parties are working together on this target by participating in
 - Dutch Knowledge network #KEEA: capacity building, knowledgetransfer
 - Green Deal Efficient EMDS, starting dec 2012
 - EMSA programme

Thank you

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