

**138 BT – INFO - Item 5.3.6**

**SUBJECT**

EC Mandate M/470 "Electric motors" – Work plan

**BACKGROUND**

EC Mandate M/470 in the field of electric motors was accepted by 137<sup>th</sup> BT in September 2010 (BT137/DG8175/DV).

BT referred the coordination of the CENELEC response to CLC/TC 2 "Rotating machinery" and CLC/TC 22X "Power electronics" in close cooperation with CLC/TC 17B "Low-voltage switchgear and controlgear".

CLC/TC 2 sent the attached report reflecting the work plan established to fulfil M/470 tasks.

In the meantime, the report was sent to the European Commission (DG Energy – Unit C3).



**Technical Committee: TC 2 – ROTATING MACHINERY**

**Title: workplan of the Mandate M/470 EN**

15<sup>th</sup> February 2011

**To the European Commission**

**via CEN-CENELEC Management Centre (CCMC)**

Dear Madam dear Sirs

The Technical Board accepted the mandate M/470 EN from the European Commission in the field of electric motors (D137/C194) and authorise CLC/TC2 "Rotating machinery" and CLC/TC 22X "Power electronics" in close cooperation with CLC/TC 17B "Low-voltage switchgear and controlgear" to fulfil it (D137/C195).

The tasks for standardization cover procedures and methods of measuring and establishing the energy efficiency and associated parameters like efficiency classes of different types of electric motors. In additional the characteristics of typical applications of motor driven system (e.g. load profiles) should be taken into account to enable a system approach, because the highest energy saving potential is in the system. In additional the definition of parameters for resource efficiency, re-use and recycling and the development of a standard test report are main tasks.

CENELEC TC2 has developed the following workplan how to handle the mandate for the attention of the European Commission and CCMC.

Best regards

A handwritten signature in black ink, appearing to read "M. Lhenry".

Michel Lhenry  
Chairman of CLC/TC2

A handwritten signature in blue ink, appearing to read "B. Sattler".

Bernhard Sattler  
Secretary of CLC/TC2

**1. General statements of CLC/TC2 regarding the mandate M/470 EN**

- a. CLC/TC2 will be in charge for fulfilling the mandate M/470 EN. Considering the needs of rotating electrical machines.
- b. In general CLC/TC2 follows the Dresden Agreement. Which means CLC/TC2 members are directly involved in the planning of new work in the IEC in their capacity as IEC members. Due to this IEC standards can mostly adopted without Common modifications to European standards.
- c. The mandate M/470 EN includes different tasks which cannot be met by only one standard. There is a need of different approaches e.g. extension of already existing standards, New Work Item Proposal.
- d. The mandate M/470 EN considers standardizations tasks of motors and the whole power drive system, which shall be agreed with CLC/TC22X "Power electronic".
- e. The mandate relates to the EuP-Directive 2005/32/EC and the regulation 640/2009 EN with regards to eco design requirements for electric motors. However the standardisation work does not consider any legal requirements.

**2. Approach to fulfil the mandate M/470 EN**

- a. CLC/TC2 does not launch own Working Groups and manage the standardization tasks of the mandate in different ways of co-operations.
- b. The motor specific standardisation tasks shall be handled on IEC level by the concerned Working Groups (IEC/TC2-WG28 and WG31)
- c. The mandate affects the scope of the CLC/TC2 and CLC/TC22X "Power electronic". A liaison has been agreed between CLC/TC2 and CLC/TC22X. The system specific standardisation tasks shall be handled by CLC/TC22X-WG6. Other relevant committees e.g. CLC/TC 17B are also members of the WG6.

## CLC/TC2 identifies the following task for standardization from mandate M/470 EN:

	Tasks for standardization	Comment of CLC/TC2	Proposal for work	Status / timing
* General comment for task 1. to 5.: The tasks for standardization cover procedures and methods of measuring and establishing the energy efficiency and associated parameters of electric motors (starting from between 200 to 500W, as appropriate, up to 500kW)				
1.	Motors, including variable speed drives *	The task is to be done for motor integrated into drives, put on the market as a single product (motor with a converter mounted on it).	This task is to be managed in co-operation with CLC/TC22X in the WG6. A liaison is established and experts of CLC/TC2 will be members of WG6. The aim is to develop a new work item proposal (NWIP).	Agreed by CLC/TC22X-WG6  Timing: Mandate acceptance by CENELEC TB + 36 months
2.	AC induction motors as specified in relevant standards, such as in EN 60034-30 and in EN 60034-2-1 *	Future developments of efficiency standards of AC induction motors e.g. IE4 can only be handled by the relevant standard IEC 60034-30.	This task is to be managed by IEC/TC2-WG31. The aim is to include it in the second Edition of EN 60034-30	Agreed by IEC/TC2 chairman and convener of IEC/TC2-WG31 Timing: Mandate acceptance by CENELEC TB + 24 months
3.	All other types of motors, such as single phase induction motors and permanent magnet synchronous and reluctance motors, as e.g. in draft EN TS 60034-31 *	There is a need to define what kind of motors can / should be included.	This task is to be managed by IEC-TC2-WG31. The aim is to include it in the second Edition of EN/ TS 60034-31	Agreed by IEC/TC2 chairman and convener of IEC/TC2-WG31  Timing: Mandate acceptance by CENELEC TB + 24 months
4.	Other electric motors which operate in the same fields of application as AC induction motors.*	There is a need to define what kind of other electric motors can / should be included.	This task is to be managed by IEC-TC2-WG31. The aim is to include it in the second Edition of EN 60034-30.	Agreed by IEC/TC2 chairman and convener of IEC/TC2-WG31 Timing: Mandate acceptance by CENELEC TB + 24 months

	Tasks for standardization	Comment of CLC/TC2	Proposal for work	Status / timing
5.	Any other electric single speed, three-phase 50 Hz or 50/60 Hz, squirrel cage induction motor, as defined in the draft Commission Regulation, such as motors designed for converter operation; *	The task is to develop test methods and procedures of measuring and establishing the energy efficiency of motors designed for converter operation (motor sold alone without converter).	This task has already started within IEC/TC2-WG28, preparing the new IEC 60034-2-3.  Experts from IEC-SC22G should be joined the IEC-TC2-WG28.	Agreed by IEC/TC2 chairman, convenor of IEC/TC2-WG28 and CLC/TC22X  Timing: Mandate acceptance by CENELEC TB + 24 months
6.	Extra-losses of motors due to drive application	There is a need to consider how extra-losses of motors due to converter-fed AC motors application are taken into account.	This task is to be managed by IEC-TC2-WG31.  The aim is to include it in the second Edition of EN 60034-30.	Agreed by IEC/TC2 chairman and convenor of IEC/TC2-WG31  Timing: Mandate acceptance by CENELEC TB + 24 months
7.	To define typical load profiles or Load-speed profiles	There is a need to get input from typical motor driven applications.	This task is to be managed in co-operation with CLC/TC22X in the WG6. A liaison should be established and experts of CLC/TC2 will be members of WG6.  The aim is to develop a new work item proposal (NWIP).	Agreed by CLC/TC22X  Timing: Mandate acceptance by CENELEC TB + 36 months
8.	The definition of parameters for resource efficiency, re-use and recycling	This task is to prepare templates document to provide all necessary information for covering environment EPD (Environmental Product Declaration).	A sub WG of CLC/TC22X-WG6 has already started the work for VSD. The system should be used although for motors.  CLC/ TC2 wants to avoid different approaches and wait until the result of WG6 is available.	Agreed by CLC/TC22X  Timing: Mandate acceptance by CENELEC TB + 24 months

	Tasks for standardization	Comment of CLC/TC2	Proposal for work	Status / timing
9.	Verification procedure for market surveillance purposes for motors	<p>The tasks are:</p> <ul style="list-style-type: none"> <li>• to provide values for measurement uncertainties for the purposes of the verification procedure for the measured parameters taking into account the different sources of variability</li> <li>• to verify it, in order to reduce the impact of variability to the system, the standard(s) should include specific criteria to be met by laboratories involved in the verification of the declared data (e.g. quality management system, qualification system, personnel training...).</li> </ul>	<p>This task is to be managed by IEC-TC2-WG28.</p> <p>The aim is to develop a standard test report</p>	<p>Agreed by IEC/TC2 chairman and convenor of IEC/TC2-WG28</p> <p>Timing: Mandate acceptance by CENELEC TB + 24 months</p>
10.	Template for test report	<p>The task is to define a template for a test report indicating the information to be declared by the manufacturers to fulfil at least the ecodesign requirements for electric motors.</p>	<p>This task is to be managed by IEC-TC2-WG28.</p> <p>The aim is to include it in the new standard EN 60034-2-3 &amp; new edition of EN 60034-2-1 EN 60034-30 will be considered (IE Class)</p>	<p>Agreed by IEC/TC2 chairman and convenor of IEC/TC2-WG28</p> <p>Period to develop a new standard.</p>