RESPONSE FORM

Standardization needs and suggestions to EURAMET for consideration in their 2017 EMPIR call

In the frame of the between CEN, CENELEC and EURAMET, CEN and CENELEC have been invited by the EURAMET Management to put forward their testing and measurement needs in **Industry**, in **Fundamental** and in **Pre- and co-normative research**.

Relevant technical groups (sector fora, advisory boards, coordination groups, TCs...) are invited to contribute with:

- a short introduction or an overview paper of their unaddressed standardization needs for testing and measurement, and
- a contact person (secretary, chair, convenor, liaison officer, etc.) whom proposers for the Potential Research Topics can contact,

using the table below, **before 12 December 2016**

Source of the identified need (identification of TC, WG, etc, incl. title)	☐ CEN/TC 0/WG 0 ☒ CLC/TC 14 Power transformers ☐ ISO/TC 0/SC 0 / WG 0 ☐ IEC/TC 0/SC 0 / WG 0 ☐ Other, namely *Identification, Title*
European entity responsible for submission of the need	CLC TC14 Power transformers
Person that can be contacted for more detail (name, e-mail and telephone number)	*Angelo Baggini* *angelo.baggini@unibg.it* *+39 035 2052037* *Italy*
Unaddressed need (short description)	*1. Magnetostriction requirements to improve acoustical noise performance of power transformers* *2. Improved facilities for loss measurements on power transformers and reactors*
Type of work (more answers possible)	☒ pre-normative ☐ SI-units ☒ co-normative ☐ interlaboratory study ☒ testing ☐ fundamental research ☒ measurement ☒ market support ☒ energy ☐ environment
Estimated effort (if known)	Person months:

Further explanation of need (TC business plan, road map, formal decision, work item, etc.)	*The TC14 members have expressed two clear needs for metrology research in the area of power transformers.* *The first need relates to magnetostriction requirements to improve acoustical noise performance of power transformers. The required research relates both to the magnetic properties of the transformer core material, where there is no standardised way of measuring it, as well as to the measurement of sound, where guidance is needed in order to prevent that noise limits in power transformers standards become unrealistically low (e.g. below background levels).* *The second need relates to loss measurements on power transformers and reactors at very low power factor. Driven by among others the Ecodesign Directive, the reliable and accurate measurement of such losses become more important. There is a need for the development of new measuring systems for more accurate measurement of losses of power transformers with high energy performance and for the measurement of losses of large reactors (where the power factor is very low). Calibration facilities are required to calibrate and verify the performance of these new measuring systems. Finally, guidance is needed on the evaluation of uncertainty in loss measurements of high-energy performance power transformers and of large reactors in order to ensure a common and correct approach in the quite complicated uncertainty analysis. Since the present IEC and EN 60076-19 standards are essentially only focusing on power transformers, guidance on uncertainty calculations for reactor loss measurements is particularly required. In addition, studies are needed on the effects of non-sinusoidal test signals used in practice on the final accuracy of the loss measurement.* *Estimated time frame that need shall be fulfilled: in the coming 4 years*
Enclosures	☐ Yes ☒ No

Email address for sending the Response Form: