RESEARCH AND STANDARDISATION

RESPONSE FORM for Standardisation groups

Opportunity for standardisation to contribute to the *European Partnership on Metrology EPM* under Horizon Europe

Objective: to collect standardization needs and suggestions to develop research projects in testing and measurements for the upcoming European Partnership on Metrology (EPM) calls in 2021

In the frame of the cooperation agreement between CEN-CENELEC and EURAMET, CEN and CENELEC have been invited by the EURAMET Management to put forward their **testing and measurement needs in research** for consideration by metrology institutes for future calls under EPM.

Relevant technical groups (sector fora, advisory boards, coordination groups, TCs, WGs...) **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,

by using this Response Form and send it at STAIR EMPIR, Mr Ortwin Costenoble: empir@nen.nl

Deadline for the consultation: **11 December 2020**.

Source of the identified need (identification of TC, WG, etc, incl. title)	☐ CEN/TC 0/WG 0 / ☐ CLC/TC 0/WG 0 ☐ ISO/TC 0/SC 0 / WG 0 / ☐ IEC/TC /SC 0 / WG 0 ☒ Other, namely *NEC TC115, High Voltage Direct Current (HVDC) transmission for DC voltages above 100 kV*
European entity responsible for submission of the need	*NEC TC115* *High Voltage Direct Current (HVDC) transmission for DC voltages above 100 kV*
Person that can be contacted for more detail	*dr. Yanny Fu* *Yanny.Fu@dnvgl.com* *+31 26 356 3130* *DNVGL, Utrechtseweg 310 - B50, 6800 AR Arnhem, The Netherlands*
Title:	*Measurement of losses in HVDC converter stations*
Unaddressed need	*Losses in HVDC converter stations are presently calculated but this gives inadequate confidence in the results. There is a strong need for actual measurement of these losses.*
Further explanation of need (TC business plan, road map, formal decision, work item, etc.)	*HVDC transmission is increasingly used for connection of renewable energy sources to the grids, and for long distance transport of electricity. At present, the losses in HVDC converter stations are mainly estimated based on calculations. This is a very unsatisfactory situation as these calculations give insufficient insight in the actual losses. Measurement of switching and conduction losses in the field (and under laboratory conditions reflecting field conditions)*

	accurately considering the effect of environment is essential for several reasons, including effective metering. *New standards are needed to provide guidance to the reliable measurement of HVDC losses. These standards among others will support transmission system operators and equipment manufacturers in the procurement and subsequent acceptance tests of HVDC equipment.* *This need should be covered within the coming 3 years.*
Proof of need by the TC/SC	*At the 16 December 2020 meeting of NEC TC115, an extensive discussion was held on the reliable determination of losses in HVDC converter stations. It was agreed at this meeting that the NEC TC115 chair would submit the need for R&D on actual measurement of these losses to the STAIR EMPIR program. It is envisaged that the requested pre-normative R&D will lead to material that can be used in future standardisation on this subject by TC115 or TC42.*
Enclosures	☐ Yes ☒ No

*See **more information or a link to the webinar at** **EMPIR website**
CEN/CENELEC website "Standards and metrology"