

Electric Vehicle Charging



How to deal with Legal Metrology?

The number of electric vehicles on the road is rapidly increasing. This leads to an increased need for charging possibilities, not only residential, but also in public places such as parking places and along the highway. Have you thought about the applied method for the energy measurement and transaction? What are the requirements? Are these devices fulfilling the requirements for custody transfer? And finally, is there a system in place for metrological control? These are the kind of questions NMI can be of help with.

The EV systems are relatively new. As a result, most countries in the world do not have a well-established system for metrological control in place yet. Although the need for such a system is rapidly increasing due to a quickly increased number of installed charging devices, so far only a limited number of countries really implemented specific metrological legislation or initiated a metrological control system. Although a number of European countries apply the Measuring Instruments Directive (MID) for the electricity meter built inside an AC charger, especially for DC fast chargers in general requirements are lacking.

Recently the International Organisation of Legal Metrology OIML has published G 22, a dedicated document for EV Supply Equipment. This document might be the basis for implementation in national legislation in various countries. Right now OIML is working towards the final Recommendation of this document.

MID AND HARMONISED STANDARDS

The MID contains requirements for active electrical energy meters. The EN 50470 series (although officially not harmonised any longer) and their successors EN 62052-11 & EN 50704-3, can be used as harmonised documents under the MID. Presumption of conformity with the MID is assumed, if a meter meets the requirements laid down in those documents. For DC meters recently the standard IEC/EN 62053-41 has been published, as well as the European EN 50470-4. These documents can be used for the certification of DC energy meters.

In Europe CENELEC is also working on the prEN 50732 for measuring systems within EV Supply Equipment. This document will focus not only on the installed measuring part, but also on the other relevant additional functionalities, like the applied cable, energy loss, the presented items on the display and secured data communication to the backend. This document is expected to act as a harmonised standard in the future.

GERMAN EICHRECHT

In Germany, EV Charging Systems fall under the German Eichrecht. Here dedicated harmonised standards are applied. Being a Notified Body for the German law, NMI is able to do the necessary assessments. This covers not only AC and DC chargers, but also DC electricity meters.

METROLOGICAL CERTIFICATION NEEDED?

In At NMI, EV supply equipment can be examined in accordance with the previously mentioned standards and legislation. In case of a positive result, this will result in a test report showing all the test data and an MID type approval or German national approval (module B). If required, NMI can also be involved in the module D assessment, that follows type examination. Module D allows the manufacturer to place his products on the market (initial verifications).

Furthermore, at NMI AC and DC meters can be tested in accordance with the relevant harmonised standards and, if needed, the German legislation. This can result in an MID approval and, if needed, also a German national approval.

INTERESTED?

If you're interested in the examination of an EV charging system, we are happy to answer all your questions. Please feel free to contact us at nmi@nmi.nl. On our website, you can find more information about our services.