

A basic Guide to Eichrecht, The German calibration law for electric vehicle charging

To date we are used to having transparency when filling up a petrol station, there is a comprehensive display of the quantity of fuel pumped, price per litre and total amount. Therefore, it is only natural for an EV driver when charging their car at a charging station to have the same level of transparency.

The Eichrecht measurement and calibration act, which is an amendment to Measuring and Verification Act (Mess und Eichgesetz / MessEG) and the Measuring and Verification Ordinance (Mess- und Eichverordnung / MessEV) is the solution giving the user transparency for detailed billing for each charging event.

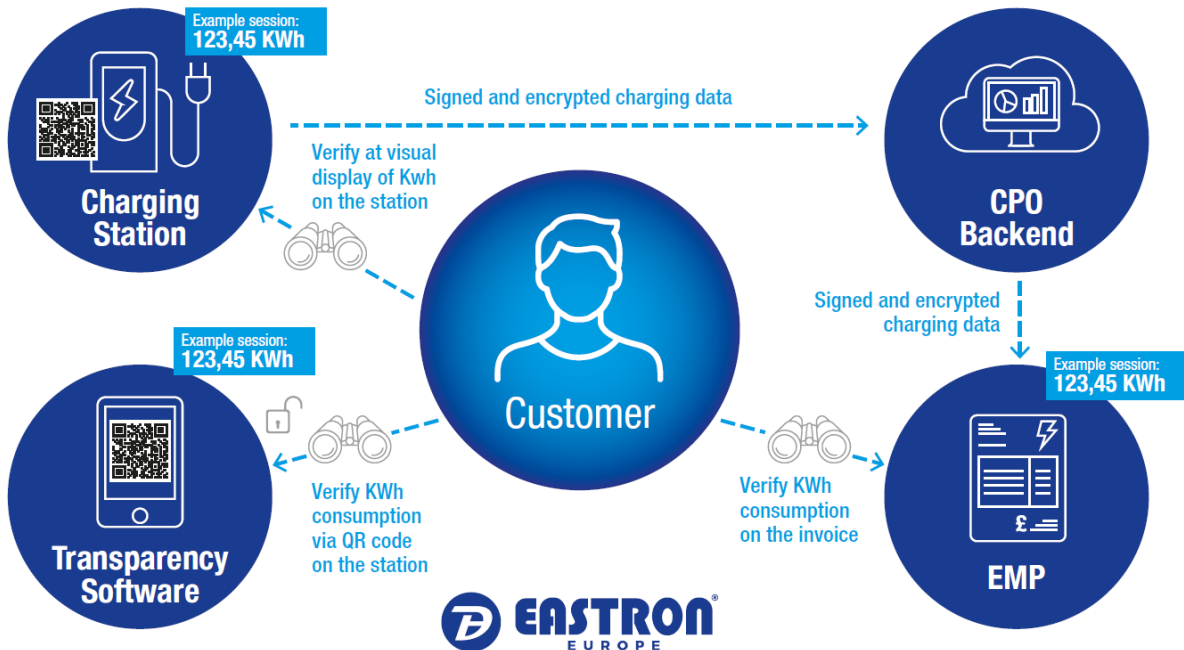
How does Eichrecht -Mess und Eichgesetz work?

The German law states that the kWh measurement meter used for the billing must be periodically calibrated and visible to the EV consumer.

The customer should be able to confirm the kWh reading on the charging station, via a display or the actual kWh meter device and be able to verify this on the EMP (e-mobility provider) application. It is also required that the charging station will also have a unique public key, this will allow the consumer to verify the "Start meter value" using an independent interface (Web or Application). This is to be in accordance with the Eichrecht directives and ensures the EV charging consumer can verify how much electricity has been used at what time and what price.

Simplified Diagram for EV driver and how Eichrecht provides secured data transparency of the EV charging session

Simplified Diagram for EV driver and how Eichrecht provides secured data transparency of the EV charging session



After the charging session, the charger generates signed encrypted data to the CPO (Charge point operator), the CPO will then send the signed and encrypted charging data to the EMP (e-mobility provider) which then creates the invoice for the customer.

To comply with these regulations and acts, the kWh meter has to be certified by a notified body for MID (Measuring instruments directive) and PTB (the national Metrology Institute of Germany)