

12 Design Principles for Public Charging Stations

Mandatory

- 1.** The EVSE ID or a part of the EVSE ID (usually the last digits) is used uniformly to designate the charging connections at the charging station – independent, other IDs, e.g. CPO-internal charging station numbers, should not be found on the charging station. The ID of the electricity meter that (cf. German calibration regulations) must be differentiated from the EVSE ID as far as possible.
- 2.** The EVSE ID labelling is placed where it is impossible to mix it up, e.g. on the charging plug itself and not on its socket.
- 3.** Operating elements such as touch screens and buttons function reliably in all weathers – just as the display is readable in all weathers and the RFID reading field is clearly recognisable as such, even in sunlight.
- 4.** The URLs attached to the QR codes on the charging station are standardised to such an extent that they can be read by any app and thus enable the charging process to be started – and not just link to general information about charging.
- 5.** For all possible authentication methods, there is at least a brief instruction directly at the charging station.
- 6.** The charging station operator's help hotline or fault hotline (with 24/7 availability) should be clearly visible on the charging station.

Recommended

- 7.** The price per kWh is displayed at the charging station before charging – also in the case of contract-based charging – and the total price after charging (requires the cooperation of the e-mobility service provider; technical and organisational feasibility to be checked).
- 8.** The charging station gives instructions on process steps and feedback on the success or failure of a process step (with assistance if necessary). Assistance is displayed for each process step.
- 9.** The intuitive usability of the charging stations, especially when starting and ending charging processes, is improved by optimised UX concepts, e.g. via audio-visual effects.
- 10.** The charging station has weather protection, typically a roof.
- 11.** An info screen for the charging process shows information on the remaining charging time until a desired SoC (state of charge) or a desired range (may require input data from the vehicle).
- 12.** The information displayed in the charging app and the information displayed on the charging station (e.g. SoC) are synchronous.