



POSITION PAPER

Updated ANEC proposed position on the Technical Requirements for inclusion in standards relating to the Communication of Consumer Information by the Smart Metering Systems to the Consumer Interface (for use by an in-home display)

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Purpose

The purpose of this paper is to propose the ANEC position on the requirements which need to be included in relevant standards to ensure information that needs to be available to the consumer can be communicated to an external display or other end device connected to the interface with the smart metering system.

Background

ANEC – the European Voice in standardisation - is a member of the Smart Meter Coordination Use Cases Working Group. The objective of this Group is to provide insight into the functional and technical requirements for data communication that standards should support in order to meet the needs of all users, including consumers.

A key area of concern for ANEC has been to ensure that all consumers have easy access to understandable and usable information on their consumption. For many consumers, the way in which this information will be received will be through a simple in-home display which is connected to an interface with the smart meter. This display will need to provide consumers with information, where it is available, on their historic consumption as well as on current usage and their impact on the environment, so that consumers are empowered to take informed decisions on their consumption.

Unfortunately, the scope of the Smart Meter Coordination Group's work under Mandate M/441 is limited to the development of standards relating to the communication of information to the interface with the smart metering system and does not include the information that will be available to the consumer. Some of the displays currently in use do not meet ergonomic standards, so the information may not be presented in a way which is easy for all consumers to understand. ANEC has repeatedly made the case with the Commission that these limitations may mean that some consumers are unable to access the information they require, but the Commission has been unwilling to change their position and has stated that this is an issue which needs to be addressed through regulatory measures at Member State level.

Although the Use Cases currently being developed will not resolve this issue, they do provide an opportunity to ensure that the relevant standards at least reflect the need for the smart metering system to be capable of communicating the information, where it is available, which the consumer may need to access via a simple in home display. The responsibility for development of standards for this area falls within the remit of CENELEC TC 205 and the requirements for communication of information to the consumer interface will be included within standard prEN50491-11 which is currently under development.

Following an informal discussion with the Chair of the Use Cases Working Group, ANEC now has the opportunity to specify the functional and technical requirements which the relevant standards need to support to ensure that the smart metering system is capable of communicating the information which we believe needs to be made available to the consumer interface. This paper reflects the views from members of ANEC's Ad Hoc Smart Meter and Smart Grid Group on the draft proposed Technical Requirements.

Proposed Technical Requirements

The UK Government has made the provision of an In Home Display for consumers a mandatory requirement and the UK's Smart Metering Equipment Technical Specifications include the requirements for information to be communicated from the smart metering system for access by the display.

It is understood that decisions on the functionality to be provided within the smart metering system and the information to be communicated to the consumer will be taken at a national level, but it is important that the standards being developed support the communication of available information to the consumer. The UK's requirements have therefore been used to provide the basis of ANEC's proposed Technical Requirements, detailed in section 4, for inclusion in the Use Case covering the communication of information to consumers and in draft standard prEN50491-11. These requirements are applicable regardless of the communication mechanisms and protocols used and do not specify any requirements relating to data privacy and security, as a separate group has been established to address this issue.

ANEC recognises that in some Member States some of the information detailed in this paper will not be available to the smart metering system, so it would not currently be possible to communicate this information to the consumer interface. Member States may also decide to use different channels to communicate some items of information to consumers.

It is important to note that ANEC's proposals do not represent a minimum set of requirements for the information to be communicated. The objective is to ensure that where this information is available to the smart metering system, the relevant standards include the necessary requirements to enable it to be communicated to the consumer interface.

Smart Metering System - Communication with devices connected to the consumer interface

Communication requirements for inclusion in standards relating to Smart Metering Systems

Standards being developed for Smart Metering Systems should include the functionalities needed for the system to be capable of:

- Establishing a secure communication link to the consumer interface that provides access to the information set out below for electricity and, where relevant, for gas, heat and water
- Providing monetary information in Euro and where relevant in local currency
- Dispensing climate information in terms of CO₂ emissions related to electricity consumption

Note: ANEC believes it is important for consumers to be able to understand the environmental impacts of their choices and actions, but is aware that there is currently no agreement on how to provide an accurate estimate of an individual's CO₂ emissions.

- Updating consumption information for electricity every 10 seconds (30 minutes for gas) and timely updating of changes to other data

Note: Technical and cost considerations may mean that consumption information is updated less frequently in some deployments.

To enable the consumer to make informed decisions on usage, standards relating to smart metering systems need to include requirements to ensure that the system is capable of communicating the following information (where it is available to the smart metering system) to the consumer interface:

- The active tariff price for energy consumption in Euros or local currency units per kWh.
- Information on current and historic consumption in both units of quantity (kWh) and cost (Euro/local currency).
 - o Current consumption information should be available for current day, current week and current month
 - o Historical consumption information should be available for previous week, previous month and previous 12 months
- Comparative current and historical consumption information for the same periods to show how the consumer's usage compares with typical or average usage for other similar consumers

- Local time
- The amount of money due from the consumer since the meter balance was last reset.
- A near real-time indication of current usage in kWh and the cost to the consumer of that usage in Euro or local currency units
- An indication of the level of active power import as high, medium or low (electricity only)
- Whether the meter is currently operating in credit or prepayment mode

Where the meter is operating in prepayment mode, standards relating to smart metering systems also need to include requirements to ensure that the system is capable of communicating the following additional information (where it is available to the smart metering system) to the consumer interface:

- The sum of all time-based and payment-based debt still to be recovered
- The sum of the time-based debt recovery rates
- An indication that emergency credit has been activated and the amount of the emergency credit balance remaining
- An indication that the combined meter balance and emergency credit balance (if emergency credit is activated) has fallen below the low credit threshold)
- The amount of credit available to the consumer (excluding any emergency credit balance)

The information which is communicated is likely to evolve over time as consumers become more familiar with the technology. Where possible, standards relating to smart metering systems should also ensure that the system is capable of communicating further information (where it is available to the smart metering system) to the consumer interface. Examples of other information that may need to be communicated include:

- Information on the approximate levels of CO₂ emissions associated with current and historical energy consumption (not possible until a methodology for calculating levels of emissions is agreed)
- The current and historical quantities (in kWh) of locally generated energy exported by the consumer
- An indication or warning that the consumer is approaching the maximum contracted level of active power import
- The quantity (in kWh) of reactive energy imported and exported

To enable the above information, where it is available, to be displayed on a device connected to the consumer interface an extract from the UK's Smart Metering Equipment Technical Specifications, detailing the information which the relevant standards need to ensure that the smart metering system is capable of communicating to the interface, is attached as an Annex.

Annex

Extract from UK's Smart Metering Equipment Technical Specifications

Section 5.4.1 of the UK's Smart Metering Equipment Technical Specifications details the following information which relevant standards should ensure that the smart metering system is capable of communicating to the interface to enable the consumer to be able to access current and historical information on their electricity usage:

- The Meter Balance (5.5.3.13)
- The date and time of the last update of the Meter Balance
- The current time
- The total active import register (5.5.3.21)
- The tariff time of use register matrix (5.5.3.18) and Tariff Block Counter Matrix (5.5.3.17)
- The tariff switching table (5.5.2.31)
- The daily read log (5.5.3.8)
- The emergency credit balance (5.5.3.9) if emergency credit is activated
- The tariff time of use price matrix (5.5.2.33) and tariff block price matrix (5.5.2.30) with an indication of the active tariff price
- The time based debts from the time based debt registers (5.5.3.19)
- The time based debt recovery rates (5.5.2.6)
- The payment based debt from the payment debt register (5.5.3.14)
- The accumulated debt from the accumulate debt register (5.5.3.1)
- The low medium power threshold (5.5.2.14) and medium high power threshold (5.5.2.15)
- The instantaneous active power measurement
- The low credit threshold (5.5.2.13)
- The profile data log (5.5.3.15)
- The payment mode (5.5.2.17)

NOTE: The references in brackets refer to the descriptions in the UK's Smart Metering Equipment Technical Specification of data used to configure the operation of various functions on the smart metering system (section 5.5.2) and the operational data used for the output of information (section 5.5.3). Some of the information will only be relevant if the meter is operating in prepayment mode.

About ANEC

ANEC is the European consumer voice in standardisation, defending consumer interests in the processes of technical standardisation and conformity assessment, as well as related legislation and public policies.

ANEC was established in 1995 as an international non-profit association under Belgian law and is open to the representation of national consumer organisations in 33 countries.

ANEC is funded by the European Union and EFTA, with national consumer organisations contributing in kind. Its Secretariat is based in Brussels.



Raising standards for consumers

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