

## Översättning, en sammanfattning av Ei:s rapport om funktionskrav på elmätare

### Summary of the report from Ei about smart meters (Ei R2017:08)

This is a brief summary of the report *Funktionskrav på elmätare – Författningsförslag Ei R2017:08* ([https://www.ei.se/Documents/Publikationer/rapporter\\_och\\_pm/Rapporter%202017/Ei\\_R2017\\_08.pdf](https://www.ei.se/Documents/Publikationer/rapporter_och_pm/Rapporter%202017/Ei_R2017_08.pdf)). The report is prepared by the Swedish Energy Markets Inspectorate (Ei) and is currently available only in Swedish. We hope that this summary will be a source of inspiration for others, be of use for manufacturers of meters and serve as a basis for discussions on the development of smart electricity meters in relevant forums.

### Background

Electricity meters play a key role for the well-functioning of the Swedish electricity market. The meters are also important in the development of smart grids and can help us meet some of the long-term challenges we face in ensuring an affordable and sustainable energy supply. For DSOs, smart meters offer a range of possibilities that can contribute to a more efficient network operation, decreased energy usage and improved possibilities for integration of micro production. Smart meters also provide consumers with more detailed information about their energy consumption, providing possibilities for a more flexible use of energy and lower costs.

Within the next few years, many of the current electricity meters in Sweden will be replaced, as they have reached their economic lifespan. Introducing minimum functional requirements for the next generation of smart meters will ensure equal opportunities for all consumers as well as a level playing field for market participants active in the market.

In December 2016, Ei were tasked by the Swedish Government to propose new rules concerning minimum functional requirements for smart meters. The proposal was to be based on the functionalities that Ei recommended in the previous report *Funktionskrav på framtidens elmätare (Ei R2015:09)*. ([https://www.ei.se/Documents/Publikationer/rapporter\\_och\\_pm/Rapporter%202015/Ei\\_R2015\\_09.pdf](https://www.ei.se/Documents/Publikationer/rapporter_och_pm/Rapporter%202015/Ei_R2015_09.pdf)).

In November 2017, Ei presented the report *Funktionskrav på elmätare – Författningsförslag (Ei R2017:08)* to the Government. Ei have during the work with the report consulted The Swedish Board for Technical Accreditation (Swedac), The Swedish Data Protection Authority, The Swedish Armed Forces and The Swedish Security Service. Market participants (DSOs, manufacturers of smart meters, service providers.) were also invited to give their views during the work.

### Smart metering functionalities

Ei proposes seven functional requirements for smart meters. The functionalities are described in the table below.

Table describing the seven suggested functions/functionalities

| No. | Functionality  | Purpose   |
|-----|--|---|
| 1   | The meter should for every phase be able to measure voltage, current, active and reactive power for withdrawal and input of electricity. The meter should also be able to measure and register the total energy for withdrawal and input of electricity.   | Promotes efficient network operation.<br>Facilitates integration of micro production in the network.  |
| 2   | The meter should be equipped with a customer interface, supported by an open standard, for the customer to be able to take part of the measured values (see functionality no. 1) in near real time. It should not be possible to send information to the meter through the interface. The interface needs to be activated by the DSO, on request by the customer, to provide information. The DSO should control the identity of the user and must deactivate the interface when the customer moves out. | Creates conditions for a developed energy services market. Promotes demand side flexibility and energy efficiency.<br>Increases customer empowerment.   |
| 3   | The DSO should be able to read the measured values (see functionality no. 1) remotely (with remote control).   | Promotes efficient collection of meter data.  |
| 4   | The meter should be able to measure the energy for every hour and be able to convert to measure the energy for every fifteen minutes.  | Increases the customers possibility to be active (participate) in the market.   |
| 5   | The meter should be able to register data about the beginning and end of a power outage in one or more phases, that is three minutes long or more.   | Facilitates for the DSOs to pay compensation to the customer for interruptions longer than 12 hours and to report data to Ei.<br>Empowers the customer. |
| 6   | The DSO should be able to update software and change settings of the meter with remote control.  | Provides that new functionalities can be introduced in a cost-efficient way.<br>Expensive field visits can be avoided.                                  |
| 7   | The DSOs should be able to turn on and off the power through the meter with remote control.<br>This requirement only applies for meters that are not transformer connected.  | Facilitates for the DSOs to turn off the power if the customer moves out.<br>Expensive field visits can be avoided.                                     |

For some of the functionalities described above, Ei regards it necessary to issue complementary provisions. These provisions may be issued by either Ei or Swedac.

Ei proposes that the functional requirements should be regulated in an ordinance and that Ei is mandated to issue complementary provisions.

## Implementation

Ei proposes that the requirements shall apply to meters used for all low voltage customers. The requirements are proposed to be implemented by 1<sup>st</sup> of January 2025. Meters that are transformer connected at low voltage shall comply with the requirements by 1<sup>st</sup> of January 2030, or earlier if the customer so requires (but not earlier than 1<sup>st</sup> of January 2025).

The functionalities shall be implemented in such a way that unauthorized persons may not get access to information or functionalities in the meters. Consideration must be given to the General Data Protection Regulation (2016/679).

## Exceptions

Ei suggests that exceptions from the functional requirements may be granted in some cases (for the Swedish defence).

## What happens now?

Ei's report was presented to the Swedish Government in November 2017. Following a public consultation of the report, the Government will decide how the functionalities shall be regulated.