

Abstract

Since January 1, 2010, so-called smart meters (digital power meters) are obligatory in Germany for new buildings and following major modernization work. EU legislation assumes that, by 2020, 80 percent of the market will be equipped with such devices.

The purpose of this study was to analyse the perception of smart meters in Germany from a consumer perspective. To this aim, empirical evidence has been collected in a two-stage approach. In order to understand the attitudes and perceived benefits and concerns of consumers in depth, in a first, qualitative research stage two focus group discussions were conducted (one with “supporters” and one with “sceptics” of smart meters).

A quantitative, representative survey among 1.027 persons (decision makers regarding the choice of the electricity supplier in the household, 18 years or older) constituted the second stage of the project.

More than half of the population has never heard of digital or “intelligent” power meters (and the term “smart meter” is practically completely unknown).

After outlining to them the basic idea of digital power meters, in principle almost three quarters of the citizens are willing to use smart meters. Only one in five consumers is fundamentally sceptic regarding the idea.

However, knowledge about the specific advantages of digital meters is still very limited in Germany. Most frequently mentioned advantages are (unaided): better control and transparency of one’s own electricity consumption and the possibility to identify saving potentials (e.g. “power eaters”). Consumers estimate the power reduction potential in the own household at almost 10 percent.

More than half of German consumers, however, spontaneously mention disadvantages of digital power meters, too. The main fear is to become a “transparent customer”, especially if data protection laws are not sufficiently strict. Worries about increasing cost are relatively widespread as well.

When presenting the different functions and applications of digital power meters, consumers evaluate most of them positively. The highest appreciation receives the option to display the actual power consumption during a certain period of time (e.g. daily or weekly)

directly at the power meter. Consumers are also very interested in an automatic selection of the most favourable power tariff offered by the respective supplier. This option has the highest potential to convince even sceptics of smart meters.

In a prompted query of different advantages, environmental aspects rank first, just ahead of cost reductions. Considering that environmental reasons are hardly mentioned spontaneously, there is a clear need for informing consumers about the objectives and purpose of a country-wide introduction of digital power meters in Germany.

Main (prompted) consumer concern is that electricity providers could take advantage of detailed customer profiles to purposely raise electricity rates during specific times of the day.

Consumers clearly prefer a modular introduction scenario for smart meters, i.e. the country-wide introduction of basic digital meters without additional cost plus optional modules supporting special features that can be ordered from providers for an additional fee.

Most citizens would agree to the installation of a (free) basic digital meter “for sure” or “highly probably”. But only very few consumers can imagine to order a supplementary meter with special features subject to an additional charge. Three in four consumers say it is “rather” or “very unlikely” they would order an “intelligent” meter comparable to the integrated smart meters currently offered on the German market by some providers.

The results of the study indicate the following prerequisites for an increasing consumer acceptance of smart meters in Germany:

- A large-scale information campaign to educate consumers about the purpose and the functions of smart meters; with a special emphasis on environmental aspects
- The definition of clear and consumer-comprehensible data protection laws regarding the use of customer-specific electricity consumption data
- The development of specific and consumer-relevant applications of smart meters for the everyday-life of the “common man”
- A broad offer of smart meters with no or low additional monthly fees and a moderate installation fee
- Tariff plans with a strong peak/offpeak differentiation in order to provide a substantial incentive to move consumption into times of lower demand