

Germany's "Energy Savings meter" scheme

Policy background

The ["Energy Savings Meter" programme](#) in Germany was launched in 2016 by the German Federal Ministry for Economic Affairs and Energy (BMWi)¹ and managed by the Federal Office for Economic Affairs and Export Control (BAFA) with the aim to leverage digitalisation for the benefit of energy efficiency improvements. The application period ended in 2022, projects run until 2027.

Businesses promoting digitally enabled energy efficiency solutions to their customers could apply for funding to develop these digital solutions. The energy savings can be achieved through various ways: behavioural changes, maintenance or optimisation of energy-consuming appliances, or investment in more efficient products, and in different sectors and customer basis: households, public bodies, companies or other end customers.

Metered savings approaches were used to develop the market for "digital energy efficiency services" and to reward companies based on performance (pay-for-performance).

The technical guidance was quite broad, meaning that the managing authority had to assess the accuracy of all measurement protocols put in place by companies. This took more time than expected.

Technical aspects

The "Energy Savings Meter" gave some flexibility to establish a measurement method. It allowed three metering methods:

1. Simplified measurement concept

This method can be used when energy consumption is constant or can be reasonably assumed to be constant. For example: households, small businesses. The baseline is based at least on the average value of the last three annual bills and, if necessary, adjusted for weather. No other correction is needed. Metering of output or relevant influencing factors, is not required.

2. Standard measurement concept

This method monitors energy consumption, external and/or internal factors that influence energy consumption (for example, weather, number of employees), as well as outputs (for example, produced goods). The baseline period has a default duration

¹ Since 2023: German Federal Ministry for Economic Affairs and Climate Action (BMWK)

of one year but can be shorter if the applicant can prove a good correlation of the data afterwards. Funding recipients are expected to pursue a process based on ISO 50006², whereby they meter all relevant variables during an appropriate time period, develop a statistical model (a multivariate data analysis showing the relationship between the variables), implement the energy saving measure, and compare the energy demand calculated in the model with the metered energy demand.

3. Alternative measurement concept

Applied if the standard method is not appropriate, for example for individual subsystems (e.g., a compressed air system). The rules of the standard system are also valid for the alternative system, insofar as it makes sense to apply them. The deviations from the standard measurement concept should be described.

Overall, the concept for the measurement methods did not change throughout the funding period. Details have been changed to take into account developments occurring in the first projects.

Experiences

Projects have been funded in a variety of settings, including offices and retail stores, hospitals, swimming pools, hotels, restaurants and industrial sites (IEA, 2019). This includes providing individualised energy advice to consumers in real-time, automatic "energy-saving assistants" or innovative building and heating technologies that integrate weather forecasts and leverage some form of artificial intelligence, e.g., self-learning algorithms (IEA, 2019). Further evaluations are needed to understand its impact on the development of a digital energy services markets and pay-for-performance scheme.

The variety of the projects submitted has created complexity in managing the programme, from project selection to energy savings verification. The process was continuously streamlined including, for example, by updating funding documents and requirements (IEA, 2019).

Further readings

Bundesamt für Wirtschaft und Ausfuhrkontrolle. (n.d.). [Bundesförderung für das Pilotprogramm Einsparzähler \(bis 30.06.2021\)](#). Webpage

Bundesamt für Wirtschaft und Ausfuhrkontrolle. (2022). [Technisches Merkblatt. Bundesförderung für das Pilotprogramm Einsparzähler](#)

² ISO 50006:2023. [Energy management systems — Evaluating energy performance using energy performance indicators and energy baselines](#).

Bundesministerium für Wirtschaft und Energie. (2021). [Änderung der Förderbekanntmachung „Pilotprogramme Einsparzähler“](#). Vom 12. Mai 2021

International Energy Agency. (2019). [Case Study: Energy Savings Meter Programme in Germany](#).

Weiß, U., Werle, M., Pehnt, M., Blohm, M., Chmella, T., Becker, M., Geissler, J., Grein, A., & Milojkovic, F. (2017). [Funding measured energy savings: first findings on performance-based “Energy Savings Meter” funding scheme](#). ECEEE 2017 Summer Study.

Werle, M., Ernst, C., Weiß, U., & Hermann, L. (2019). [Metering energy savings: insights from the “Energy Savings Meter” funding scheme](#). ECEEE 2019 Summer Study.

Stakeholder interview

Interview with **Dr. Stefan Weitemeyer**, expert of the energy savings meter scheme at Germany’s Federal Office for Energy Efficiency at BAFA.

- **The International Energy Agency says that it was difficult to establish a routine evaluation process and that a diverse range of expertise was required to evaluate the energy savings against different baselines. Does that summarise the difficulties related to measurement met during the pilot?**

As the Energy Savings Meter is an open-technology funding programme and the valid proof of savings is an important component of the programme, a comparatively intensive technical review was indeed carried out.

- **How much resources were needed for the public authority to assess the projects?**

There is no exact information on how many resources were needed to evaluate new submissions as this is only one part of the work done by the public authority in the whole funding scheme.

- **One of the objectives of the scheme was to support the development of new types of digital energy services markets and pay-for-performance models. Have such approaches continued after the end of the energy savings meter scheme?**

Many of the projects funded continued after the funding period as regular businesses. Furthermore, further approaches have been established in the meantime without funding.

- **Did you see between 2016 and now some developments in the methods, tools, and capacities of energy services companies to make use of measurements?**

The methods, tools and capacities have changed to some extent taking into account recent developments. Yet they still vary significantly and range from Excel-based calculations to using artificial intelligence.

- **What were the main reasons why the energy savings meter scheme was stopped?**

The decision to stop the funding scheme is the responsibility of the Federal Ministry for Economic Affairs and Climate Action (Bundesministerium für Wirtschaft und Klimaschutz).

- **According to you, what would be the main added value of the use of measured data?**

The data provides proof that the development being promoted has actually led to energy savings. Furthermore, the data can also be used in the future as reference data for other projects or as input data for other services.