

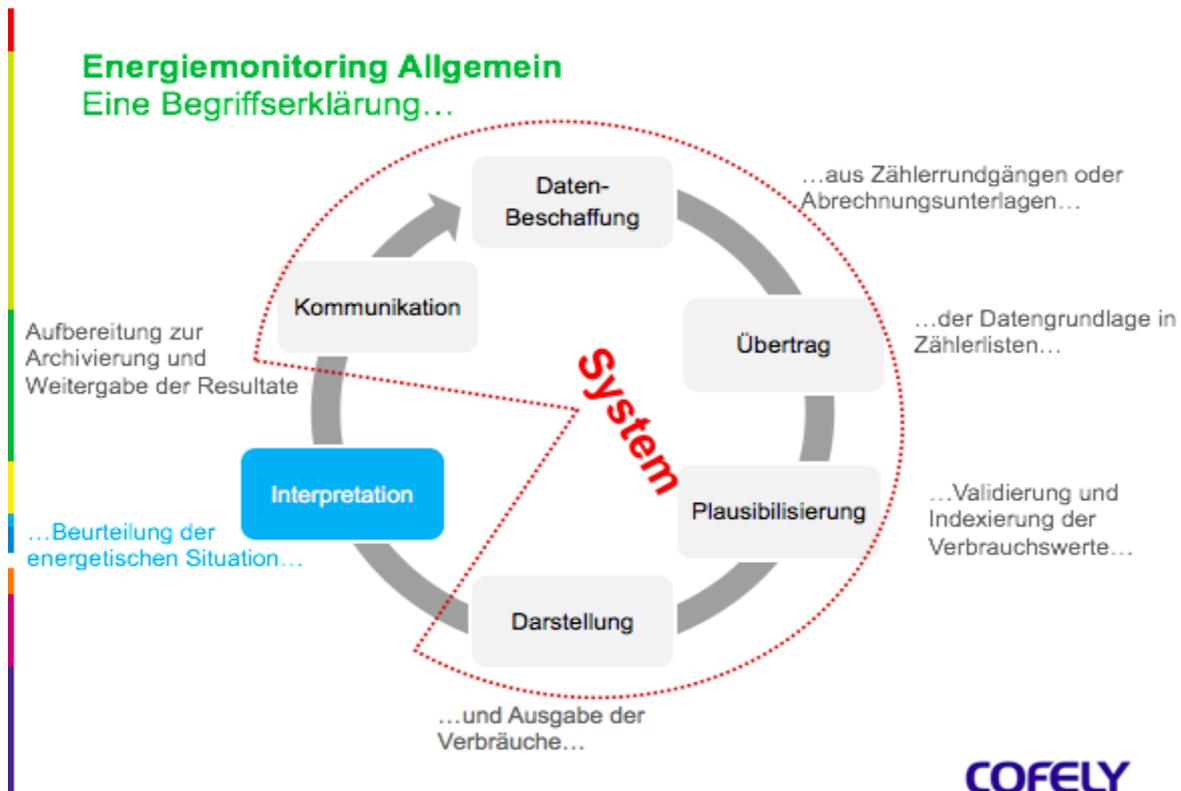
Energy consumption monitoring

Introducing an energy consumption monitoring system as an energy-efficiency measure

Background

Energy consumption monitoring systems help to keep the energy consumption of buildings and facilities down in the long term. These systems have the advantage that consumption is continuously in view, so a prompt response to any irregularities is perfectly possible. As a result, energy consumption and the associated costs can be permanently reduced. Below we give details of benefits, types of potential user, system components and typical costs.

Basics of energy consumption monitoring



Energy consumption monitoring is far more than just data acquisition (energy accounting); from the data concrete actions are derived, to make improvements possible.

In general monitoring thus refers to the **permanent** and systematic **recording, supervision** and **control** of processes.

Accordingly, in **energy consumption monitoring** specific **flows of energy** within a bounded system (a building) are recorded, supervised and controlled.

What are the benefits?

Energy consumption monitoring systems help the user to improve buildings' energy efficiency:

- Transparency in energy consumption
- Identify energy-saving potential
- Reduce energy consumption
- Cut energy expenditure

Energy efficiency targets for buildings

- Complying with Energy Performance of Buildings Directive 2010/31/EU
- Achieving the European Union's 20/20/20 targets, namely:
 1. Reducing greenhouse gas emissions by 20 % (vis-à-vis 1990 levels)
 2. 20 % of the energy consumed in the EU to come from renewable sources
 3. Improving energy efficiency by 20 %

Users

- Owners and managers of commercial and office buildings
- Owners and managers of public buildings
- Commercial and industrial enterprises

System components

To obtain valid data, one needs first to define what to measure where, and then to install suitable instrumentation:

- Meters and sensors (hardware) to detect
 - a. energy consumption levels
 - b. flowrates and temperatures
 - c. switching states
 - d. comfort values (temperature, humidity, carbon-dioxide concentration, ...)
- Data logger / data concentrator
- Internet and/or network link
- Software / visual display system / evaluation arrangements

Typical costs of energy consumption monitoring

Currently one can take the typical costs given below as a starting-point for estimating costs (varying with product and quality):

- Heat meter: ~ € 2,500.- to € 3,000.- excl. VAT
- Cooling meter: ~ € 2,500.- to € 3,000.- excl. VAT
- Power meter: ~ € 400.- excl. VAT
- Data concentrator and software: from about € 1,000.- excl. VAT

What are future needs?

- Grants as economic stimulus
- Close ties to (building) certification, klimaaktiv, etc.
- Building public awareness / spotlighting benefits
- Possibly amendments to EnEffG
- Public buildings as trailblazers (as in Lower Austria)
- Pilot projects / beacon projects

Further information

- Presentation “Energiemonitoring in Österreich” (in German)
This presentation, drawn up as part of the SEFIPA project, provides an introduction to the subject.

- Webinar presentation “Energiemonitoring – Wozu” (in German)

[Webinar material](#)

[Webinar recording](#)

- Website of the iSERV project: <http://www.iservcmb.info/>

The website lists any number of examples with details of measures taken and savings achieved, plus benchmark values.

- [Energiemanagement on the klimaaktiv Website](#) (in German)

Here you can find background information, plus tools for improving firms’ energy efficiency (in German).

- www.energymanagement.at

This website provides sectoral energy indicators and benchmark values (in German).

The Platform will be glad to provide further information on this subject:

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Platform / SEFIPA team

Responsibility for the Platform lies with ÖGUT (Austrian Society for Environment and Technology) and Energy Changes Projektentwicklung GmbH, who share the goal of developing pioneering facilities (financial instruments, regulatory measures and information campaigns) together with policymakers, so as to stimulate additional investment in sustainable energy systems in Austria. As part of this project a special crowd-investing platform for sustainable energy systems (www.crowd4energy.com) has been set up as a Horizon 2020 project; it was launched in February 2016, to run for three years.



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