

Energy data – the key to tracking down savings potential

A faulty controller, a change to a setting or a major leak in the compressed air system: these are everyday occurrences that often cause increased energy consumption. If the error or fault is only discovered late in the day, the costs can quickly mount up.

Action

Evaluate the operational and consumption data recorded by your building management system at regular intervals to avoid “energy leaks”.

Requirement

Your building has a building management system.

If you track down possible potential for saving energy at an early stage, you will easily save 5 to 10 percent of your energy costs.

What to do

1. Compare energy consumption data

Regularly compare the recorded energy consumption data with the data for the previous period (see “Please note”). If consumption increases abruptly for no obvious reason, analyse the cause.

2. Analyse the recorded data

Each week or month, compare the other recorded data (statistics and trend curves) with the data for the previous period. If there are any irregularities, investigate their cause. (Also see page 2: Reasons for discrepancies)

3. Check the displayed data

Check the displayed values at regular intervals

- Are the current values (temperatures, pressures, etc.) plausible?
- Are the setpoints (e.g. temperatures) maintained?



Costs – effort

Your own labour: approx. 1 to 3 working days per year, depending on intensity

Please note!

- Like all other data, energy consumption data should be compared to the previous year's figures at least once a year or, better, every quarter (for small businesses), once a month (medium-sized businesses) or even once a week.
- The values should be plausibility-checked both in summer and in winter.

Additional explanations

Purchased at high cost – but inadequately used

Quite often, costly building management systems are only used to generate alarms in case of mal-functions. Of course, alarms are important and they are the basis for short response times. But modern building management systems can do far more than this.

Thanks to graphic displays, they allow targeted monitoring and optimisation of complex technical systems and control processes. This eliminates the requirement for specialists to measure temperatures, consumption figures or system pressures in a plant. Also, for example, reduced temperatures at night and outside of usage times can be monitored with no need for the responsible individual to be on the premises.

Some typical “mistakes”

“Operating with no benefit” is the most obvious mistake that can be identified in many systems by evaluating the data from the building management system. This category includes, for instance, systems and machines that operate at night although the entire workforce is at home and the plant should be inactive: air compressors are a classic example of this.

Other frequent mistakes:

- Rooms are heated and cooled at the same time
- Heating pumps operate in summer
- The ventilation system cools during winter
- The heat recovery unit doesn't work
- No night-time temperature reduction is set
- Free cooling is installed but is not operating

Possible reasons for discrepancies

Energy consumption discrepancies that are revealed by the data from the building management system can have various causes and do not always have to indicate a problem:

- Changes to production volumes
- Conversions, extensions or demolitions
- Increased or reduced employee numbers
- Different numbers of heating degree days depending on climate conditions
- Incorrectly calibrated probes/sensors
- The building management system does not display the correct values
- Changes to operating times or settings such as temperatures, pressures, etc.
- Refurbishment or extension of supply systems such as heating, refrigeration/cooling, hot water, compressed air or ventilation (e.g. installation of new chilled beams).

Additional information

- [Energy efficiency in functional buildings, Building Network Initiative \(GNI\)](#)