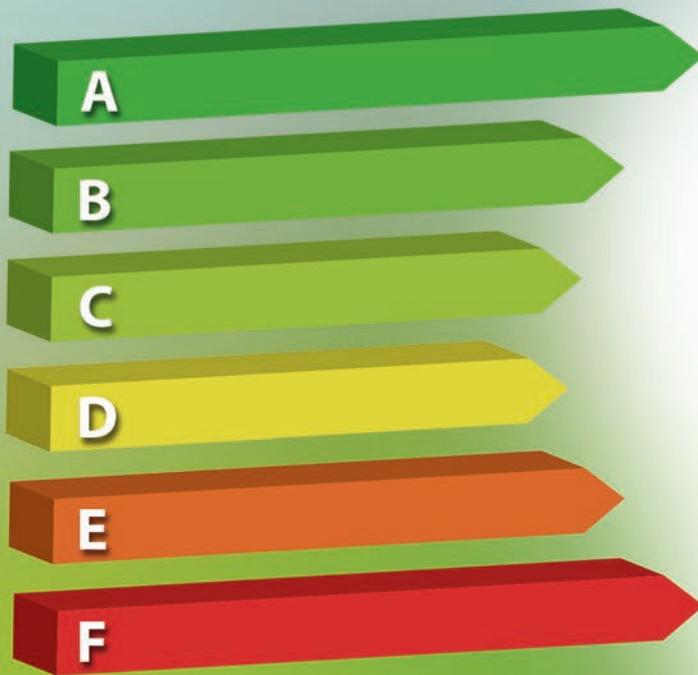


Energiemanagement Ressourceneffizienz Monitoring & Controlling



**Resource- and energy management
with VBASE HMI / SCADA.**

Resource and energy management data based on the automation platform VBASE by VISAM.

Rising energy and raw material costs, as well as the associated environmental aspects are reason enough for many companies to optimize their processes in terms of energy and resource efficient methods.

Especially for small and medium-sized enterprises (SMEs), appropriate monitoring, for cost reasons, can not simply be implemented by additional staff. Here, it is important to have a cross-process monitoring, largely automated and thus to operate very effectively. With the aid of conventional sensors and measurement methods, but also interfaces with existing plant control systems, it is often very easy to identify the main consumption parameters in a timely manner and at reasonable cost .

In such an environment, the automation software VBASE forms the platform to capture, store and visualize all the necessary information. Based on the key figures obtained in this way the system can be expanded to a resource and energy controlling system. VBASE serves as a central communication and monitoring platform and does its job decently as a „black box“ in the background. If necessary VBASE can visualize all data locally in real time and feed a web portal for mobile devices (eg. smart phone, tablet PC) with key figures .

Energy management system (EnMS)

Energy management includes the planning and operation of power production and consumption units. The goals are resource conservation, climate protection and the reduction of costs, while ensuring the energy needs of the users.



Top compensation of energy and electricity tax



The redemption of the energy and electricity tax enables manufacturing companies to adopt, a large part of the current tax payable or to receive a refund of the current tax paid.

only claim the top compensation if you they have a DIN EN ISO 50001 certified EnMS.

Initially, for small and medium-sized enterprises (SMEs) it is sufficient evidence of „an alternative system to improve energy efficiency,“ which meets the requirements of DIN 16247-1 (energy audit standard).

In order to take the top compensation in the energy and electricity tax, companies need in the future, among other things prove a certified EnMS or similar measures. After the expiry of the transitional period (2013-2014), companies can

Certified energy management according to DIN EN ISO 50001

To be ready for certification a company or an organization shall establish and document an Energy Management System (EnMS) according to DIN EN ISO 50001. The energy management standard DIN EN ISO 50001 specifies concrete demands on the design of a systematic EnMS.

The ISO 50001 can be applied to organizations of all sizes and industries. A EnMS according to ISO 50001 can be independent of other, existing management systems implemented or integrated into existing management systems.



Promotion of energy management systems and software



The German federal government has launched an energy efficiency fund to promote the rational and economical use of energy. The promotion of energy management systems is provided in the context of this. The framework for the promotion are summarized in a draft directive from 18.07.2012.

Among others, software that meet the requirements of DIN EN ISO 50001 is also promoted. Grant applications are processed by the Federal Office of Economics and Export Control (BAFA). The fun-

ding subsidizes the initial certification of an energy management system according to DIN EN ISO 50001 and an energy controlling, and the acquisition of metering and energy management software, which meet the requirements of DIN EN ISO 50001 .

The Federal Office of Economics and Export Control already analysed our software to the requirements of DIN EN ISO 50001 and classified VBASE for government support of energy management systems as eligible. A list of eligible energy management software is available for download on the website of the ACFA .

Energy monitoring

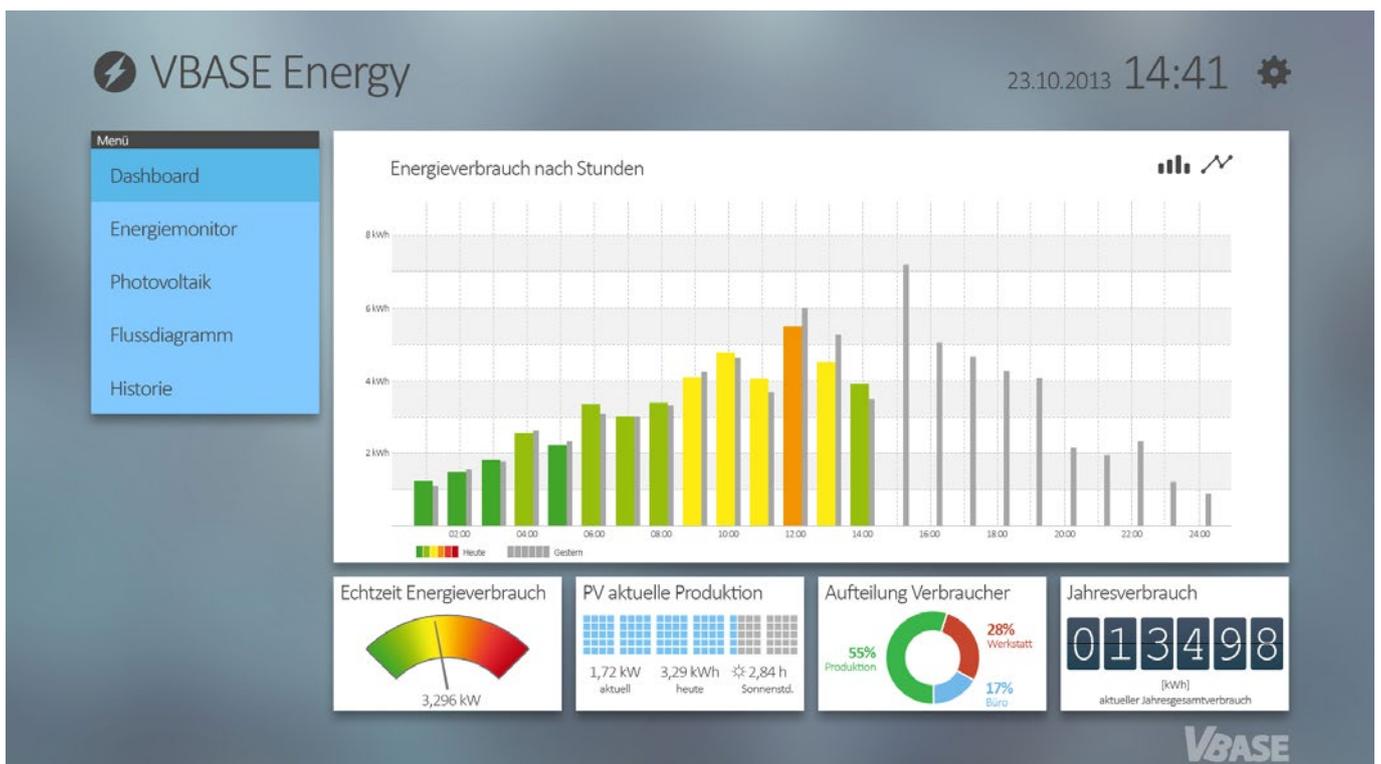
Permanent capturing, visualizing and analyzing the actual energy related consumption.

The first and most important step to a successful energy management system is the detailed recording of the actual actual consumption, an analysis of the potential savings, as well as permanent and continuous monitoring of the energy consumption or audit against established limiting values. The difficulty here is that energy consumers in buildings and businesses are usually very heterogeneous „grown“ represented structures. Each plant or each region is managed by different, autonomous control systems.

Due to the high degree of connectivity (connectivity to a variety of different systems) and the openness of the system it

is possible to automatically capture, visualize and record data from a wide variety of plants, trades and energy consumers with VBASE HMI/SCADA. In addition to energy consumption, it can also record the operating status, dependencies and the workload and integrate the values into the analysis.

In the optimal case, the recorded data is passed directly to the database server for archiving and is so available for evaluation from higher-level systems at any time.



Dashboard of the VBASE energy monitoring (Example)

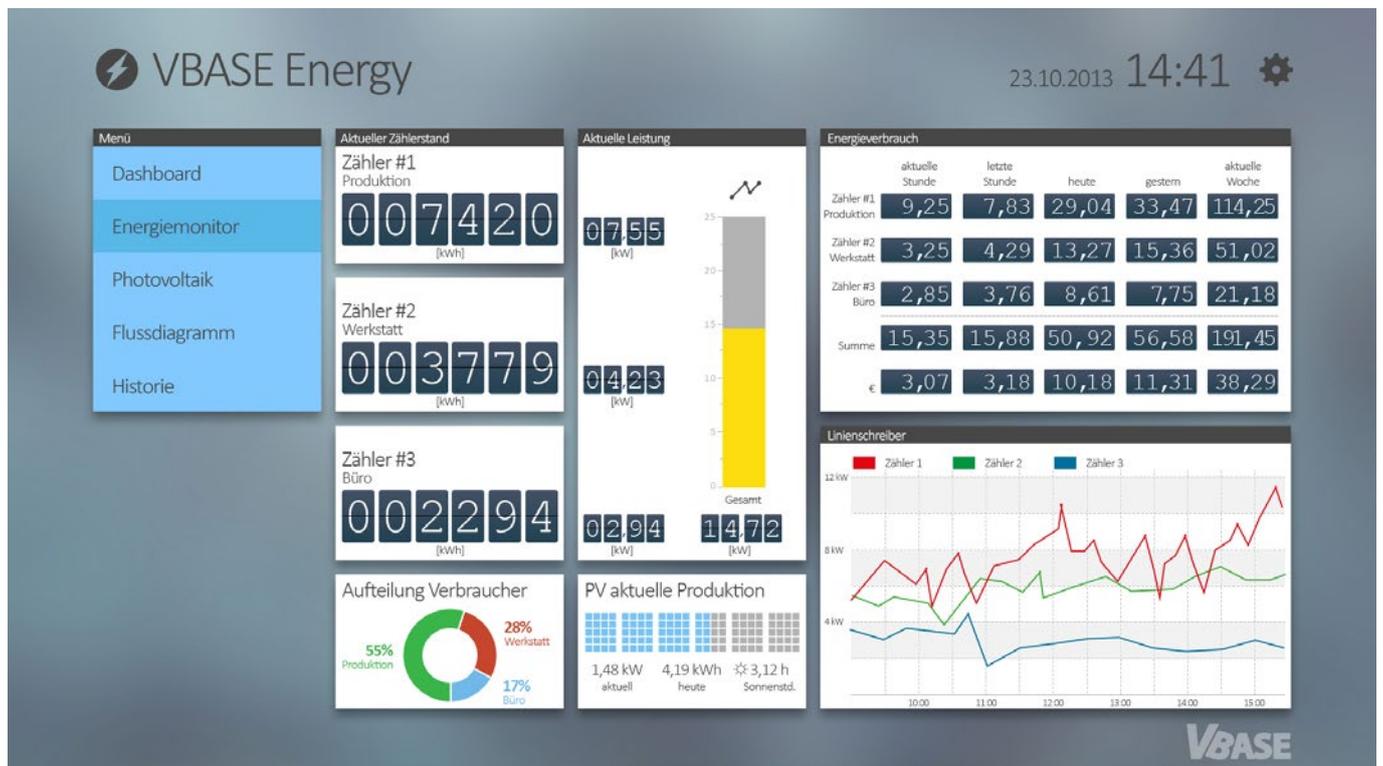
Based on the obtained information, a specific energy management for any manufacturing or building complex can be operated very efficiently. The data of self-generated energy (eg. from the PV system, heat pumps , etc.) can of course also be integrated into the energy monitoring and are contrasted and compared with the consumption.

The detection of the consumption of additional resources, such as of water, is also possible and provides further opportunities to manage the use of resources .

In addition to the local and / or central recording and visualization all the information can be displayed on mobile devices (PC, smartphone, smart TV). By scanning QR codes,

that are installed in certain areas, specific plant data can be directly visualized. The system alerts the appropriate personnel or department by e-mail or SMS messages when specific values are exceeded.

In all cases, important dependencies must be taken into account in addition to the recording of consumption. For example, if we analyze, the consumption of heat generation in buildings, it is important to put these consumption values into proportion with outside temperature.



Energy monitoring with VBASE HMI / SCADA (Example)

Resource / Energy Cost

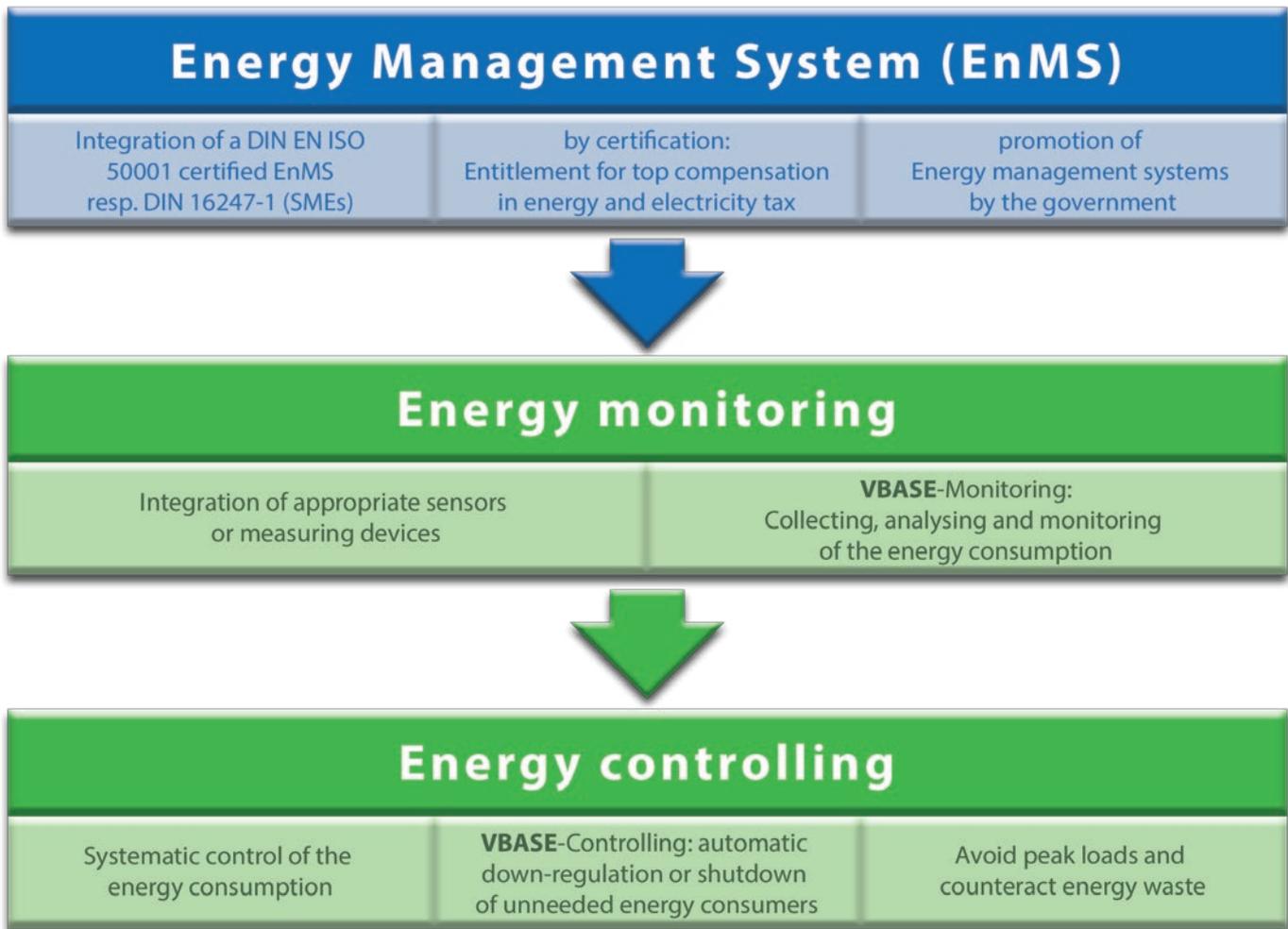
Automatic method to control and reduce the energy consumption. Here unneeded energy consumers are automatically turned down or off and constantly monitored for limit violations.

The obtained indicators from the VBASE monitoring (eg. current consumption) can be automatically transferred to the energy consumers to control them by demand and thereby operate energy efficient. If the direct control of the systems is not possible, the VBASE controlling can make use of downstreamed systems to intervene directly regulating or controlling. Peak loads can be avoided by starting particularly energy-intensive consumers (plants) or operate at maximum performance only at certain times. The application of

production or work schedules can regulate lighting, heating, etc. accurately by timed.

Self-generated energy (eg from the PV system) can be used more extensively with energy control, because all the information about the currently generated power are available at any time, as well as consumption. Energy storage can also be incorporated and thus operated with a very high efficiency.

On request, email or SMS messages can automatically be sent to different people when limits are exceeded.



Examples of typical consumer in buildings

Heating, hot water, air conditioning, ventilation, lighting.

Examples of typical consumer in production plants

Virtually all machinery and equipment, compressors (air compression), steam and process heat generation, etc.

Examples from the practice

In the simplest case, for example, the operating times of the burner of a heating system recorded. The integration of respective sensors or measuring devices is usually possible with little effort, even in older heating systems. In addition to the logging of the runtime, VBASE can, for example, detect the fuel consumption (eg oil, gas quantities). If you compare the actual values with the desired values, there are often differences that can be optimized .

Electronic electricity meters can often uncover waste of energy in the lighting of production halls or business premises very quickly. They can be eliminated by the exchange of light sources (eg. efficient LED lights) and an intelligent, demand-driven lighting control can be integrated.

High energy consumption for the production of steam or compressed air often have their origin in leaks in the power distribution (mains system). Compressed air is considered

the most expensive form of energy. Therefore, big saving potential lies in the compress air system of many companies.

In addition, it is possible to curb generation plants in the processes as needed to improve the optimization by demand. In all cases, the introduction of a resource and energy monitoring system already leads to drastic savings that can be exploited by automated energy controlling.

Customers that are already using VisAM or VBASE as HMI or control system in their production, can seamlessly expand their plant with an energy monitoring and energy controlling system.

VBASE HMI / SCADA



VBASE - what is it and where it can be used?

VBASE HMI / SCADA is an industry-independent and highly flexible visualization and control system. VBASE is freely programmable and can be used for the cross-trade automation of lighting, heating, air conditioning, shading etc. The use cases of VBASE are almost unlimited. Wherever processes are visualized, data is recorded and control commands must be exchanged with remote systems, VBASE is at home.



Open for your technology.

Open interface standards (eg OPC, TCP/IP) allow vertical communication from the fieldbus to the office area. Due to the modular structure of the system we can offer fast and cost-effective software customization and driver development.



VBASE editor. Integrated development environment for your automation projects.

The VBASE Editor comes free with all our products and is the consistent and integrated development environment for automation projects with VISAM Touch Panels and the VBASE desktop runtimes. The VBASE Editor is optimized for easy entry and equipped with all the functions for the visualization and control of your processes.



Compatible with approx. 200 and field bus- and remote systems.

VBASE is independent of individual components and manufacturers. Rather, it uses a large driver pool for the communication with all common protocols, field buses and remote systems (including KNX, Modbus, M-Bus and PLC systems). The VBASE drivers are constantly updated and expanded. Currently VBASE supports about 200 different systems!



VBASE Web Remote.
Universal HMI interface for mobile devices.

The VBASE Web Remote is a universal HMI interface on HTML5 basis. It enables remote access for smartphones, tablet PC's and all devices with a compatible browser. VBASE Web Remote generates the necessary HTML pages automatically and can be enabled on a project basis.

Additional functions & features:

- Creely configurable user interface (UI)
- Control of scenes (scenarios)
- Programmable timing function
- Energy management data according to DIN ISO 50001
- Recording, analysis and management of consumption values and operating times
- Support for multi-touch and gesture control
- Menu driven database interface for distributed building automation and centralized data storage
- Gateway for the coupling of remote systems from different manufacturers and with different interfaces

More information: www.visam.com/vbase

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