

neuberger.

# product

Information about energy management according to ISO 50001



Automatic. Efficient.

**ProEnergie** - energy management according to DIN EN ISO 50001.

# Active energy management with ProEnergie

## Energy saving with ProEnergie, the energy management system for the energy manager and certification of green buildings according to LEED / DGNB

The building automation systems are the key components for the acquisition of measured values and data in energy management system.

With the software **ProEnergie**, the energy manager receives the tool for visualizing, recording, diagnosing, monitoring and optimizing energy consumption.

The results form the basis for determining further optimisations and preventive measures.

The implementation of an energy data system is the organisational basis for active energy management. This is the contribution to environmental protection and reduction of energy costs by saving energy.

The standard DIN EN ISO 50001 is a guideline for the implementation of an energy management system. It is based on the elements of energy policy and energy planning as well as the corresponding implementation.

Only through monitoring and diagnosis can important knowledge be gained to implement measures for reduction of energy consumption to be able to initiate.

**ProEnergie** is the tool that enables monitoring and diagnosis. The necessary data and measured values are provided by building automation systems.

The same applies to the implementation of optimization and prevention measures. The data and results provided by **ProEnergie** can be used to define and implement new targets for energy planning during internal audits and management reviews, which in turn lead to new energy and lead to cost savings.

This initiates the control loop for active energy management, which represents a continuous improvement process.

The Neuberger energy management system **ProEnergie** has numerous applications:

Industry and  
Research

Energy  
Supply

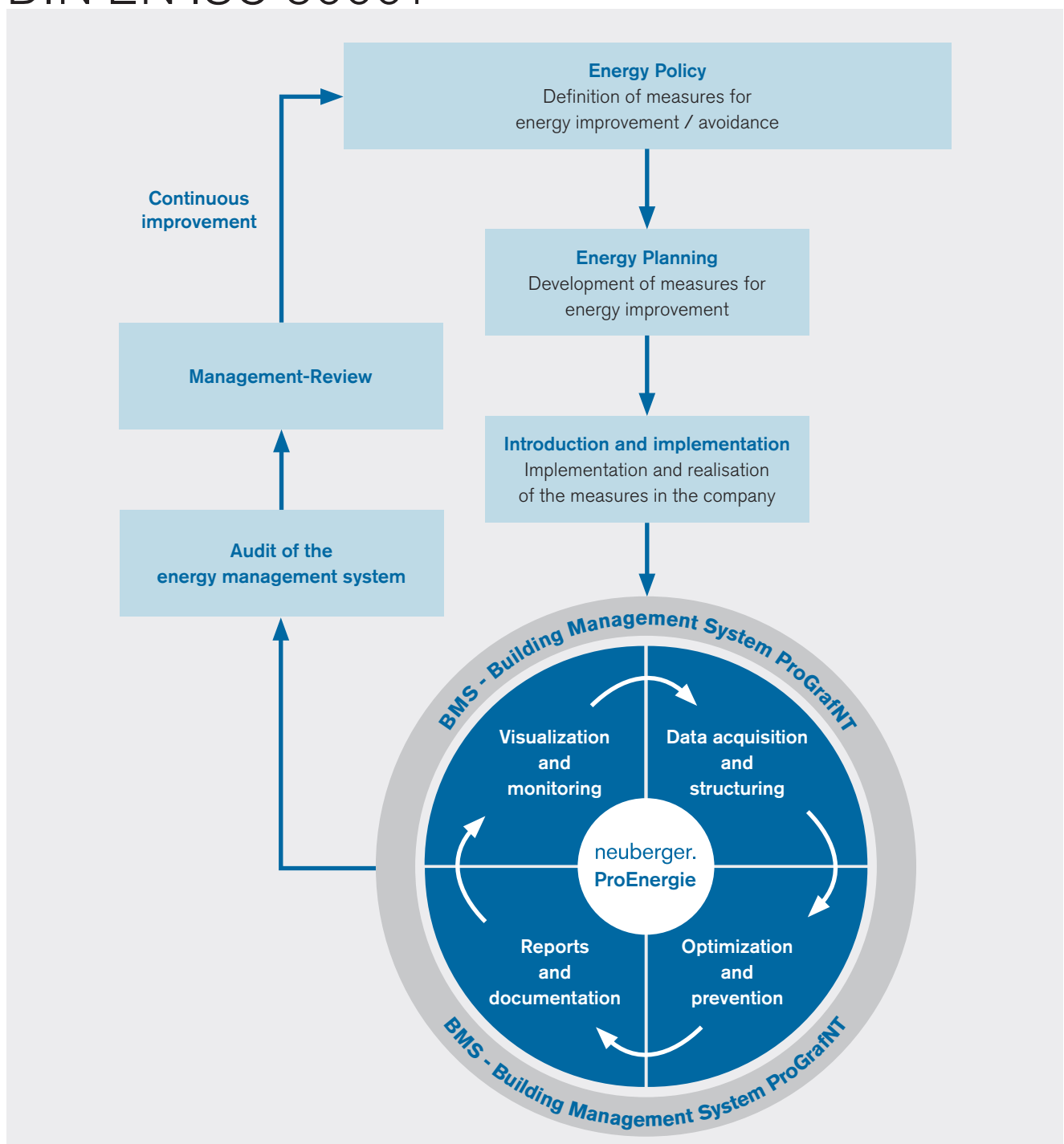
Healthcare and  
Pharmacies

Public  
Buildings

Universities  
and Schools

Office Buildings  
and Shopping  
Centres

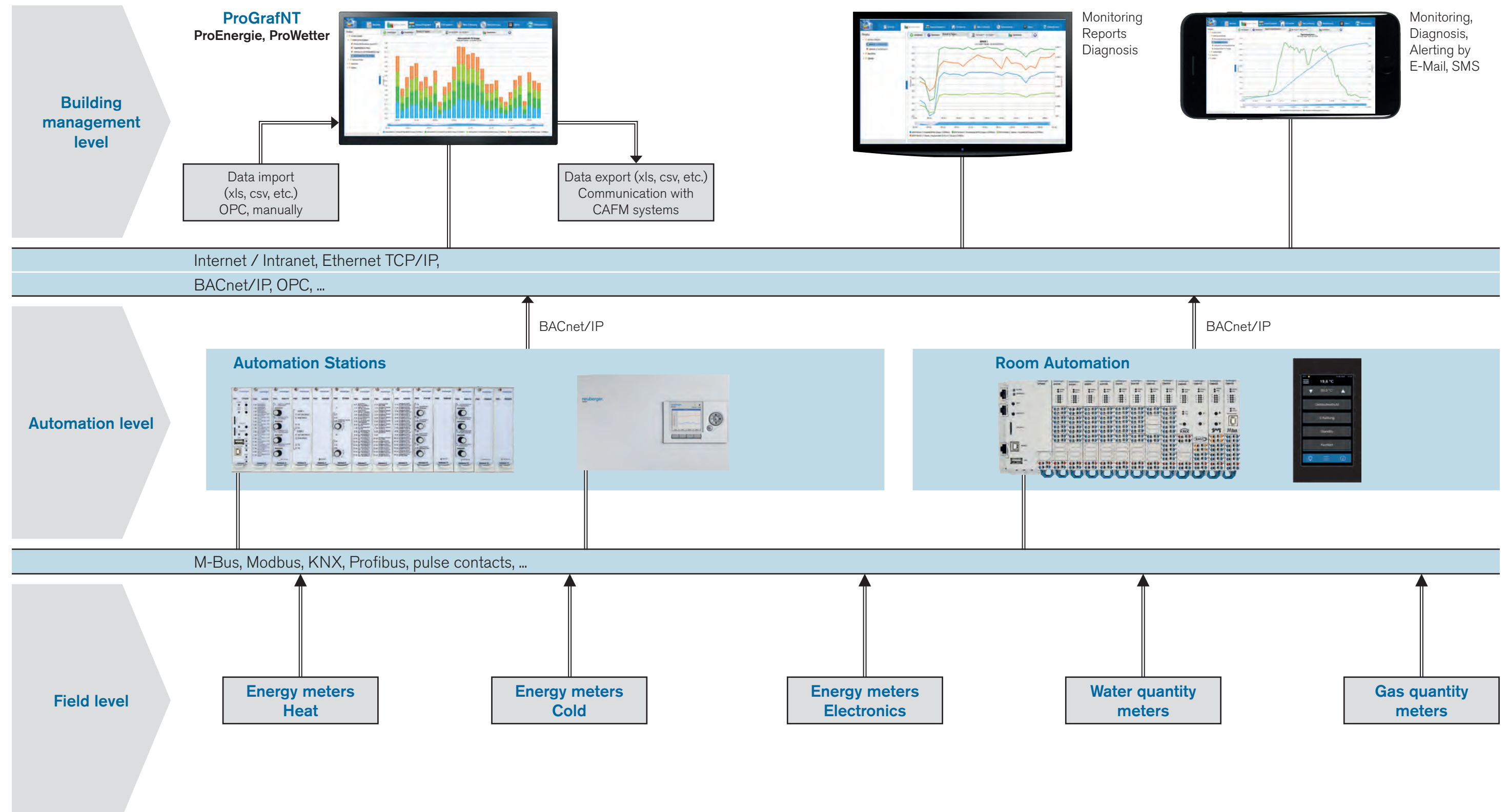
## Energy management according to DIN EN ISO 50001

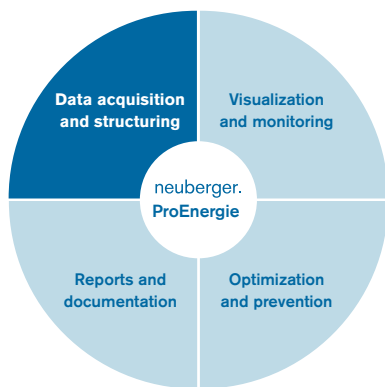


Structured information for energy managers. **Automatic. Solid.**

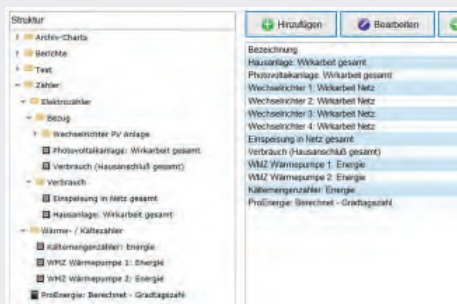


## Energy management with systems from Neuberger

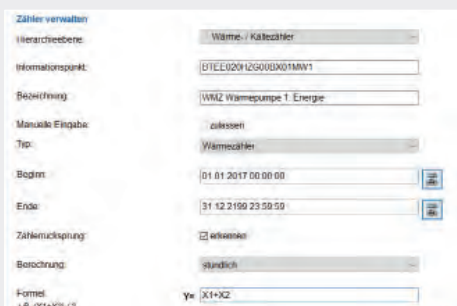




# Data acquisition and structuring



Display of the meters in a clear and freely definable tree structure (left)..



Energy values and other parameters can be edited as virtual meters.



Manual recording of measuring points.

## Data acquisition

The meters available on the building control system are recorded in **ProEnergie** and can be clearly displayed in a freely definable structure (e.g. by property or trade). Jumps in the meter reading, e.g. when changing the meter, can be detected automatically or entered manually. These corrections are taken into account when creating reports. In the case that not all meters are available on the building management system, data can be imported from external systems via CSV file or entered manually.

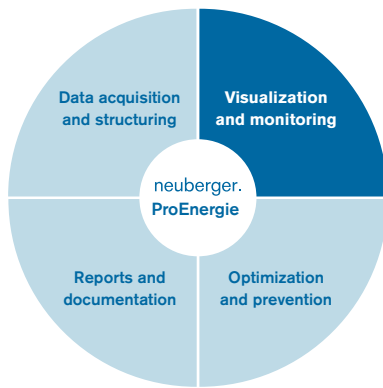
## Meter / measuring point configuration

By using so-called „virtual meters“, energy values or other parameters can be calculated based on existing data and mathematical formulas. Even a change of the measuring device at the measuring point and the associated value jump is recorded by **ProEnergie** and only taken into account and automatically corrected after confirmation by the energy manager.

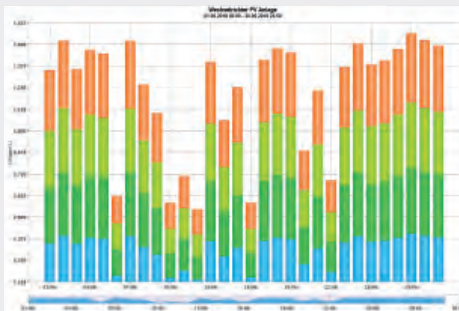
## Manual recording of measuring points

Data from meters that are not connected to the BMS control system or factors required for calculations (also retroactively in the past) can be entered quickly and easily by hand.

Controlling by networking all energy consumers / producers. **Automatic. Continuous.**



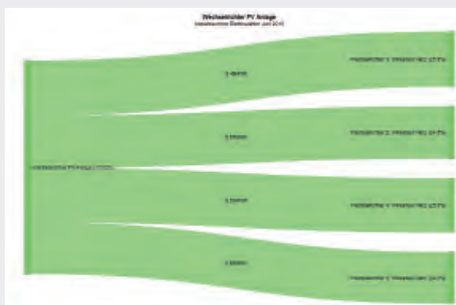
## Visualization and monitoring



Visualization of the daily effective work of inverters of a photovoltaic plant during the course of a month.



Presentation of the outside temperature curve (blue) and the resulting daily temperature figure (green).



Visualization of energy flows by Sankey diagrams.

### Energy Monitoring

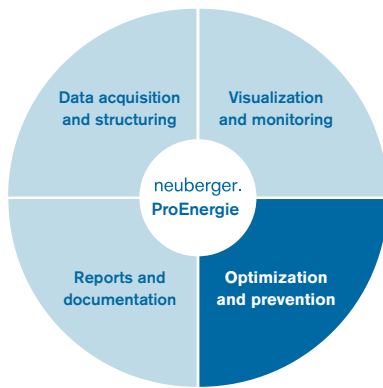
**ProEnergie** ensures transparency of consumption situations and makes energy monitoring to an indispensable core element of the energy management system. ProEnergie provides energy managers a tool, that generates energy reports and energy key figures automatically and on request. This is the only way to identify long-term savings potentials and realize energy efficiency improvements.

### Surveillance

In **ProEnergie**, data and measured values are recorded that are required for monitoring energy consumption and in the associated plants. The data are supplied by the building automation systems, consumption meters and, if required, external meters that can be integrated via open and neutral interfaces.

### Energy flow diagrams / Sankey diagrams

For the representation of operational energy consumption clear energy flow diagrams can be clearly represented and displayed with **ProEnergie**. Sankey diagrams, for example, reveal large energy consumers and thus illustrate the energy flows in a company.

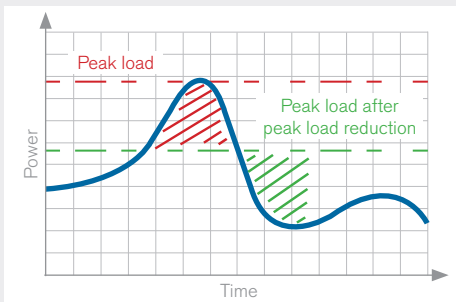


## Optimization and prevention



### Effective peak load management

Load management means taking measures to optimise energy consumption. In doing so, the load profile (consumption behaviour) is harmonised and made uniform. From the results of **ProEnergie**, optimisation measures can be derived to limit existing load peaks and to ensure a uniform possible power consumption. Through a reduction of the maximum output, considerable cost savings can be achieved.



### Smart Metering

With the knowledge of **ProEnergie**, consumptions can be verified and assigned to consumers. Through this so called usage profiles, the Neuberger **software option E-MAX** can be used to intervene and regulate. Thus Smart Metering is a means of economical consumption of energy and a simultaneous increase in efficiency in energy supply.



### Predictive maintenance

Professional, reliable and efficient Maintenance management (predictive maintenance) saves costs. On the basis of historical as well as current maintenance-relevant data ProEnergie give results to achieve predictive or condition-based maintenance and servicing of plants and machineries. Thus routine or time-based maintenance strategies are from now on a thing of the past.

Energy saving through prevention. **Automatic. Sustainable.**



## Limits of use

The energy management standard DIN EN ISO 50001 demands the definition and determination of key figures and their comparison. With **ProEnergie** you get results that allow a daily and, if desired, automatically evaluation of consumption data. In addition fault messages are sent to the energy manager if freely definable limit values are exceeded or not reached.



## Integration of the weather forecast

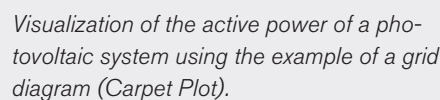
Weather influences and climatic conditions affect the conditions and energy consumptions in buildings. They also have a strong influence in an increase of energy expenditures. The **software option ProWetter** calculate presciently on the basic of the weather forecast the energy consumption and reduces also the costs of energy by providing needs-oriented energy demand.



## Secure subsidies

In the context of promoting energy efficiency and a sustainable energy supply, there are a large number of support programmes from a wide variety of programme initiatives, whether from the EU, the federal government, the states, local authorities or various energy suppliers. With ProEnergie you are choosing a software option that is classified as eligible for funding by the German Federal Office of Economics and Export Control (BAFA).





Gaining knowledge and deriving optimization measures in order to implement energy efficiency improvements in the company is the goal of the energy efficiency program. With **ProEnergie** you get results to compare for example energy performance figures. From these results in turn may optimisation measures to achieve energy efficiency improvements.

The data collected on the host computer and processed by ProEnergie can be summarized in reports and automatically generated at defined times. The reports are available in Excel® file format and can be individually adapted via templates if required. Numerous evaluation tools simplify even difficult mathematical analyses such as the assessment of significance. The reports support energy managers in the certification of buildings according to LEED or DGNB (Green Buildings).

**ProEnergie** offers energy managers numerous possibilities to present energy consumptions. By prefabricated templates, visualizations can be quickly and easily selected from various visualization formats and output possibilities. Column diagrams, line diagrams, step line diagrams, area diagrams or point diagrams are for example available as standard. Energy flows can be presented in significant Sankey diagrams.

## Our approach for your sustainable success

### Hotline and Support

Reliable service at any time and around the clock. Qualified and experienced specialists from Neuberger are personally available for you, because personal contact is a matter of course for us.



Hotline and Support

### Implementation / Operation

Installation, commissioning and introduction of **ProEnergie** in your company. We would be pleased to provide individual instruction in **ProEnergie**, if desired also on your own BMS system and on site. Furthermore we support you in the daily operation.



Operation

### Concept

Development of an individual energy management concept regarding the collection and structuring of data on the basis of your plant and operating data.



Concept

### Success monitoring

In order to monitor and prove the success of energy efficiency measures, we will be glad to support you in monitoring the success of your optimisation measures and in implementing proposals for plant optimisations.



Erfolgskontrolle

### Implementation

Connection of the field level and/or import of historical data or external systems by experienced and qualified personnel. Customer-specific programming of monitoring and visualisation options if required.



Implementation

### Target definition

Joint coordination of your defined energy management goals and their realization possibilities with the Neuberger energy management system **ProEnergie**.



Target definition

Green Buildings - Building certification according to LEED / DGNB are secured with the use of ProEnergie.

Everything from a single source. **Automatic. Neuberger.**

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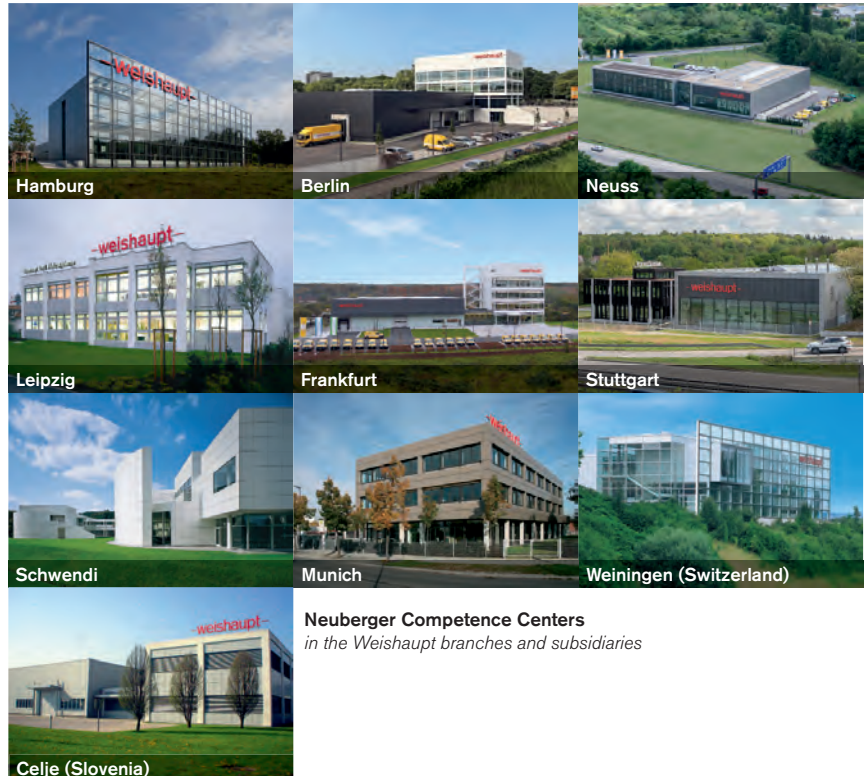
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## One stop solution

The Neuberger company, founded in 1968, is a highly qualified supplier of products and solutions in the building automation and pharmaceutical industry.

Since 1995 Neuberger is a part of the Weishaupt Group and delivers everything from one source: planning, products, software, installation, commissioning, maintenance and service support 24 hours / 7 days.

Neuberger Gebäudeautomation provides highest efficiency to enable connection of all technical systems.



Headquarters in Rothenburg ob der Tauber, Germany