Industrial Energy Management

Reduce Energy Costs and Increase Energy Efficiency

Efficio

Berg – die Energieoptimierer®

From the Black Box to Energy Cost Transparency

With the Efficio energy management system, you can continuously identify energy-saving potential in your company and benefit directly from it. You can also significantly reduce your energy consumption and any associated greenhouse gas emissions. At the same time, you can reduce your costs and increase your energy efficiency along the entire value chain. Efficio combines the complete energy and load management process – from strategy to implementation and evaluation – with a single software.

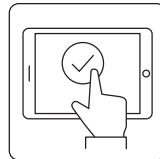## Your Advantages with the Smart Energy Management Software Efficio

+ Full control and transparency down tot he smallest unit of consumption

+ Identification of latent energy guzzlers

+ Determination of energy performance indicators (EnPI)

+ Sofware functionalities of modules can be combined as required

+ Easy implementation via "plug and play" even in existing IT infrastructures

+ Smart energy controlling through flexible reporting and alarm functions

+ Carrying out energy audits according to ISO 50001:2018 standards without spending a lot of time

+ Competitive advantages through "green image": CO_2-neutral and sustainably manufactured products
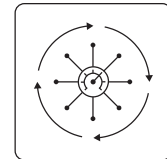
Modern Energy Management with Efficio

Identify Savings Potential

+ Effectively reduce energy costs
+ Identify major energy consumers
+ Significantly reduce CO_2 emissions
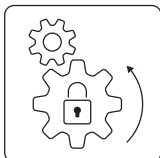+ Continuiusly increase energy efficiency

Smart and Simple Operation

+ Easy and quick to install
+ Operate software intuitively
+ Mulitiple interfaces enable connection to existing systems
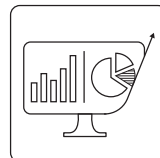+ Commissioning wizard integrates data logger within just five minutes

Integrate PDCA Cycle Easily

+ Management process, data acquisiton and evaluation in one system
+ Map procresses in detail, document them cleanly, and improve them
+ Control energy targets and measures
+ Multiple analysis options such as energy usage analysis

Monitor Production Processes

+ Evaluate processes in terms of energy-using energy-performance indicators (EnPI)
+ Evaluate and optimize the control behavior of technical systems
+ Early intervention and control thanks to alarm function
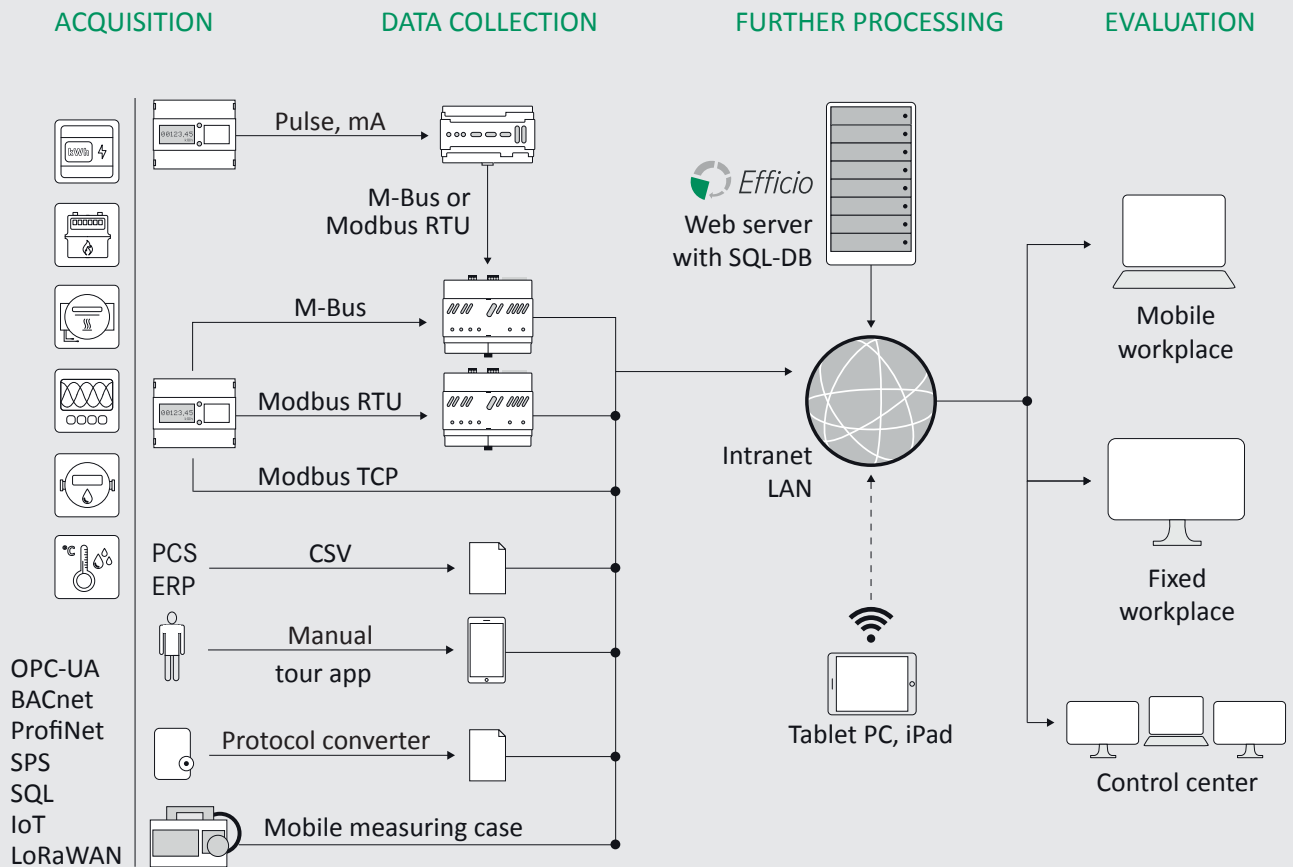
Effectively Analyze and Optimize

+ Achieve "green image" advantages in competition
+ Seamless data capture, also via app
+ Record all consumption data plus process and operating data
+ Sophisticated reporting and alarm functions

Meet Legal Standards
(ISO 50001:2018, ISO 14001, DIN EN 16247-1, and EMAS)

+ Handle audits quickly and worry-free
+ Take advantage of tax benefits
+ Secure funding
+ Save time and personnel resources

ACQUISITION   **DATA COLLECTION**   **FURTHER PROCESSING**   **EVALUATION**

Pulse, mA

M-Bus or
Modbus RTU

M-Bus

Modbus RTU

Modbus TCP

PCS
ERP   CSV

Manual
tour app

Protocol converter

Mobile measuring case

OPC-UA
BACnet
ProfiNet
SPS
SQL
IoT
LoRaWAN

Efficio
Web server
with SQL-DB

Intranet
LAN

Tablet PC, iPad

Mobile
workplace

Fixed
workplace

Control center

Overview Diagram of Energy Data Acquisition

Measure. Capture. Analyze. Optimize. Save.

Our precise measurement and communication technology provides you with valid readings of all consumption data, which you can quickly analyze and clearly visualize in Efficio. In order to achieve a long-term increase in energy efficiency, you can define your organization-wide energy policy in Efficio, set energy targets, create action plans, and measure your target achievement directly using key performance indicators. This simplifies your work with Efficio and saves time.

A Big PLUS with Efficio

+ **Web-based energy management software** enables energy teams to access all data from multiple locations at any time

+ **Energy and environment module** facilitates evaluation of energy saving measures and quickly calculates return on investment (RoI)

+ **Multiclient capability** via freely configurable, individual dashboards with task and deadline overviews

+ **Analysis and reporting capabilities** such as EnPl metrics, Flexreport, energy use and regression analysis, heatmap, and Sankey diagrams
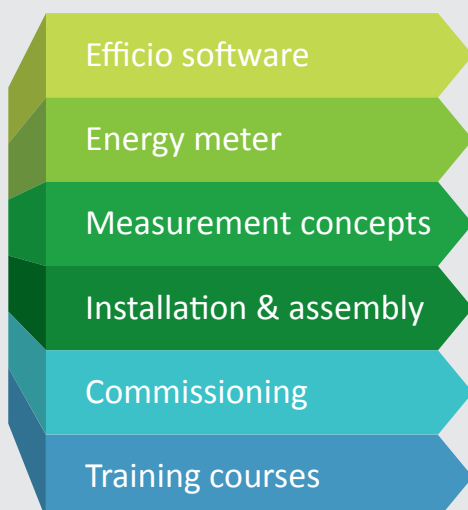
Reduce Energy Consumption and Optimize Energy Procurement

By combining our energy management system Efficio together with our load management system Optimo, you can achieve both effective energy controlling and ideal energy optimization in just one software. Unite your complete energy and load management process – from strategy to implementation and evaluation – with our end-to-end solution.

Efficio

Optimo

Government Funding Programs

Some countries promote energy-saving programs and support energy-intensive companies in the introduction of energy and environmental management systems. Ask your state institutions about funding opportunities and support programs.

- Efficio software
- Energy meter
- Measurement concepts
- Installation & assembly
- Commissioning
- Training courses

Check whether you can benefit from government subsidies
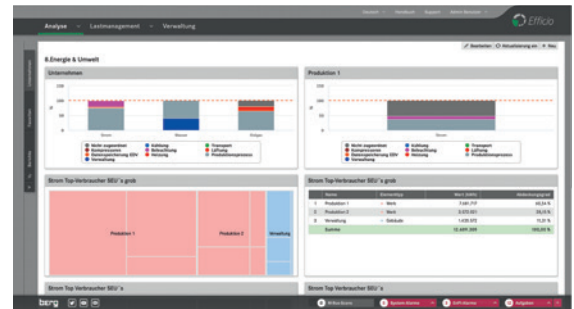
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Functions and Moduls in the Efficio Energy Management System

As one oft the leading software solutions, Efficio already covers all requirements of a professional energy management software in the basic version. For even higher demands, a number of modules are available that significantly support the certification process according to ISO 50001:2018 or EMAS standards and ensure customized energy reporting.
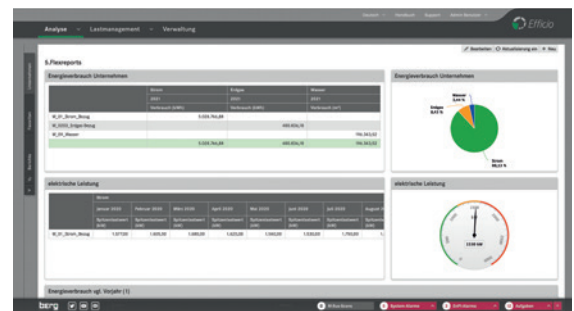
Energy and Environment Module

+ (Re-)certification at the push af a button
+ Actively document and monitor management process
+ Set and achieve strategic, organizational, and
  operational energy goals
+ Present, implement, and evaluate measures
+ Calculate profitability with the help of ROI,
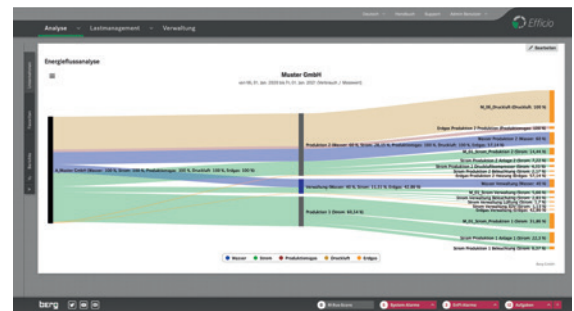 break-even point, and amortization

Flex Reports

+ Individual, tabular, and graphical reporting replaces
  many Excel-style evaluations
+ Create and send report templates automatically/periodically
+ Freely selectable observation periods
+ Display as a line, bar, pie, or speedometer chart
+ Import into other expert systems, e.g. internal controlling

Sankey Diagrams

+ Visualize consumption, CO_2 quantities, and costs from
  feed in/generation to the last consumer
+ Automatically map energy flows from individual
  company topology
+ Visualize bands in quantity-dependent strength
+ Identify priorities for the greatest savings effects
+ Important component of the ISO 50001 reporting system

Scatter Plots with Regression Analysis

+ Immediately recognize conspicuous connections visually
+ Represent coefficient of determination R^2
  according to ISO 50006 standards
+ Analyze dependencies among the measuring points with
  display of xy-plots
+ Incorporate regression analysis into reporting
+ Initiate measures for optimization

Member of VIVAVIS

Key Order Figures(EnPI)

+ Calculate energy quantites and costs for production depending on the order and the plant
+ Analyze relative energy ensumption of individual work steps or jobs and summarize as total energy consumption
+ Monitor order metrics and display in dashboards
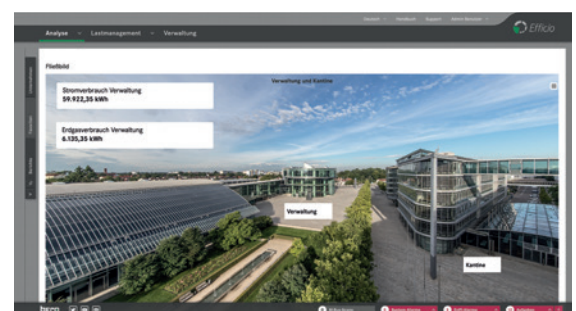+ Combine variable cost blocks for accounting purposes

Condition Analysis

+ Automatically derive, state, and limit ranges from individual measurements and evaluate them separately
+ Analyze standby behavior, plant states, operating states, climate zones
+ Relate production rejects to operating conditions and their occurrence
+ Preventively detect wear and avoid failures

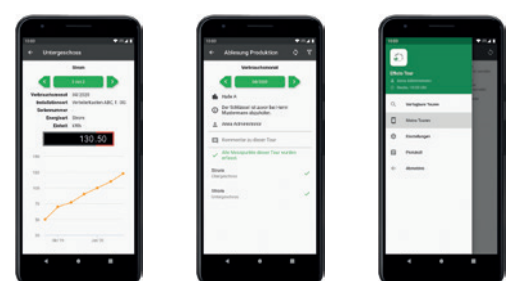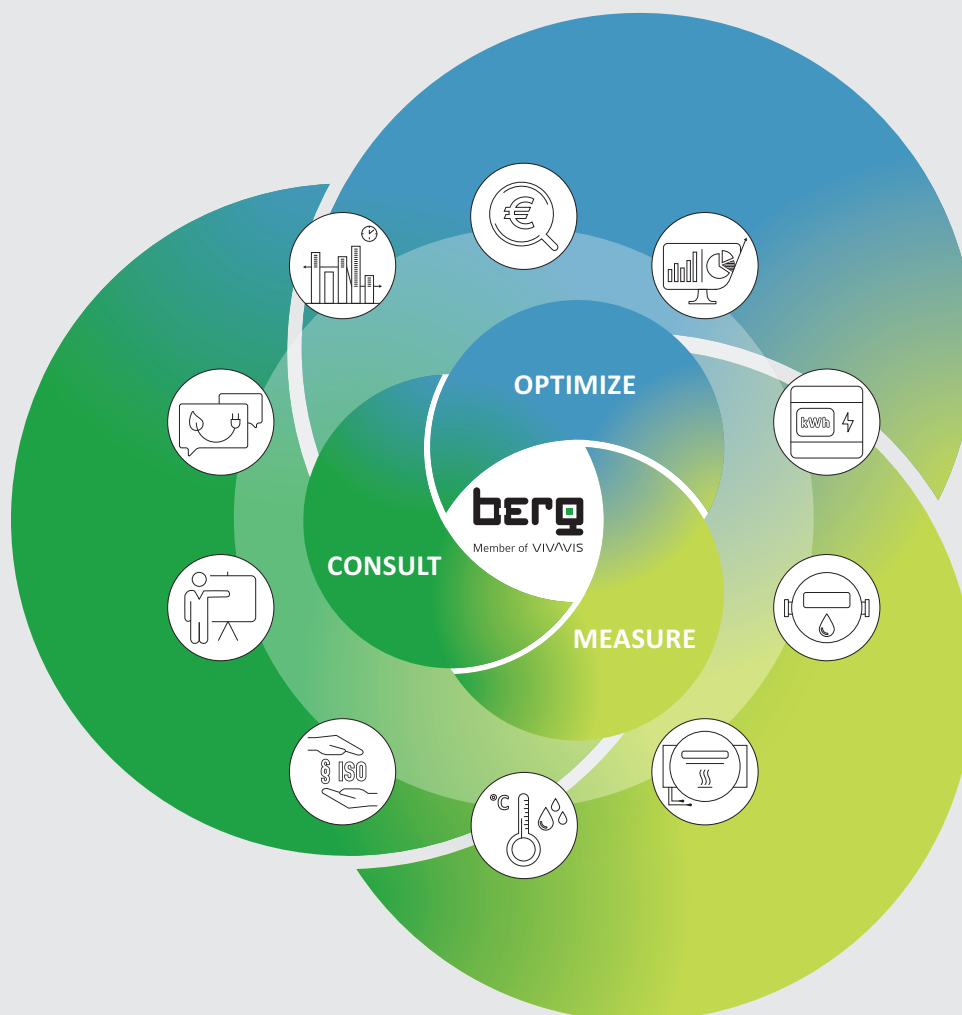## Flow Diagrams

+ Visualize instantaneous consumption or generation quantities for employees and customers
+ Freely position consumption, costs, load values, or CO_2 emissions on aerial photographs, road maps, or plant schematics.
+ Visualize position-dependent measurements
+ Use "Drill down" to nest flow diagrams (from overview to detailed view) with each other

Efficio Tour App

+ Meter readings without error-prone note-taking with paper and pen, also possible offline
+ Support manual reading of meters in a tour with mobile end device (smartphone/tablet)
+ Quickly detect incorrect readings or unknown meter changes
+ Data of the last 30 days are retained
+ Fast and automatic synchronization via WLAN

Set Energies Free!

With our optimized energy and load management solutions, companies can operate in a climate-neutral and cost-effective manner. As an innovation leader with many years of expertise, we help to increase energy efficiency in manufacturing industries and properties economically and ecologically – for long-term security and a sustainable future! Because the cleanest energy is that which is not generated, transported, and consumed in the first place. At Berg, we offer you everything from competent energy consulting and a solid foundation of precise measurement and communication technology to professional software solutions for optimizing energy costs – all from a single source.