
EG EnerKey
Implementing your energy management system with EG EnerKey

Introduction

The purpose of this guide is to help the reader implement a functional and high-performance energy management system suitable for the needs of the organisation in question.

The guide illustrates how the EG EnerKey system helps in the smart implementation of your energy management system, while meeting the requirements of the ISO 50001 standard or similar systematic method.

Energy management and an energy management system

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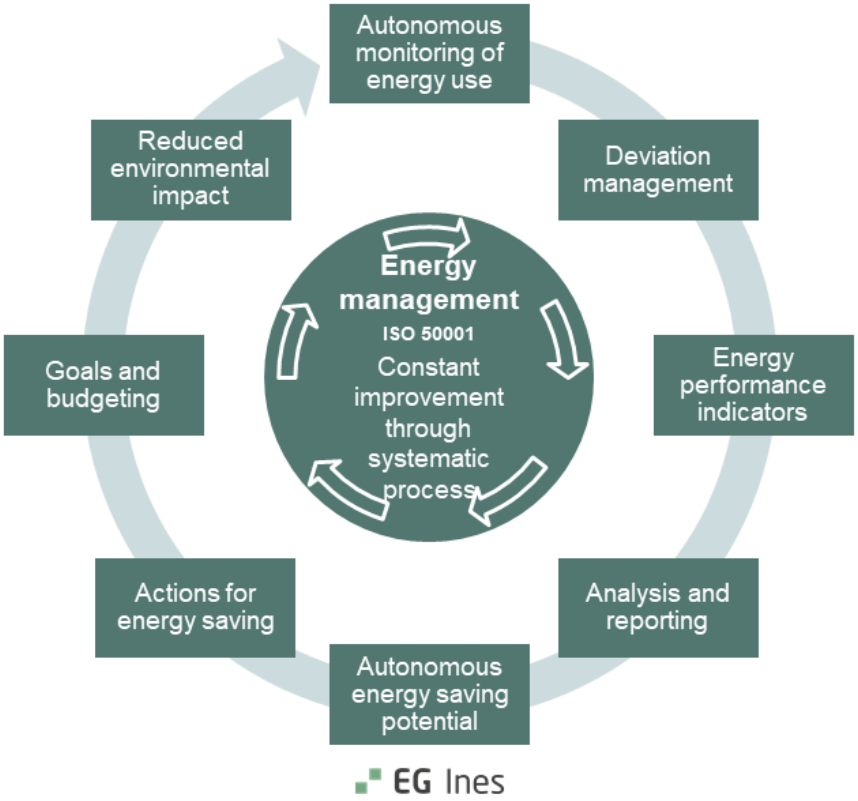
What is energy management and what is an energy management system?

Energy management refers to all of the things done to facilitate the sensible use and procurement of energy.

In turn, an energy management system is a regular, systematic approach to ensuring good results in energy management. An energy management system covers rules and targets for activities and the organisation of operations and tools for the effective processing of energy management data.

A well-implemented and documented energy management system can be certified like any other management system. The most widely known certificate is the international ISO 50001.

EG EnerKey is a practical tool for the implementation of an energy management system and the daily work of energy management.



What kind of organisation needs an energy management system?

Because energy management system is basically just a smart way of dealing with energy, it is suitable for all responsible energy users.

The current practices of many organisations already cover some aspects of the energy management system. In such cases, the implementation of the system will involve many minor improvements that will consolidate the whole.

The implementation of a high-quality energy management system can also fulfil legal obligations and other commitments.

For organisations that have signed set carbon neutrality targets, the introduction of an energy management system is a natural way of achieving the targets set in the agreement.

What does the Energy Efficiency Directive require?

The Energy Efficiency Directive and national legislation related to that obligates large companies to either demonstrate systematic energy management or conduct a mandatory corporate energy audit and related energy consumption studies at individual points of use every fourth year.

The mandatory audits can be avoided by adopting an ISO 50001 certified system.

In many cases, the introduction of an energy management system is also the best way of meeting the requirements of the Energy Efficiency Directive.

THE ENERGY EFFICIENCY DIRECTIVE APPLIES TO LARGE COMPANIES, AS DEFINED BY THE EU.

The criteria are:

- More than 250 employees or
- turnover exceeding MEUR 50 and a balance sheet of MEUR 43

What are the components of a functional energy management system?

Energy management system basics		Recommended	Additional ISO 50001
Management (= energy team)	Measurement of energy consumption and energy efficiency	Communications	Definition of baseline level
Improved energy efficiency	Documentation of results and operations	Evaluation and operational improvements	System certification and audits
Target setting	Procedures for detecting and correcting deviations in consumption	Ensuring energy efficiency in procurement	
		System documentation	

Energy management system basics

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Management – work of the energy team

The systematic improvement of energy efficiency requires the definition of rules and responsibilities for the work.

Responsibility for the energy management system can be assigned to an energy team or a single person.

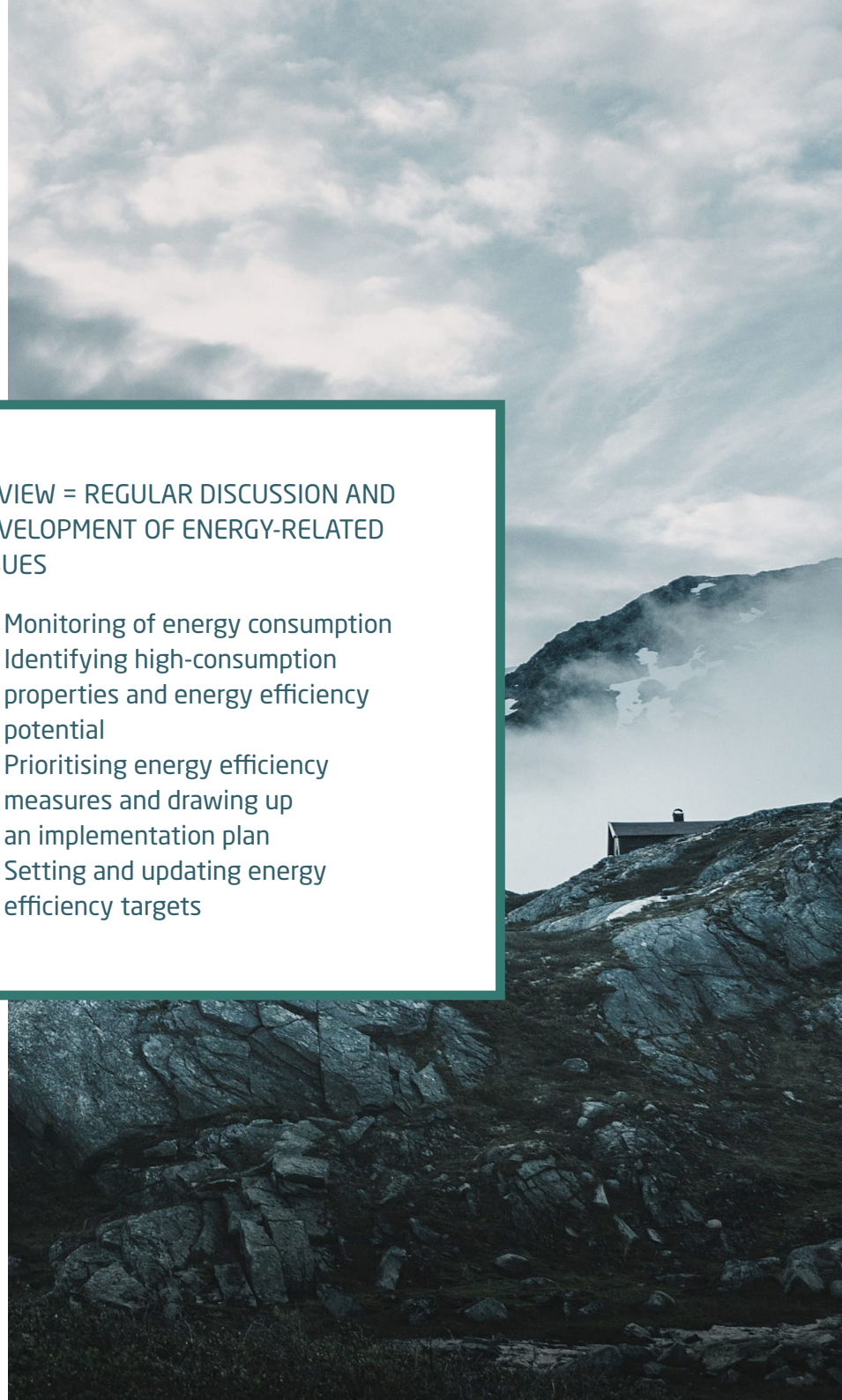
The main tasks of the energy team are to define policies and conduct regular reviews of energy consumption and energy efficiency.

In addition, the energy team:

- draws up procedures for detecting, monitoring and correcting deviations in consumption;
- communicates and reports on targets and their achievement to the staff and management; and
- takes care of the required documentation and audits.

REVIEW = REGULAR DISCUSSION AND DEVELOPMENT OF ENERGY-RELATED ISSUES

- Monitoring of energy consumption
- Identifying high-consumption properties and energy efficiency potential
- Prioritising energy efficiency measures and drawing up an implementation plan
- Setting and updating energy efficiency targets



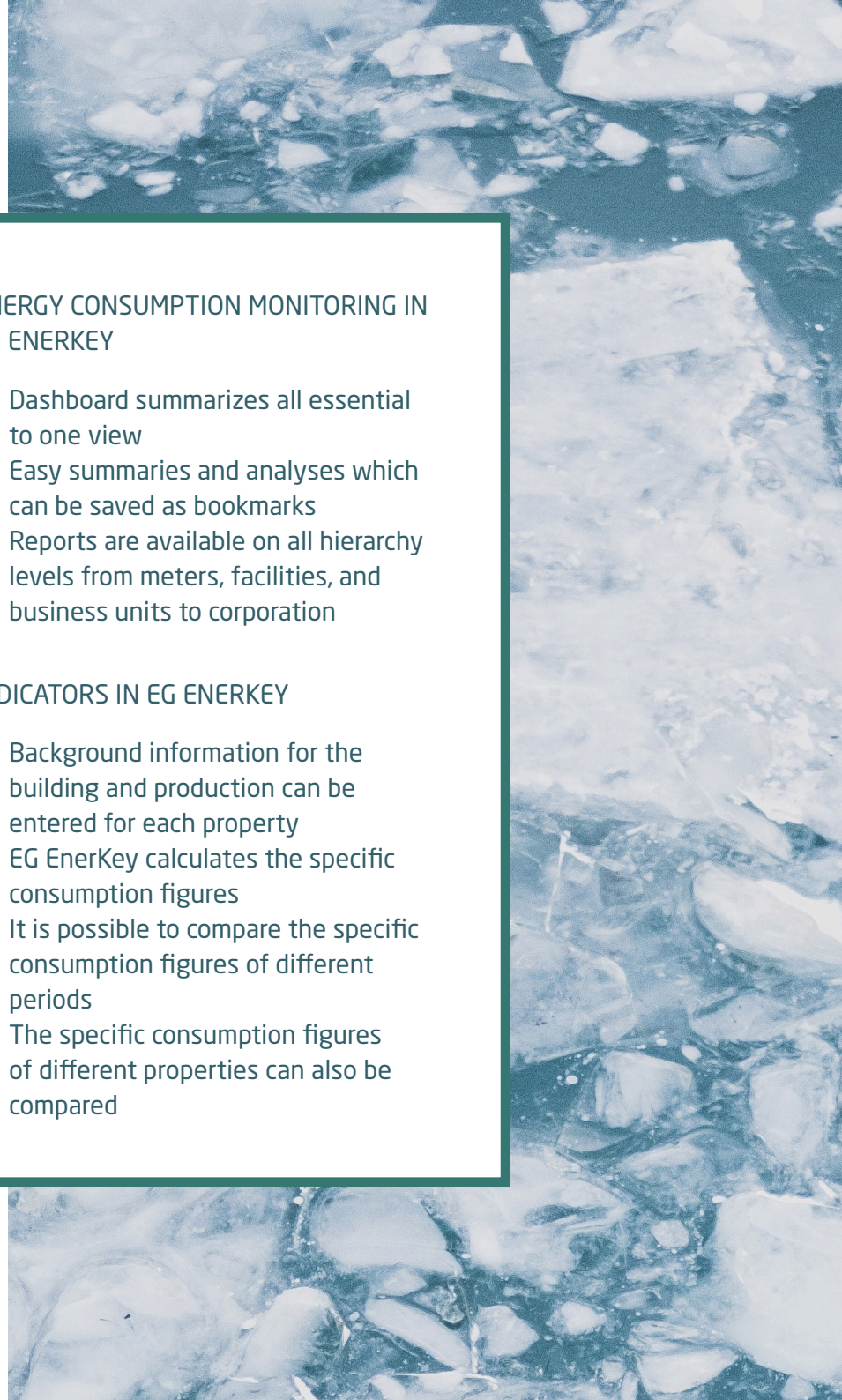
Monitoring of energy consumption and energy efficiency indicators

Keeping track of development requires measured consumption data. Monitoring is used to identify energy efficiency potential and the properties that have the highest consumption.

The measurement of energy efficiency requires indicators, which can be specific consumption figures per

- square metre;
- utilisation rate;
- number of personnel; or
- production volume

When the specific consumption figures have been determined, monitoring becomes easier even if the scope of operations changes.



ENERGY CONSUMPTION MONITORING IN EG ENERKEY

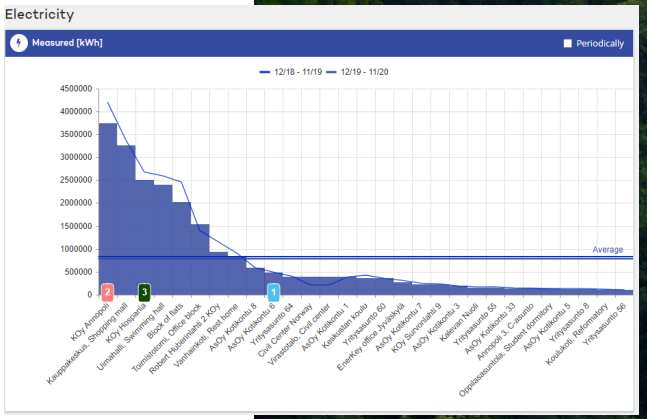
- Dashboard summarizes all essential to one view
- Easy summaries and analyses which can be saved as bookmarks
- Reports are available on all hierarchy levels from meters, facilities, and business units to corporation

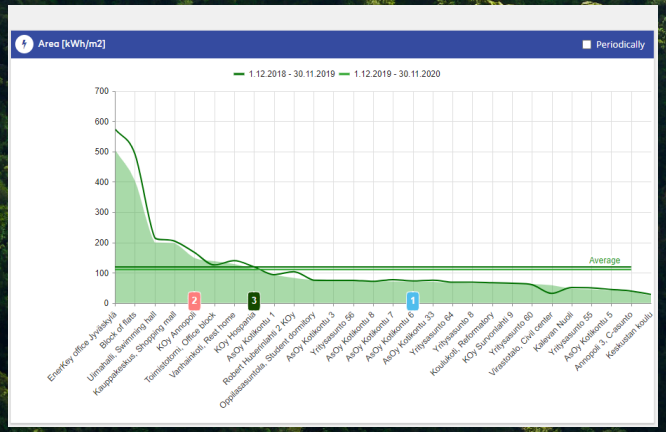
INDICATORS IN EG ENERKEY

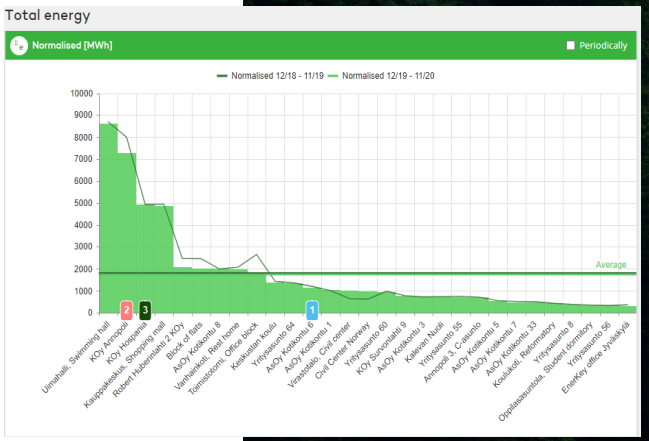
- Background information for the building and production can be entered for each property
- EG EnerKey calculates the specific consumption figures
- It is possible to compare the specific consumption figures of different periods
- The specific consumption figures of different properties can also be compared

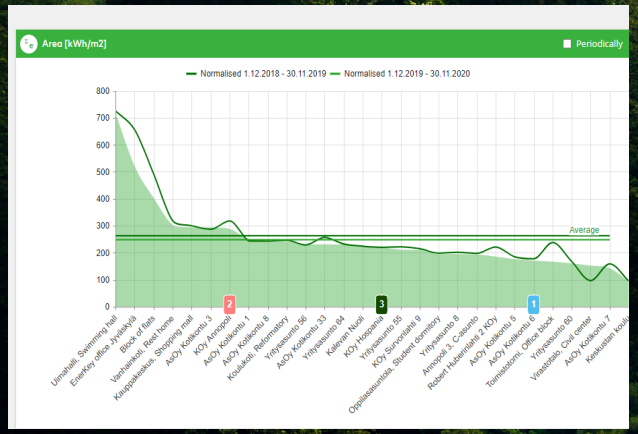
Monitoring of energy consumption and energy efficiency indicators in EG EnerKey

- Monitor consumption for different periods and in comparison to other years. At the same time, you can keep track of the development of indicators.
- Analyse the consumption figures of large real estate portfolios and compare them to previous years.
- Analyse specific consumption figures and make comparisons between commensurable properties.









Target setting and monitoring

- Set realistic and measurable targets that are easy to follow.
- We recommend setting individual targets for specific properties.
- Targets should be based on known energy efficiency potential.
- Monitoring can be based on consumption figures and indicators.
- The achievement of targets should be monitored and the targets updated on a regular basis.
- Follow your energy budget.

HINT

Energy intensive processes or systems should be measured with sub-metering to ensure proper performance monitoring.

WITH EG ENERKEY'S TARGET TOOL, YOU CAN:

- set specific targets for individual properties and types of energy; and
- monitor the achievement of energy-consumption targets at the level of individual properties

YOU CAN ALSO USE EG ENERKEY TO:

- compare the consumption and specific consumption figures of different years;
- manage energy efficiency measures; and
- follow your energy budget

Target setting and monitoring in EG EnerKey

- Use the energy management tools to set property-specific targets or baselines.
- You can use the annual consumption of a specific year or a manually entered value as the baseline.
- Targets can be set at annual and monthly levels.
- Consumption reports enable easy tracking of progress towards targets.

Improved energy efficiency

All energy efficiency measures are compiled into a one place for follow-up and to manage those efficiently. You should assign schedules, responsibilities and budgets for each measure to ensure that they are carried out.

Ideas for measures can be collected
- from employees;
- through energy audits; and
- from specific surveys.

The actions should be integrally linked to the targets and their monitoring.

HINT

Operational staff often have excellent ideas for improving energy efficiency. In EG EnerKey, any user can submit ideas for efficiency measures. It is easy to add the best proposals to the implementation list. Encourage users to think up new ideas!

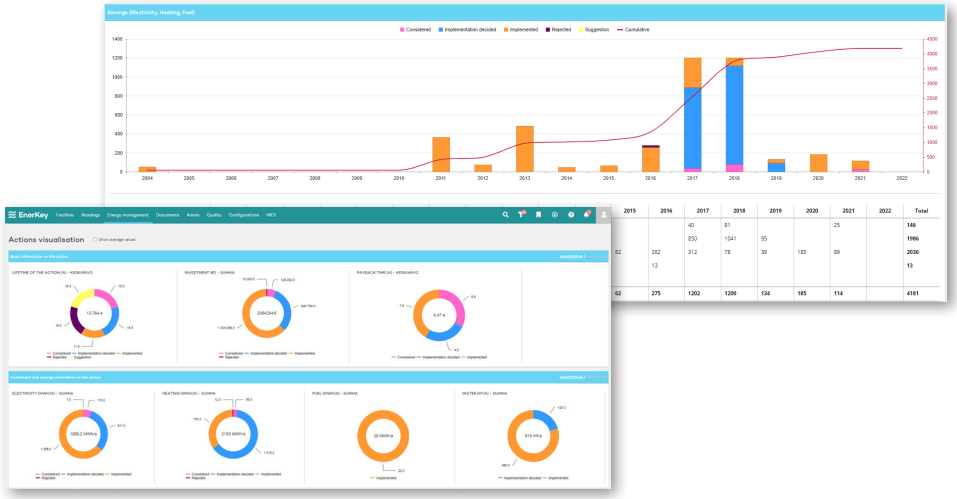
THE EG ENERKEY ACTION TOOL CAN BE USED TO:

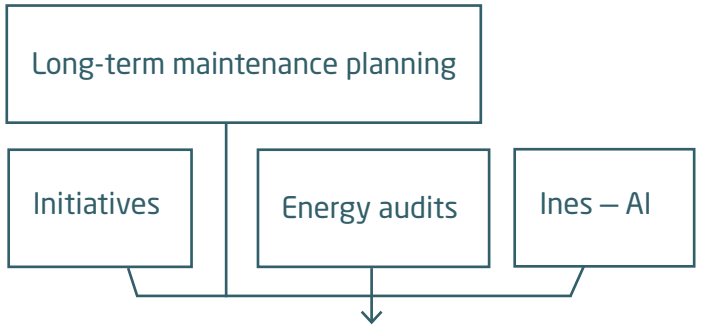
- collect ideas for energy efficiency measures;
- schedule measures;
- monitor the implementation of measures;
- monitor the energy consumption impact of the measures; and
- create various reports on the measures.

Improved energy efficiency

The continuous improvement of energy efficiency is an essential part of energy management and its results provide the greatest motivation and reward for your work.

EG EnerKey is designed to support this process. It allows the online and real-time planning and monitoring of the development of energy efficiency.
The system clearly illustrates the impact of measures and automatically generates the reports required by the Energy Efficiency Agreement.





EG ENERKEY – ENERGY MANAGEMENT:
MEASURE MANAGEMENT

- Prioritisation of measures
- Preparing investment opportunities for decision-making
- Logging of implemented measures in connection with consumption data
- Overview of potential and results
- Effectiveness reporting
- Reporting for the Energy Efficiency Agreement

Management of deviations in consumption

Detecting deviations in consumption and reacting to them is a key aspect of everyday energy management. The sooner the deviations are identified, the sooner their cost impact can be brought under control.

Typical causes of deviations include equipment malfunctions and the thoughtless actions of real estate users.

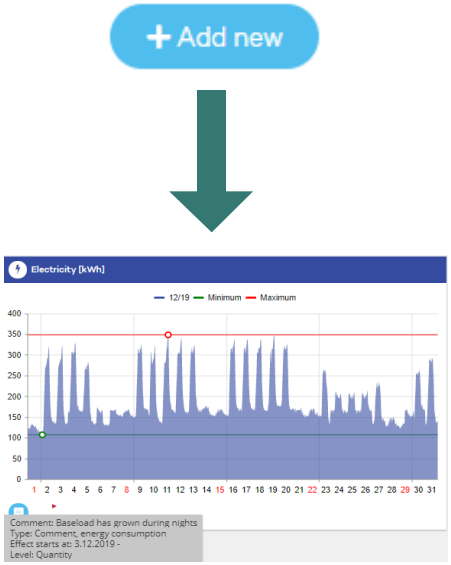
EG EnerKey issues automatic alerts of deviations in consumption, and its energy management tools make it possible to comment on and resolve deviations directly in the consumption reports.

When designing your energy management system, you should give some thought to handling deviations. Create a procedure that defines the required measures and the persons responsible for them. EG EnerKey's energy management tool gives you an overview of any deviations quickly and easily.

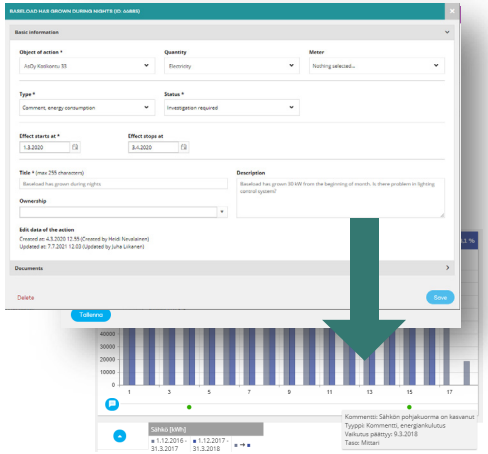
Example of a process for handling deviations in consumption

- The energy manager observes significant deviations. EG EnerKey Alarms and Ines AI are helping in that.

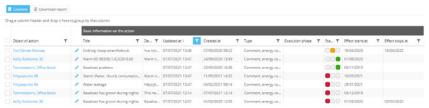
- and logs them in the consumption reports.



- With the help of the control room and site manager, the energy manager draws up a report on the causes of the deviation.
  When an acceptable explanation is found or the situation has returned to normal, the energy manager marks the deviation as resolved.



- The energy manager reports on deviations and their status in a monthly energy report.



Document management

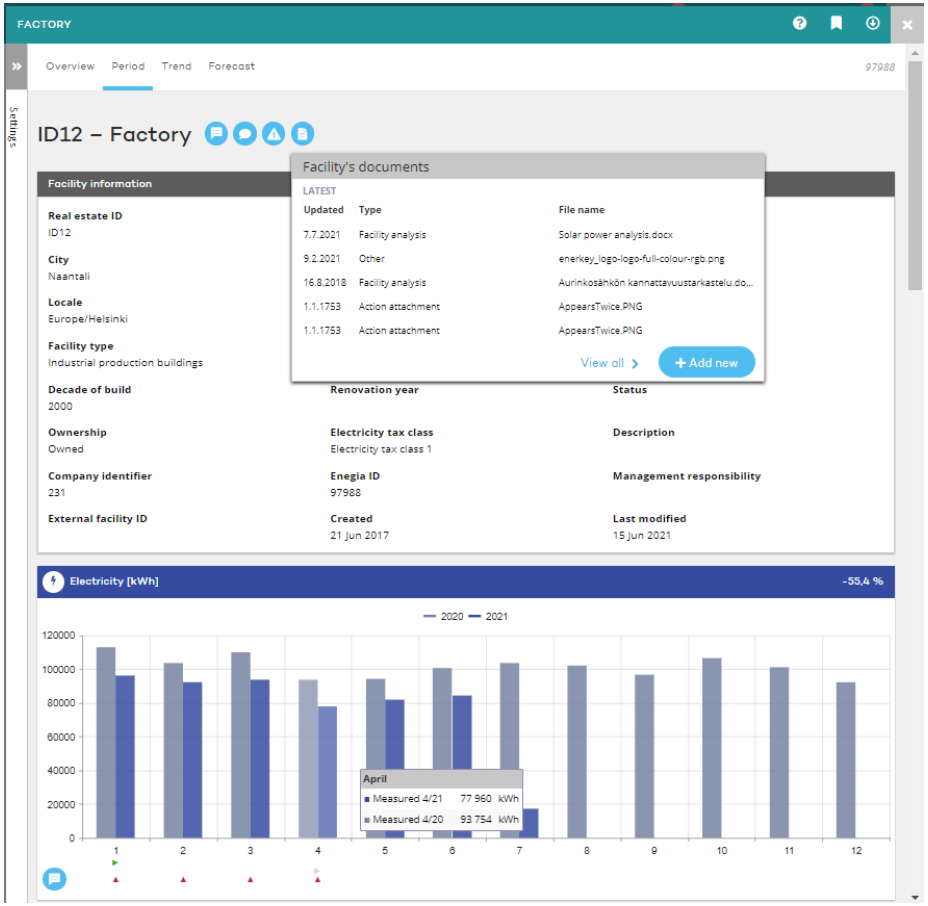
Energy management involves a wide range of organisational and property-specific documents. The certification of an energy management system markedly increases the documentation requirements.

Examples of energy management documents:

- Energy audits and investment calculations of individual properties
- Long-term maintenance plans
- Metering documentation
- Energy management system manual/guidelines
- Energy analysis results
- Memos and decisions of the energy team
- Records of management system audits

HINT

- EG EnerKey offers versatile document management tools
- The documents related to each property can be accessed and added directly from the property report
- The Documents service compiles all documents, both organisational and property-specific, in one place



Communications

Communication and training are effective tools for ensuring staff commitment to energy efficiency work. It is therefore a good idea to agree on communication practices in advance.

The internal and external communication of energy efficiency targets and the progress of measures is the task of the energy team.

External communications are important for projecting a responsible image and committing partners to energy efficiency.

EG EnerKey's graphic materials support the communications of the energy team. Our experts can help you with the implementation of marketing campaigns and communications drives.

HINT

You can use the News section of the EG EnerKey desktop for internal communications.

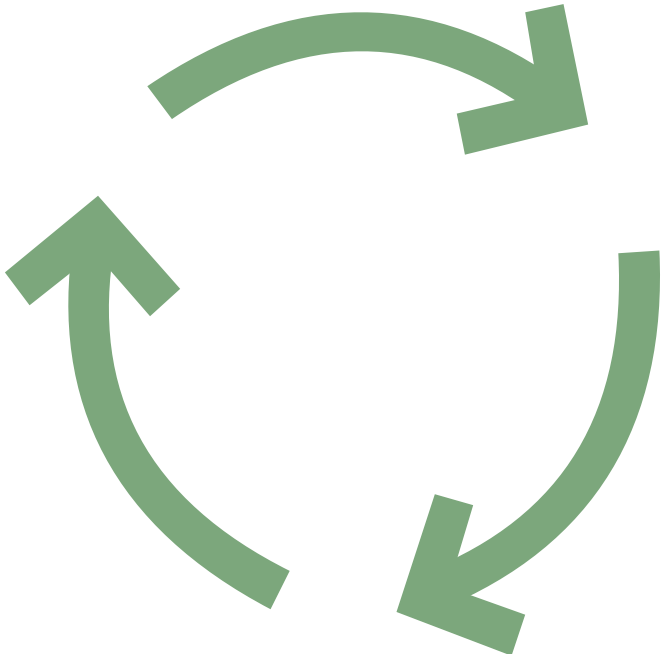
Evaluation and development of operations

The key objective of energy management is continuous improvement. This applies not only to energy efficiency but also to its implementation model.

A certified energy management system requires annual internal audits and management reviews. Their purpose is to assess the quality of current models and possible development requirements.

The internal audit evaluates the realisation of continuous improvement in energy efficiency, the energy management system's fitness for purpose and whether the system has been applied and maintained as agreed.

Senior management must ensure the suitability, adequacy and efficiency of the energy management system through regular reviews conducted at least once per year.



Evaluation and development of operations

Senior management must ensure the suitability, adequacy and efficiency of the energy management system through regular reviews conducted at least once per year.

The management review must:

a) review the measures agreed following the previous management review;
b) review the results of internal audits;
c) evaluate the fulfilment of statutory obligations and other commitments;
d) review the organisation's energy policy;
e) assess the practical implementation of the agreed-upon principles and decisions;
f) review ongoing action plans and (development) programmes;
g) assess the suitability of the organisation's energy indicators and the extent to which the measured results meet targets;
h) assess the suitability of the energy efficiency system;
i) decide on the targets and measures for the next period; and
j) issue recommendations for improvement.

Ensuring energy efficiency in procurement

Taking energy efficiency into account in procurement should be a given and is required by certified energy management systems.

The energy efficiency and life cycle costs of the available options should always be evaluated when purchasing or renovating premises, equipment, processes or services that have a material impact on energy efficiency. Energy efficiency can also be taken into consideration in the procurement of energy.

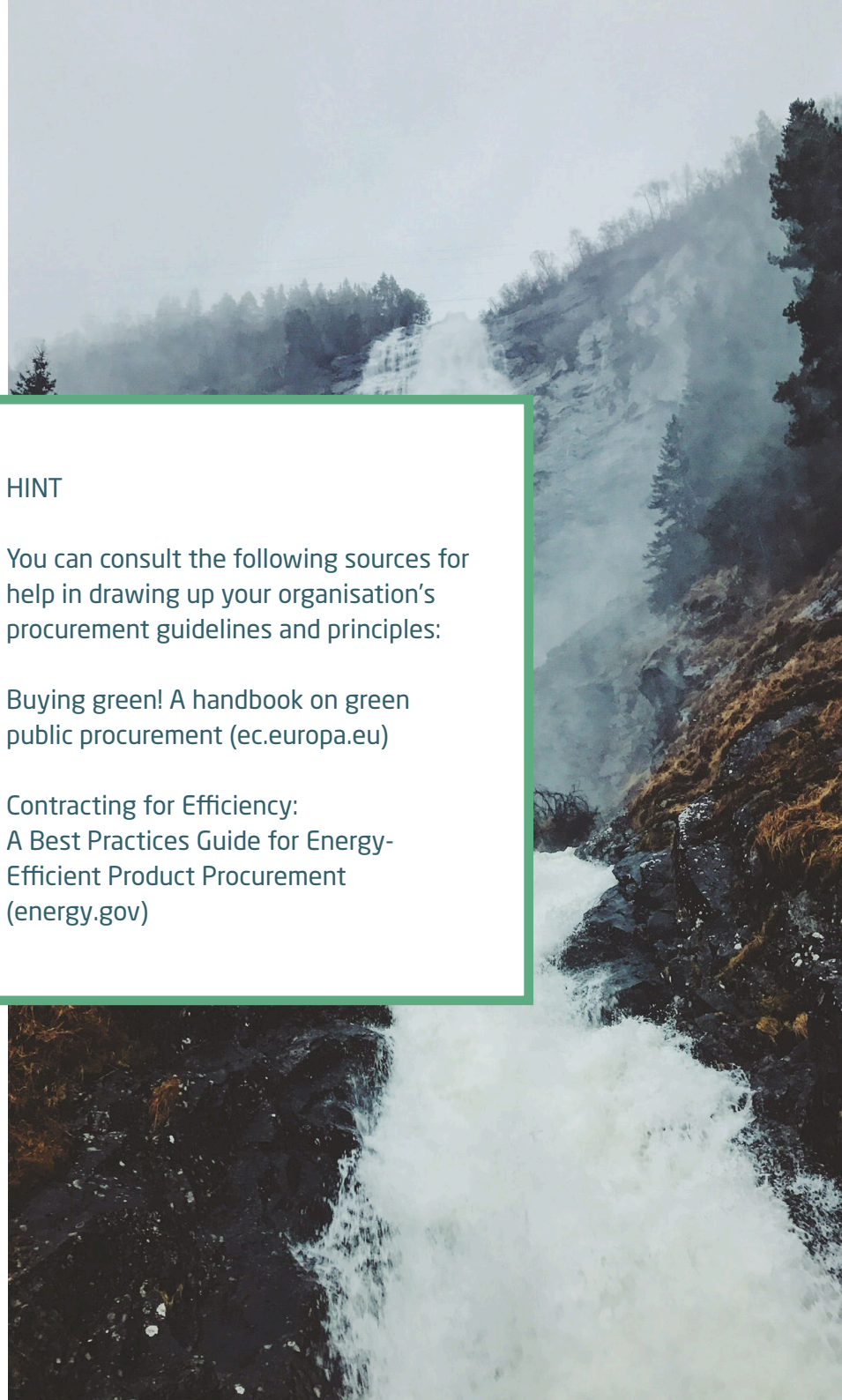
These considerations apply equally to the organisation's design and purchasing departments.

HINT

You can consult the following sources for help in drawing up your organisation's procurement guidelines and principles:

Buying green! A handbook on green public procurement (ec.europa.eu)

Contracting for Efficiency:
A Best Practices Guide for Energy-Efficient Product Procurement (energy.gov)



System documentation

As a minimum, you should draw up a basic description of your energy management system, outlining the measures, their schedules and the persons responsible for them. Certified systems must be described in greater detail.

The purpose of system documentation is to explain the implementation of energy management to personnel. At the same time, it can be used to demonstrate compliance to external auditors.

Your organisation can draw up a dedicated "Energy Manual" on the basis of the energy management system documentation, or you can attach the documentation to an existing environmental manual or similar management system description.

The relevant standards contain more detailed instructions and recommendations on what should be documented.

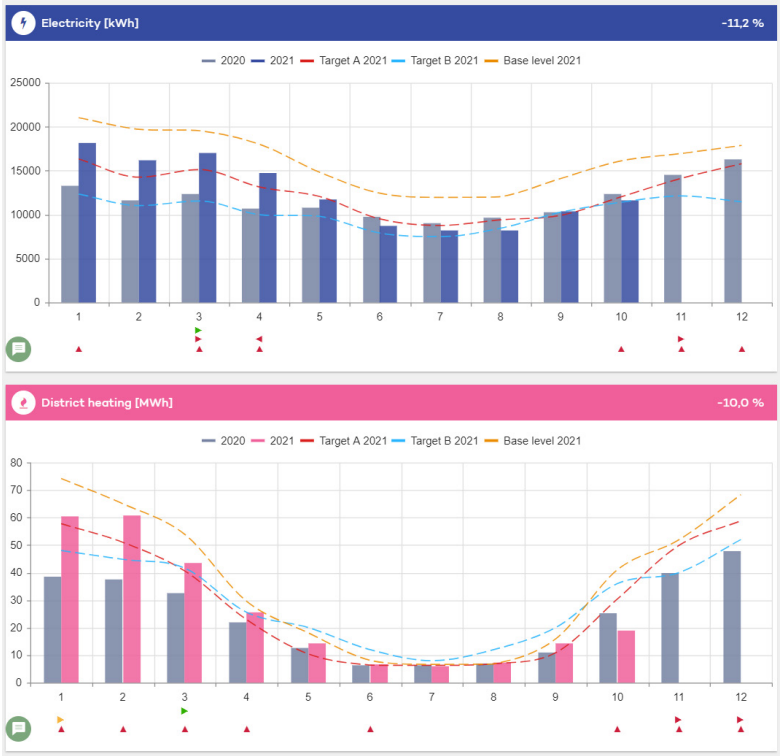
Definition of the baseline level of energy consumption

In addition to energy efficiency indicators, the development of energy efficiency and achievement of targets can be monitored by specifying a baseline level of energy consumption. The baseline level represents the reference level of energy consumption.

The baseline level is a calculated figure, not an actual consumption statistic for any given year, for example. However, you can use a year representative of "normal consumption" as the basis for calculating the baseline level.

Different baseline levels are calculated for different types of energy. Industrial companies can also define separate tracks for production and real estate consumption. The baseline level can represent energy consumption, normalised heat consumption or specific consumption per building or production volume.

The formulas drawn up for calculating the baseline level should be kept simple and intelligible. If significant changes occur in the underlying operations, the baseline level should be updated.



HINT

Use the target tool to specify the baseline level as the baseline for consumption, and you can follow changes in consumption visually from the graphs.

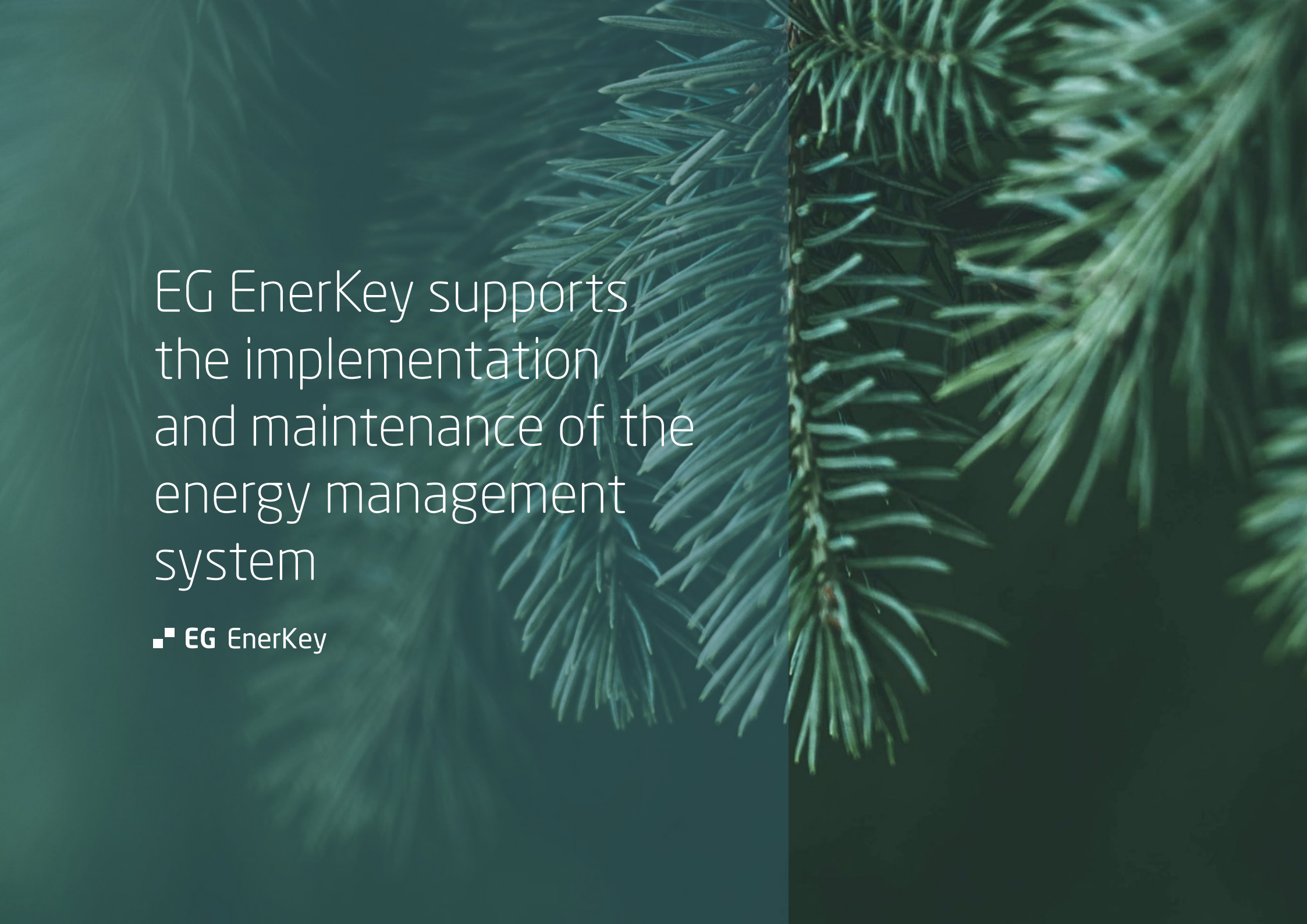
System certification

Once the energy management system is designed, documented and operational, you can begin the process of its certification. Certification is always performed by an accredited body with the competence required for energy management system certification.

The certification body evaluates the system by reviewing its documentation and interviewing the organisation responsible for energy management. The ISO 50001 audit is conducted over two stages. After the audit, the certification body can request the organisation to improve or detail the areas that it has found lacking.

Systems that pass the audit receive a certificate that is valid for three years. Two follow-up audits are required during this period, along with a reassessment of the system when the certificate expires.

The certificate demonstrates that an independent expert body has found the energy management system to be compliant with requirements.

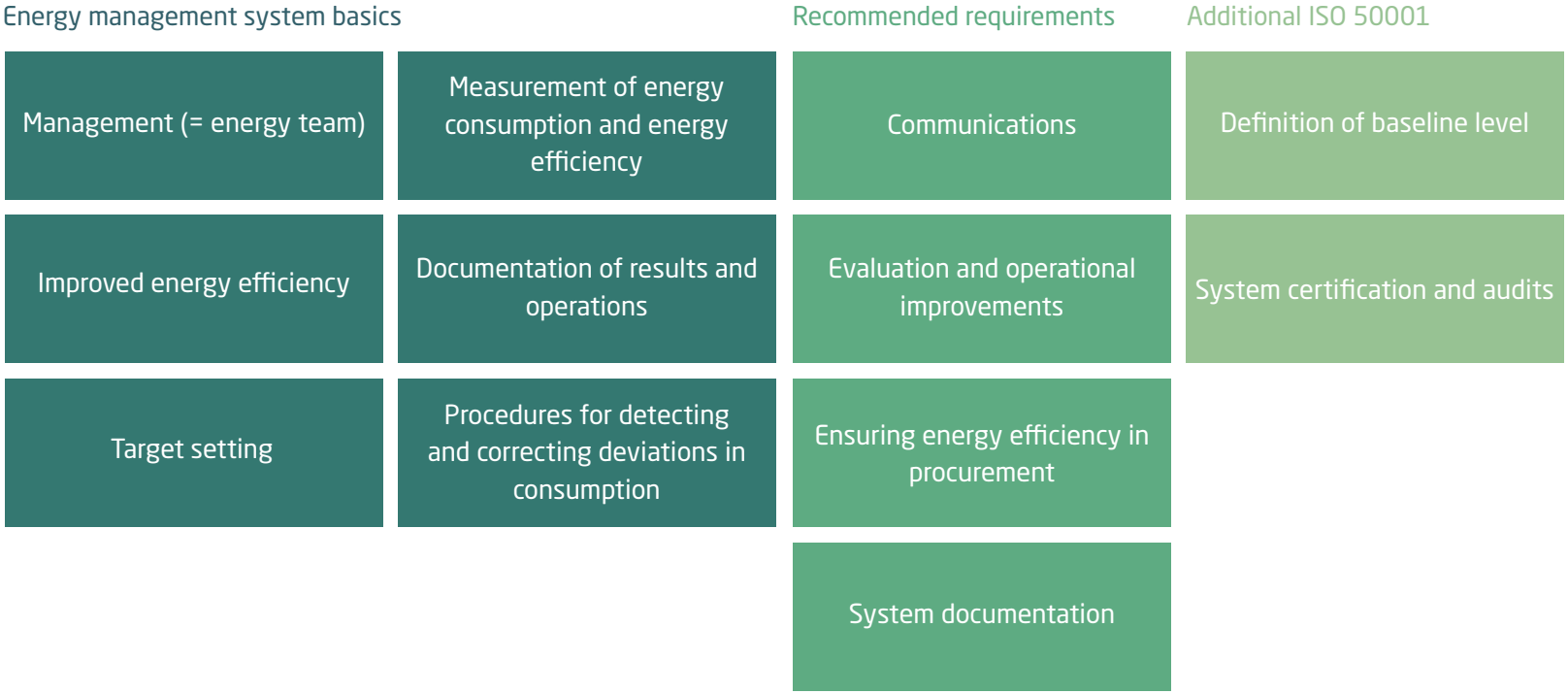


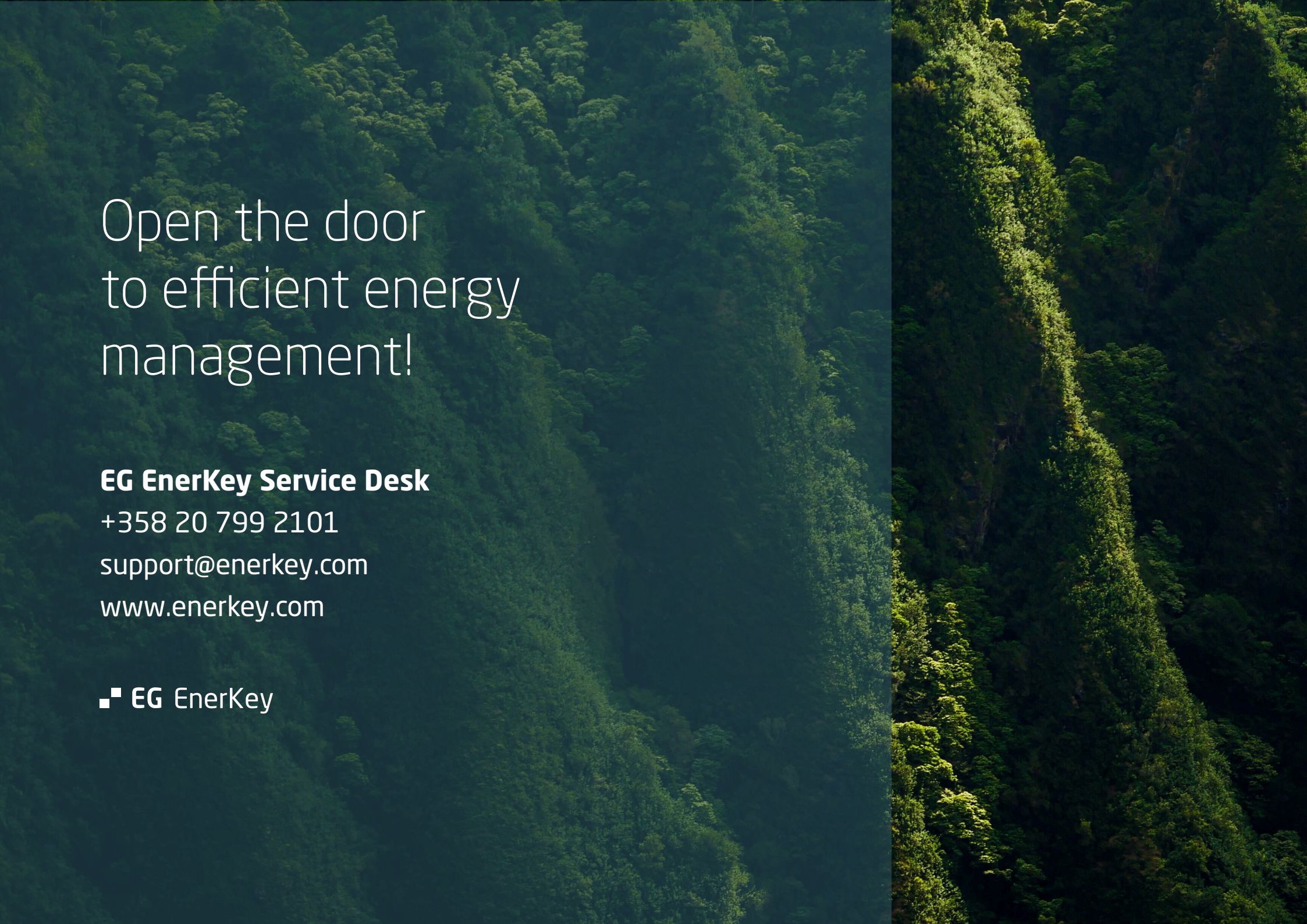
EG EnerKey supports the implementation and maintenance of the energy management system

EG EnerKey

EG EnerKey provides support during the creation and maintenance of the system

- Our experts provide assistance with the various aspects of building the system, according to the customer's needs.
- We can provide an expert to serve as your energy manager, coordinating and supporting the continuous improvement activities of the energy team on a regular basis.
- EG EnerKey generates essential data for the energy management system and makes the work of the energy team easier and more efficient.
- EG EnerKey is a certified, ISO 50001 compatible energy management system.





Open the door to efficient energy management!

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