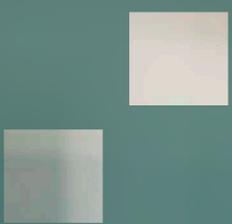




Let's go further

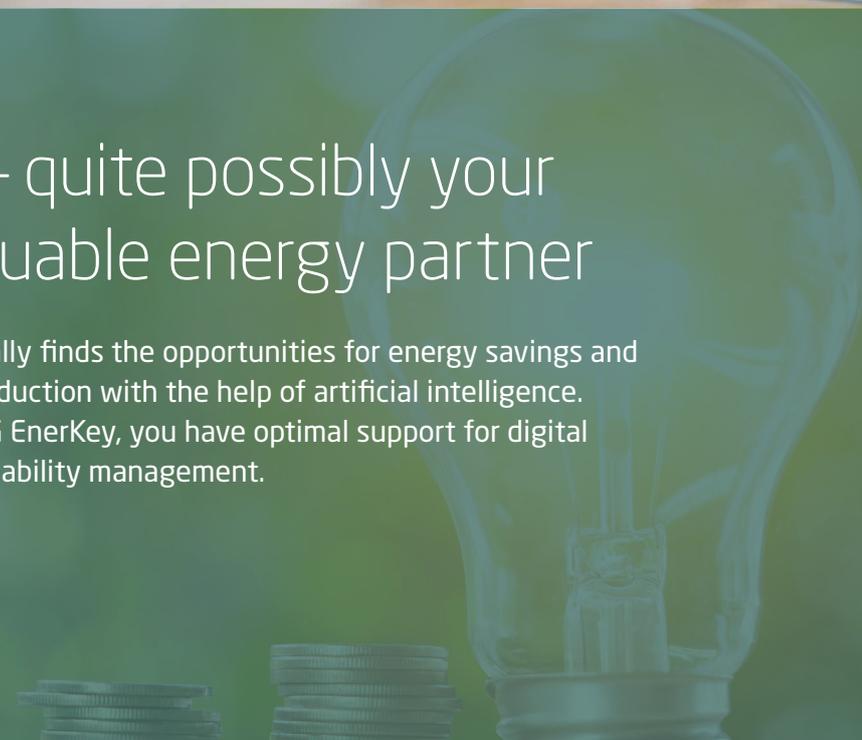
EG INES

– INTELLIGENCE FOR ENERGY AND
SUSTAINABILITY MANAGEMENT

Three squares of varying shades of gray and white are arranged in a cluster on the left side of the page.

EG Ines – quite possibly your most valuable energy partner

EG Ines automatically finds the opportunities for energy savings and carbon footprint reduction with the help of artificial intelligence. With EG Ines for EG EnerKey, you have optimal support for digital energy and sustainability management.

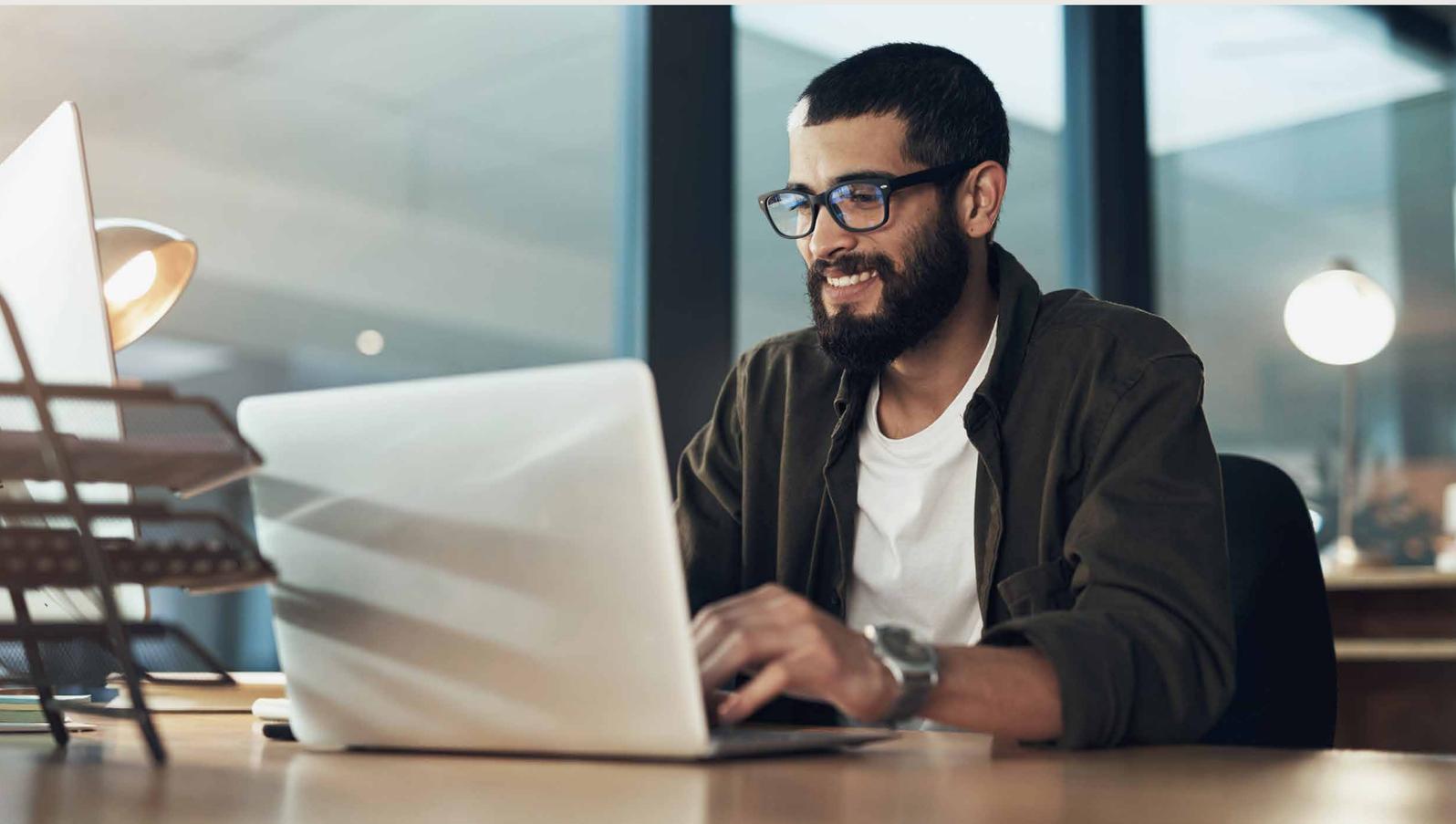
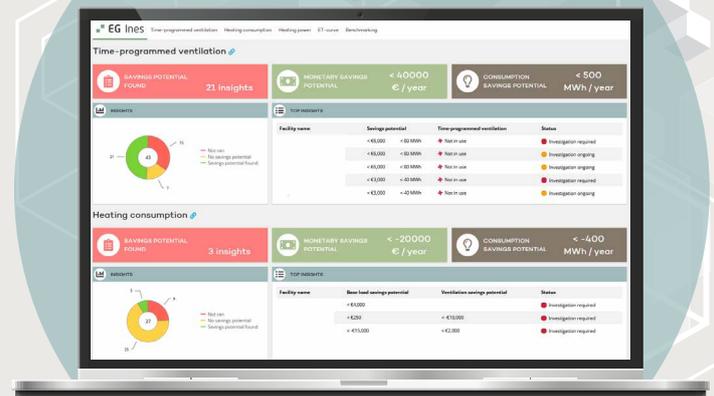
A large, faint lightbulb is visible in the background of the bottom section. In the foreground, there are several stacks of coins, suggesting financial value or savings.

EG Ines knows your consumption better than you do

The built-in artificial intelligence feature in the energy and sustainability management tool EG EnerKey is called EG Ines.

EG Ines automatically identifies the potential for energy optimization and reduction of carbon emissions and automates the manual analysis work normally performed by energy consultants.

By analyzing a variety of data like consumption, weather and property type, EG Ines informs you when it discovers a property with an abnormally high energy consumption and provides relevant suggestions on how you can optimise consumption.





In Hyvinkää, EG Ines helps reduce energy consumption and carbon emissions

The Finnish city of Hyvinkää plans to reduce its energy consumption by 7.5% by 2025. The city is also part of the HINKU collaboration, where a number of municipalities have pledged to reduce their carbon emissions by 80% by 2030.

“To achieve these goals, we need to take a decisive approach,” says Head of Administration in the City of Hyvinkää, Marko Hytönen.

Therefore, the southern Finnish city of 45,000 inhabitants has established an energy savings committee that monitors the energy consumption, with EG EnerKey as a partner.

“Using EG EnerKey, we monitor our energy consumption and receive some extremely useful reports, which are sent all the way to the city council. The City of Hyvinkää manages more than 100 properties, and the daily energy reports showing consumption in real time are essential reading for city engineers, who need to know whether operations are running as they should. “These reports make it easy to identify deviations and target them so we can save a significant amount of energy.

If there are problems with the heating system in a property, it will quickly be discovered as abnormal heat consumption, so that the error can be corrected,” explains Marko Hytönen, City of Hyvinkää.

“The problem is solved immediately, so that we don’t lose money or waste energy,” says Marko Hytönen, who explains that this access to accurate and up-to-date knowledge is part of the reason why the energy savings committee has proved to be so effective: “The knowledge that is available gets things moving. This is where EG EnerKey has proven to be essential,” says Marko Hytönen, City of Hyvinkää.

» The problem is solved immediately so that we don’t lose money or waste energy

HERE'S WHY YOU SHOULD CHOOSE EG INES



EG Ines offers data-driven energy and sustainability management, which frees up your time from analysis to action.



EG Ines automates and updates the manual analysis work normally performed by energy consultants.



EG Ines quickly and continuously identifies your potential for financial savings and reducing carbon consumption.



EG Ines builds on your own consumption data and provides specific suggestions for optimisation, where it is easy to see which investments provide the most value – both financially and environmentally.



EG Ines supports the continuous energy improvement efforts, by enabling you to quickly correct errors and obtain immediate results based on real-time data rather than planning with historical data.



EG Ines provides a comprehensive overview of optimisation and savings potential and carbon gains, as well as benchmarking your results with similar buildings across data.



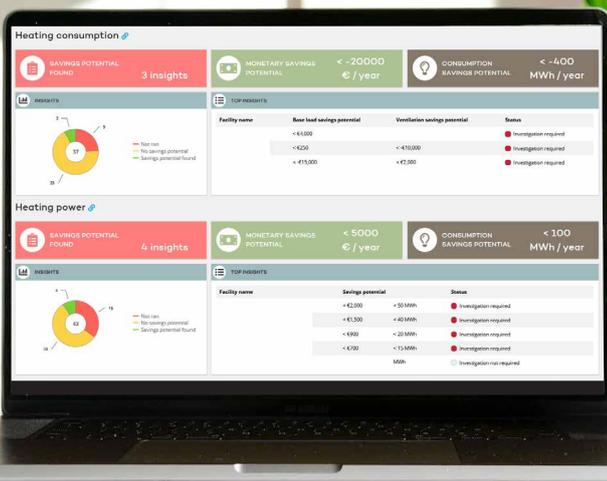


Quick and easy overview

With EG Ines, the AI feature of EG EnerKey, you can make optimal use of the total solution. This includes continuous monitoring of consumption and automatic suggestions for consumption optimisation in an easily readable and manageable graphic format – with the opportunity to dive deeper into the individual figures.

For example, EG Ines provides detailed analyses of the operation of your ventilation system as well as heating energy consumption and compares it with other buildings with the same profile.

The measures proposed by EG Ines are automatically transferred to the energy management tool in EG EnerKey.



View your optimization options

Here, you get a complete overview of the optimization options identified by EG Ines. You can also see what you can save by implementing the individual measures and what this will mean for your ongoing energy consumption and consequently, your carbon emissions.



EG Ines Ventilation Analytics

EG Ines Ventilation Analysis gives you detailed insights into the operation of your ventilation system and offers suggestions on how you can optimise the schedules for the individual units in each of your buildings.

EG Ines detects the occupation times of the building from water data and then analyses the ventilation system's on/off program based on energy data.

Where it is possible to optimise ventilation hours, EG Ines calculates and visualises energy, cost and carbon savings automatically.

EG Ines proposes schedules for weekdays, Saturdays, Sundays and public holidays.

1. Summary

Ines ventilation analysis detects if the ventilation of the building is constantly running or if the energy consumption at night-time is too high. By switching off or reducing ventilation at night-time it is possible to save energy significantly. In this report, it is estimated how much energy could be saved and what are the cost and CO2 savings based on average energy prices and CO2-factors. The savings are calculated only for winter months when there is a heating demand using the latest temperature history.

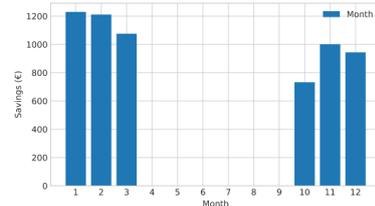


Figure 1: Savings, monthly breakdown.

Table 1. Savings statistics for the inspection period.

Quantity	Consumption (MWh)	CO2 (tons)	Potential cost savings (€)	Potential energy savings (MWh)	Potential CO2 savings (tons)
Heating	374.765603	61.461559	4182.437729	63.370269	10.4
Electricity	50.630125	7.999560	2014.886502	22.387628	3.5
Total	425.395727	69.461119	6197.324231	85.757896	13.9

EG Ines Heating Consumption Analytics

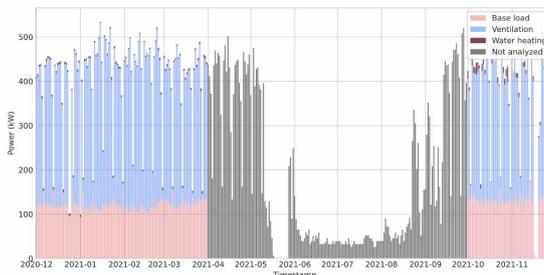
EG Ines Heating Consumption Analytics breaks down the heat sources into three types: water heating, ventilation heating and base load.

EG Ines analyses the three types of heat data and compares them with current data from similar buildings.

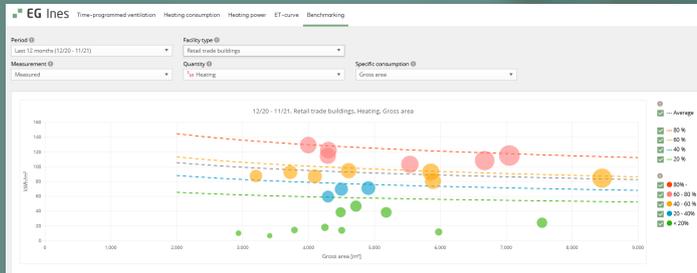
Where the analysis reveals abnormal values, EG Ines suggests the most likely cause and provides constructive, concrete suggestions for how you can solve the problem.

4. Heating distribution daily bars

The graph shows the daily distribution of heating between the base load, ventilation boost and hot water heating. Changes in values on the timeline indicate changes in the building's heating systems.



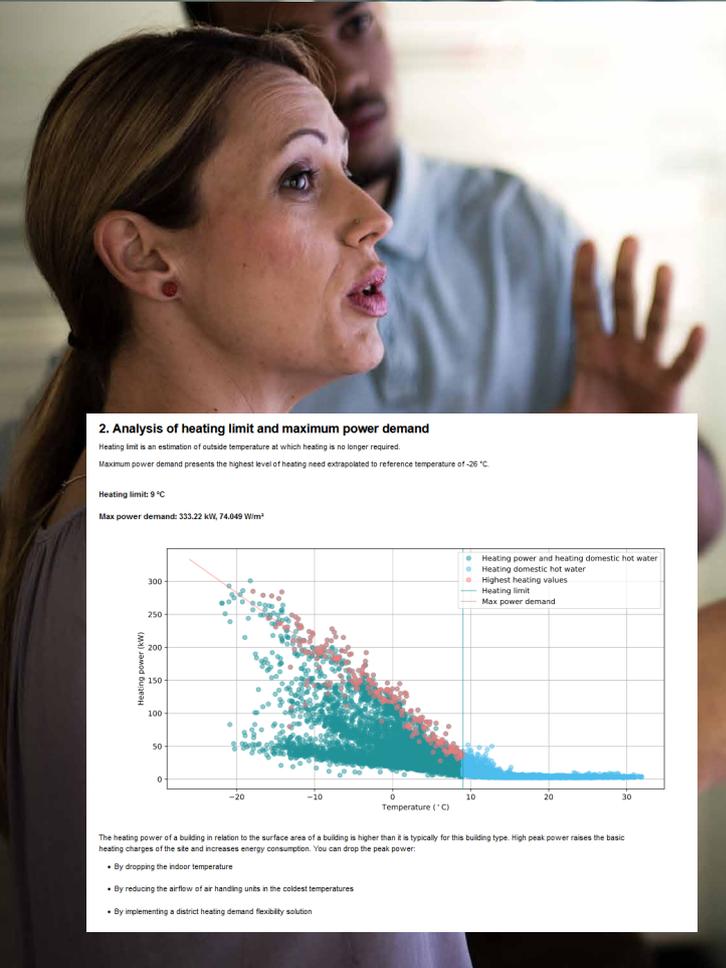
EG Ines Benchmarking



With EG Ines Benchmarking, you can compare your energy consumption and key figures for energy consumption in your property portfolio with similar buildings throughout the Ener-Key database, which contains more than 20,000 locations.

Using EG Ines, you can quickly identify the places that do not function optimally compared to other similar buildings, so that you can identify the most likely causes of the detected difference.

EG Ines Benchmarking analyses data in several ways, depending on the type of energy and the season.



EG Ines Heating Power Analytics

EG Ines Heating Power Analytics automatically analyses the correlation between the heating consumption and outdoor temperature. The analysis can reveal a heating limit that is too high and consuming energy unnecessarily.

EG Ines also ensures that the return water from district heating has cooled correctly at different outdoor temperatures. Finally, EG Ines can analyze the consumption of electric heating in buildings where this is not the primary heat source, in order to avoid unnecessary consumption of electric heating.

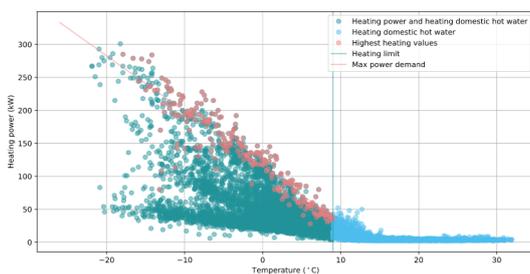
2. Analysis of heating limit and maximum power demand

Heating limit is an estimation of outside temperature at which heating is no longer required.

Maximum power demand presents the highest level of heating need extrapolated to reference temperature of -26 °C.

Heating limit: 9 °C

Max power demand: 333.22 kW, 74.049 W/m²



The heating power of a building in relation to the surface area of a building is higher than it is typically for this building type. High peak power raises the basic heating charges of the site and increases energy consumption. You can drop the peak power:

- By dropping the indoor temperature
- By reducing the airflow of air handling units in the coldest temperatures
- By implementing a district heating demand flexibility solution

This is why we chose EG Ines

Sustainability is part of the city's strategy

EG Ines quickly found a unit, where the program setting for ventilation time was incorrect. The ventilation was still in boost mode, which had been set after a renovation project. This resulted in unnecessary annual consumption of €15,000 when ventilation was at full capacity, even outside of working hours.

Property management, City of Lahti

We achieved annual savings of around €9,000

With EnerKey's new intelligence feature, EG Ines, we were able to optimise the ventilation uptime for our properties. By optimising uptime alone, we achieved annual savings of around €9,000.

Eero Takala, HVAC expert, City of Riihimäki

The system works as it should

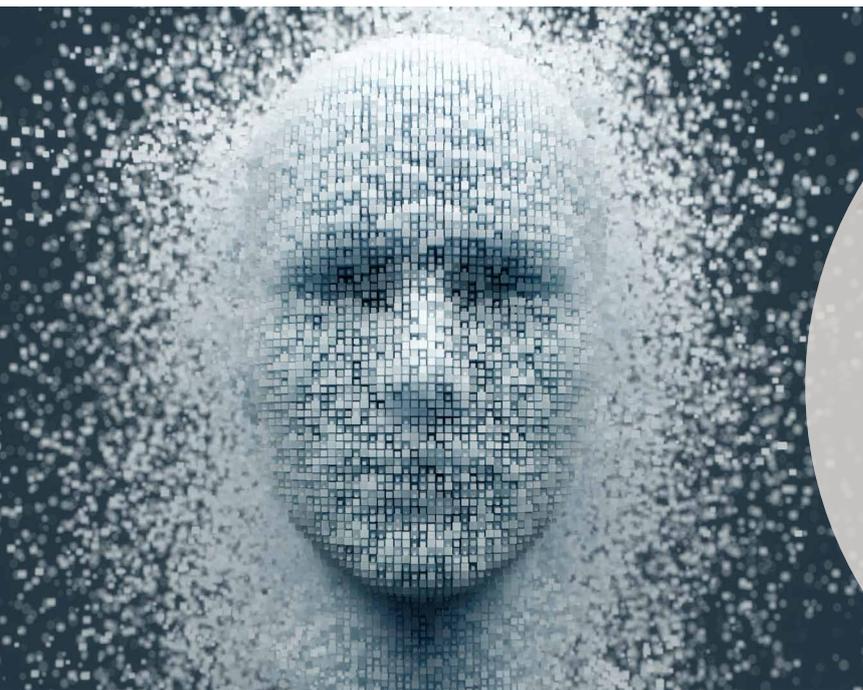
We get assurance that the systems are working as they should. EG Ines frees up the experts' time to solve problems, saving both working hours and enabling them to fix issues quickly.

Antti Kokkonen, Building Services Manager, Kesko PLC

EG Ines found optimisations

I'm just thrilled: EG Ines found optimisations for ventilation schedules and suggested new settings for them based on the measurement data.

Aki Paavola, Maintenance Manager, S-Pankki Kiinteistöt Ltd.





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