



Saving energy together

Senate Group's Energy Saving Programme
2022-2023

An extensive Energy Saving Programme in government premises 2022–2023

Due to the energy crisis caused by Russia's war of aggression, prices for electricity and heat are on the rise, and justified concerns have been expressed about the sufficiency of electricity in Finland. During the autumn and winter of 2022–2023, Senate Group, which is responsible for managing the property assets of the Finnish state, will implement an extensive Energy Saving Programme in government properties to help Finland through the tough winter ahead and to curb the rising cost of energy. The goal of the Energy Saving Programme is to save 50–75 GWh of energy and as much as EUR 10 million in energy costs. The goal was outlined by the DDH ministerial working group chaired by Minister Paatero.

Over the years, the Senate Group has taken various measures to improve energy efficiency in its premises, so finding new energy saving opportunities can be difficult. The Energy Saving Programme introduces measures that can be implemented quickly using a centralised property management operating model.

In addition, site-specific measures will be implemented in close cooperation with customers. All measures will be carried out in such a way that does not compromise the health and safety of the premises.

Along with energy saving measures, technical solutions will be implemented to reduce electricity consumption during the peak demand hours, when the risk of power outages and the stock exchange price of electricity are high. The promotion of renewable energy production, such as the construction of solar power plants, will also be continued.



Let's save energy together

The energy crisis affects the whole of Europe. Due to the Finnish energy system, we are in a better position than many Central European countries, but the coming winter will be challenging in Finland as well.

The significant increase in energy costs and concerns about the sufficiency of electricity call for decisive action. The Senate Group is responsible for approximately 9,000 state buildings, which account for a large part of the entire state's energy consumption. We want to take responsibility and do our part to help Finland overcome the current challenging energy situation.

We have systematically improved the energy performance of our properties for years, so all straightforward solutions have already been implemented. In the coming winter, we will also introduce measures that have an effect on the conditions of the premises, such as temperature and lighting. All measures will be carried out in such a way that they do not compromise safety or, for example, indoor air quality in the premises.

Centralising the management and maintenance of the premises allows us to implement a wide range of measures quickly and efficiently.

Our operations are based on close cooperation with customers, i.e. the users of the premises. This is also the case in our Energy Saving Programme – we listen to the ideas and thoughts of the occupants to find the best solutions.

*We are all ready to take part in this important work.
So let's combine our efforts and save energy together!*

Jari Sarjo, President and Group CEO, Senate Properties



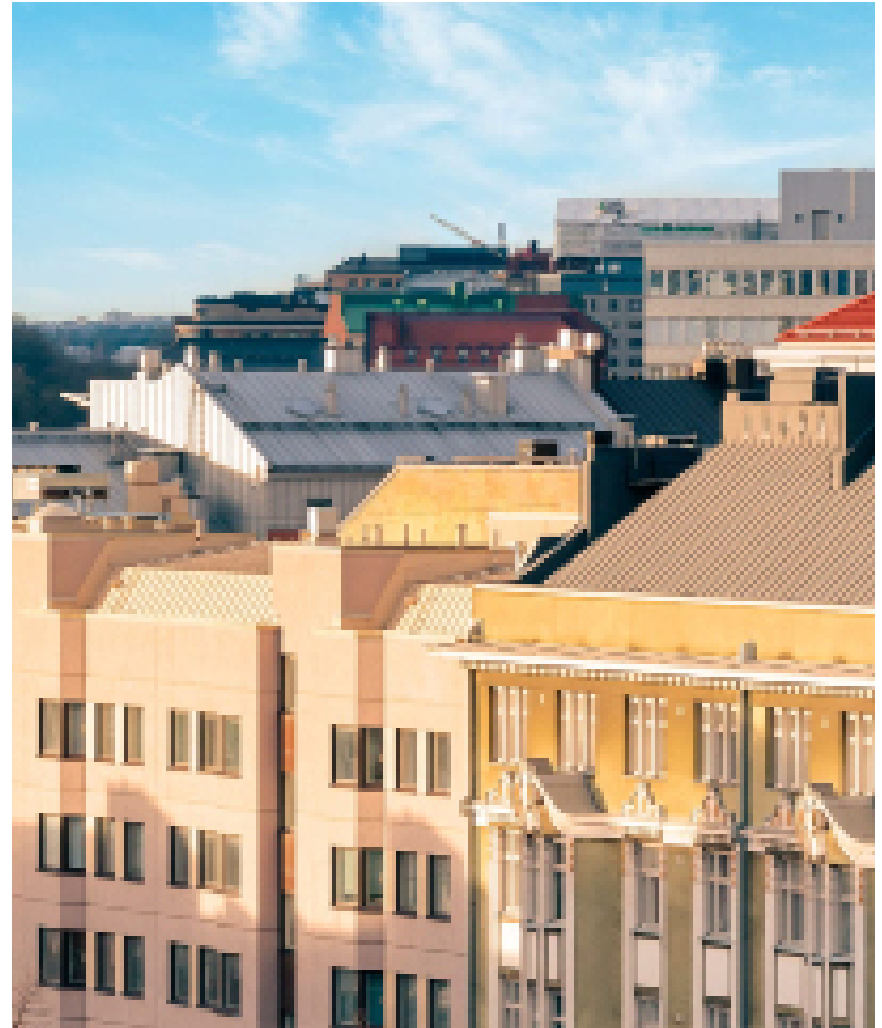
The significant role of energy consumption in government buildings

Government buildings managed by the Senate Group account for a significant part of the government's energy use. The annual energy consumption amounts to a total of approximately 1,000,000 megawatt hours. Currently, the annual energy costs are approximately EUR 100 million, but the price level and costs are on the rise.

Energy costs make up a significant proportion of state property costs: about a fifth in the buildings of Senate Properties and about a quarter in the buildings of Defence Properties Finland.

Thermal energy, i.e. district heating, accounts for about 60% of the total energy consumption in government facilities. The share of electricity is about 40%. In a typical office building, about half of the thermal energy is used for heating the premises and about half for heating the ventilation air.

Most of the electricity is used on ventilation systems and other building services engineering systems, such as pumps, fans, etc. About a third of the electricity consumption is attributable to electricity use by occupants (computers and lighting).



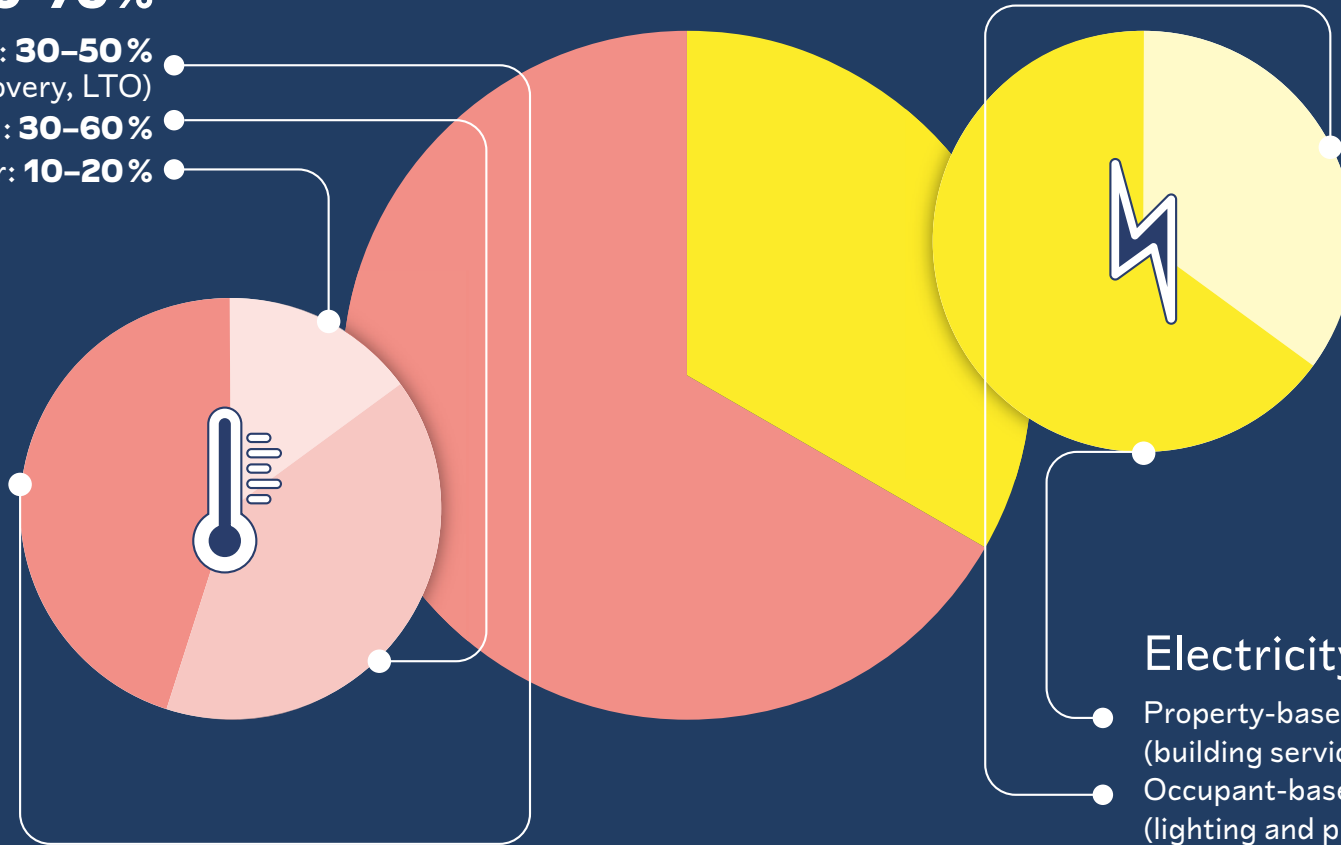
Estimated distribution of energy consumption in government offices

Heating **60–70%**

Ventilation air heating: **30–50%**
(on-site heat recovery, LTO)

Room heating: **30–60%**

Hot water: **10–20%**



Electricity **30–40%**

Property-based **60–70%**
(building services engineering systems)

Occupant-based **30–40%**
(lighting and plug sockets)

Striving for extensive energy savings and a reliable supply of electricity

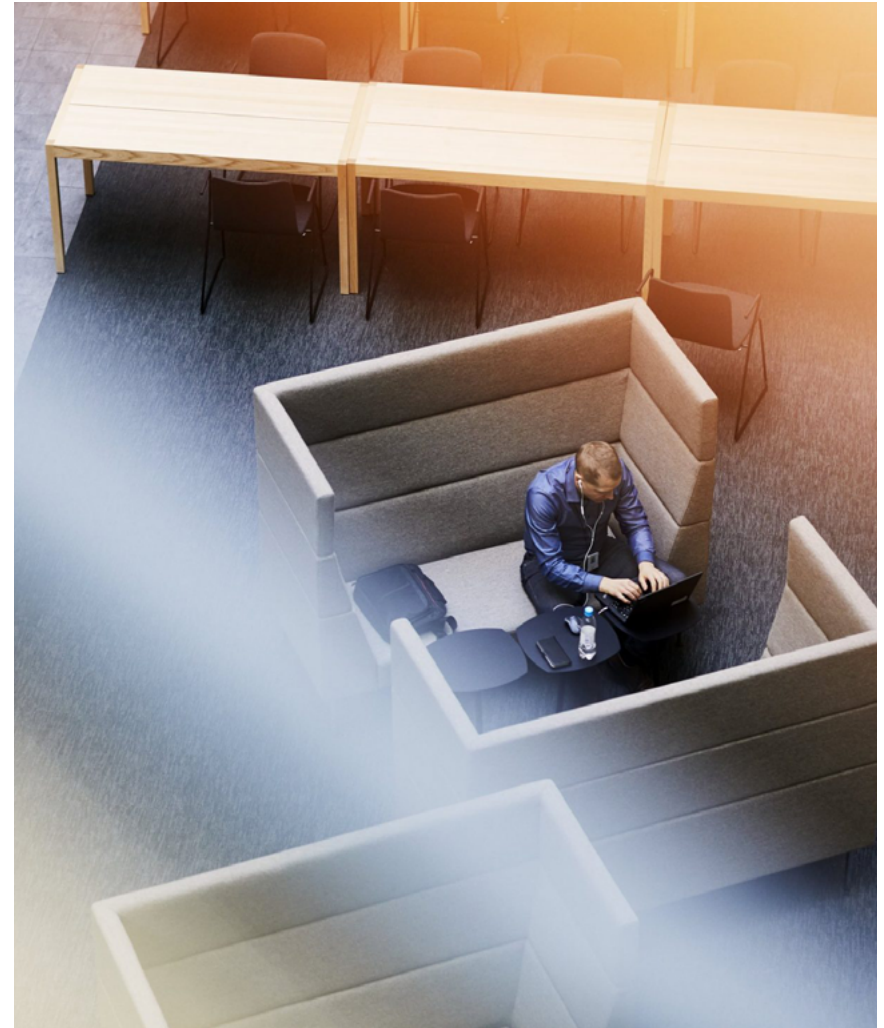
The goal of the Energy Saving Programme is to reduce energy consumption by 50,000–75,000 MWh, which corresponds to the annual energy consumption of approximately 4,000 electrically heated single-family houses or nearly 10,000 one-bedroom flats.

The financial goal is to save up to EUR 10 million in energy costs to curb the steep rise in energy prices.

The programme also aims to identify and implement solutions related to demand-side management that can be used to quickly reduce electricity consumption or shift electricity consumption to off-peak hours in the event of electricity shortages. Shifting consumption away from peak hours also brings financial savings. In addition, solutions related to backup power systems will be introduced, in particular in the operations of Defence Properties Finland.

The programme also includes testing and introducing new operating models, such as energy audits of buildings. In accordance with the guidelines of the Parliament of Finland, the Senate's role is to act as a forerunner in promoting responsibility and energy-efficient operating models in the real estate industry.

Continuous communication with customers and the occupants of the premises is important for the effective implementation of the Energy Saving Programme. The goal is to involve customers in the planning and implementation of energy saving measures and to implement the programme in such a way that does not compromise the current high level of customer satisfaction.



Pillars of the Energy Saving Programme



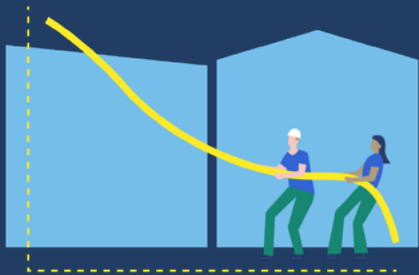
Quick energy saving measures

- Saving measures related to building services engineering systems implemented by property management
- Lowering room temperatures (to no less than 20.5 °C)



Demand-side management

- Exploring possibilities to shift electricity consumption away from peak hours: adjustments and backup power, if necessary



Customer engagement

- Collecting customer feedback and implementing site-specific measures
- Information and guidance from property managers



New energy saving solutions

- Energy audits
- Solar energy and heat pumps
- Digital solutions
- Long-term solutions

Centralised and efficient energy saving measures

Most of the “fast-track” energy efficiency measures are related to the properties’ technical systems and will be implemented by property management.

The settings and performance of building services engineering systems will be checked from the point of view of energy efficiency (heat recovery, supply air temperature, operating times, separate heaters, etc.).

Indoor temperatures will be lowered within the limits allowed by the space and the indoor climate classification set by the Finnish Society of Indoor Air Quality and Climate (Sisäilmayhdistys), and the temperatures of cooled spaces will be increased accordingly.

Many facilities have become less frequently used due the COVID-19 pandemic. The operation and efficiency of the necessary ventilation systems will be adjusted according to the actual use of the facilities, and the facilities will be properly ventilated before use. This will save both electricity and heat.

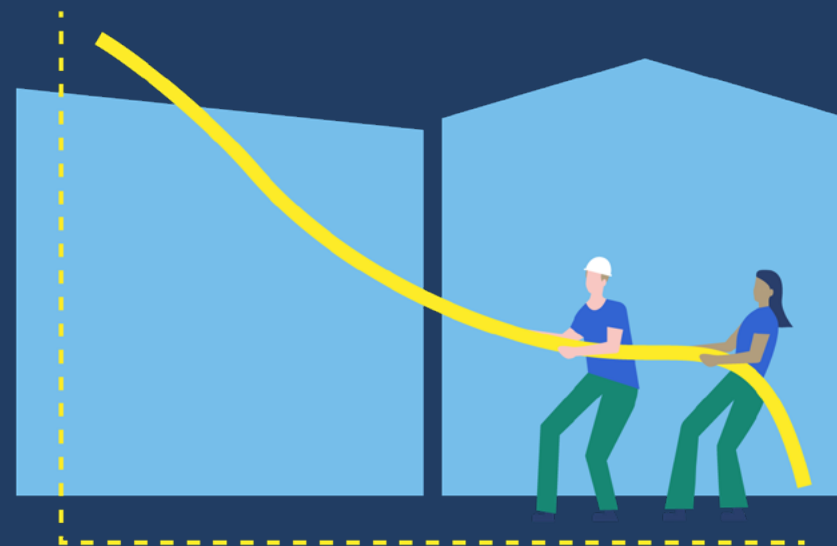
Electricity is saved by adjusting the operating times and level of lighting, and by reducing the operating times of electrical appliances such as stoves, defrosters, or heating systems.



Site-specific solutions based on customer feedback

The occupants of the premises always have the best knowledge of the purposes and requirements of different spaces and the greatest understanding of the operating methods that affect energy consumption. In certain types of premises, such as warehouses and garages, temperatures can be lowered and other changes can be made according to the purpose of the premises. Efforts are also made to find greater energy saving opportunities in facilities that are used less frequently.

Customers are encouraged to participate in the planning of energy saving measures. Ideas and feedback are collected through several channels. A section concerning energy efficiency has been added to the customer satisfaction survey sent to all customers, and more general feedback can be provided on the Senate's website (www.senaatti.fi/en/energy-saving-programme). In addition, site-specific feedback is collected through normal service channels, allowing property management to perform energy saving measures directly based on the feedback. Feedback regarding the premises of Senate Properties can be submitted by scanning the relevant QR-code found in the premises. Feedback regarding the buildings of Defence Properties Finland can be provided directly to the customer support centre.



Preventing electricity shortages through demand-side management

Demand-side management means reducing the use of electricity during peak hours and when the price of electricity is at its highest. The goal is to ensure the sufficiency of electricity in Finland and thus avoid possible power outages. Shifting consumption away from high-cost peak hours also reduces energy costs.

Demand-side management mainly consists of reducing the energy consumption of building services engineering systems, for example, by reducing ventilation and temporarily switching off other electrical appliances. If necessary, backup power solutions are also used.

The occupants of government buildings can participate in demand-side management by turning off non-essential lights, unplugging computers and chargers, turning off screens and monitors, and avoiding printing, copying, and using kitchen appliances.



More renewable energy and new energy solutions

The Senate Group has approximately 60 solar power plants. In accordance with the current solar energy programme, solar power plants are implemented in new locations and existing buildings whenever possible. The combined capacity of the current power plants is about 3,000 KWp. The capacity is rapidly increasing, with approximately 20 new solar power plants being built every year.

Several locations have also switched to geothermal energy, when oil heating has been replaced with renewable energy. Investments in renewable energy will continue in the future as well. With the energy crisis and rising energy prices, the role of renewable energy has become even more pronounced.

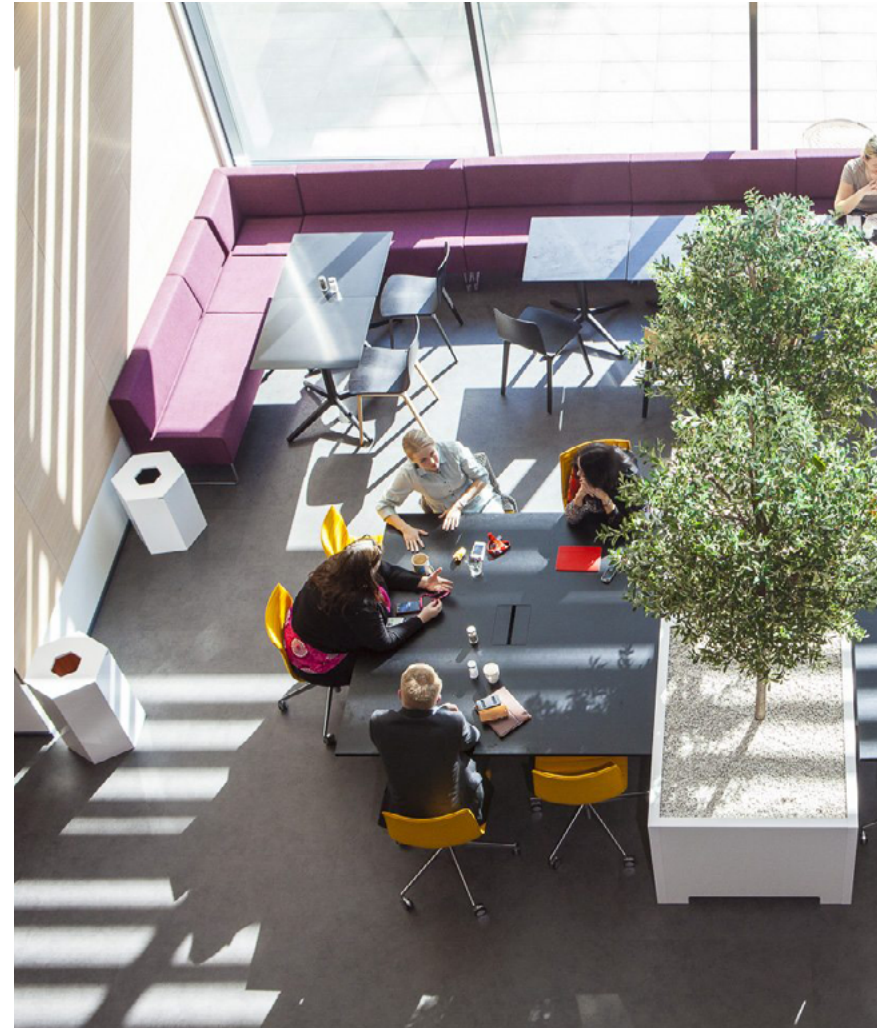
The Senate Group will continue to develop measures to further improve energy efficiency and make greater use of digital solutions. The Senate Group has also developed a new operating model, an energy audit process for buildings, which will be piloted during the autumn of 2022 and introduced nationwide during 2023.



Customer engagement

Getting through the challenging winter requires strong cooperation. We strive to find new energy saving opportunities in collaboration with our customers.

The efficient and purposeful use of government premises is essential from the point of view of energy use. The users of the premises always have the best knowledge of the purposes and requirements of the premises, as well as the possible means to save energy. Special requirements must be taken into account in premises with special conditions, such as museums and laboratories. Also, instead of typical office spaces, energy saving opportunities may be more prevalent in, for example, sports halls, swimming pools, sauna facilities, and various storage facilities. That is why we want to plan and implement the measures in collaboration with our customers and partners.



The programme was launched on 6 October 2022.

This summary report is the first publication of the programme. The actual work started on October 6, when we provided both our customers and Senate Properties' employees with general information about the upcoming measures. Next, our property management professionals will begin the implementation of quick energy saving measures, and our property managers and experts will explore potential site-specific energy saving solutions in collaboration with the customers.

On October 6, we launched a customer satisfaction survey where all our customers can provide suggestions on energy saving measures.

Customers are also encouraged to provide suggestions through the site-specific feedback channels, which send the information directly to property management. General feedback can also be submitted online.

The implementation of the programme is monitored weekly by the project working group and monthly by the Senate Group management. Information about the progress of the programme is regularly communicated to customers and stakeholders.

The results of the measures implemented in the winter season will be reported in spring 2023, when possible follow-up measures for the summer season will also be determined.

Project team

At the Senate, the Energy Saving Programme is planned, coordinated, and implemented by a separate working group consisting of communication professionals and experts from various fields.



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Outi Tarkka,
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Tapio Jalo,
Specialist,
HVAC and Energy, Head of
the Energy Efficiency Working
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Learn more about the Senate's energy efficiency measures



on the programme website, where you can always find up-to-date information about the programme: www.senaatti.fi/en/energy-saving-programme



on Twitter: twitter.com/SenaattiK

Long-term work

The Energy Saving Programme is a continuation of the Senate's long-term energy efficiency work. We have a long and successful history in improving the energy performance of government offices. Our goal is to promote energy-efficient construction and create low-emission work environments.

Energy efficiency is factored into every renovation and new development project we undertake, and we systematically improve the energy performance of our properties in connection with repairs and regular maintenance:

- **Technical measures** play a critical role in energy efficiency: we always ensure the optimal performance of the heat-recovery, heating and ventilation systems in our properties. We are always

looking for opportunities to upgrade to more energy-efficient fans, heat pumps, LED lights, windows and doors as well as to make our buildings more airtight and better insulated. We use real-time indoor climate monitoring software, and all our building services engineering systems are remotely controlled to ensure optimal conditions and energy efficiency at all times.

We are among the signatories to the 2017–2025 Voluntary Energy Efficiency Agreement for Offices, through which we are involved in around one hundred energy saving initiatives each year.

- **Property management** encompasses the continuous monitoring of energy consumption and indoor air conditions. As part of the Energy Saving Programme, our property managers have been instructed to check that HVAC and electri-

cal systems are delivering optimal energy performance and to adjust the operating times of lighting, ventilation, and heating systems.

- **Renewable sources of energy** have a more and more prominent place in our energy mix every year. We have been installing solar panels on our buildings since 2020, and we now have 60 properties that are solar-powered. We switched to buying exclusively green electricity in 2018 and introduced carbon-neutral district heating to our properties in big cities in 2021. Renewable sources of energy account for 76% of the total energy consumption of the properties we manage.
- **Use of space** in our buildings is optimised in accordance with the Government Premises Strategy.



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www.senaatti.fi