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POWER FROM **THE SUN**

Solar power is emissions-free and cost-free energy. The annual solar electricity production in the southern parts of Finland is on a par with that of Germany.

Text Anna Kauhala | Photos Kirsi Tuura

In an estate of small-scale housing in North Helsinki, the four solar panels on the south side of the roof of a wooden house built in 1954 produce electricity at best to the tune of 900 kilowatt hours a year. An average house without electric heating consumes about 5,000 kilowatt hours a year.

“An ideal climate for solar panels is not hot and sunny, but cool and sunny. When a panel heats up, it does not produce electricity as effectively,” says Product Manager **Hanna Veräjänkorva** from Helsingin Energia.

Solar energy is emissions-free, and once the panels are installed, also cost-free. The useful life of the panels is about 30 years, in other words they last as long as the average roof. Veräjänkorva says that the panels require no maintenance.

Solar electricity is a sustainable form of energy that beats wind power, for example, in one important way: solar panels can be installed on almost any roof or even a fence or wall, and they do not spoil the landscape or create noise. Moreover, building or planning permission is not usually required. Nevertheless, there are still differences between local authorities in permission practices, so you should always check with your own municipality.



» **AS NO SOLAR ELECTRICITY** is generated without the sun, the panels are not much use in midwinter. November, December and January are a quiet time for solar energy, and in winters with high snowfall the snow collecting on the panels hinders their functioning also in late winter.

For the panels to produce as well as possible, they should be positioned on a south-facing side of the roof. An ideal position is an unbroken, south-facing roof surface that is not shaded by large trees, chimneys, or obstacles like a tall building next-door. If one of the panels is in the shade, it affects the output of the whole system.

Therefore, the first step in becoming a small-scale solar electricity producer is to call the experts to the site. They will assess whether or not a solar power system is worth installing in the house and its correct output. Helsingin Energia offers its customers a full-package service, including, as well as the panels, the inverter, panel-fixing frames, cabling and installation.

The northern location is compensated by the nightless night during the summer and lower temperatures.

When planning the system, Helsingin Energia endeavours to determine the size of system that best suits the customer. The plan takes into account the power consumption to date, as well as any possible changes in the future.

The intention is that the system is planned the correct size so that it does not produce much excess electricity – unless the customer particularly wants a system larger than his consumption. The excess production can be sold back to Helsingin Energia. Solar energy is part of the carbon-neutral future, which Helsingin Energia wants to support.



“I wanted a solar power system because I want to reduce my electricity bill,” says a house owner Veikko Holmström.

Choices in daily life

AFTER AN EVENTFUL DAY AT WORK, I catch the urban train home. I get no further than the hall before I face the shoe chaos and outdoor clothes left by (not hung on) the coat rack. Three hungry children are waiting, not only for food but also lifts to their various leisure activities.

I don’t always have time to think thoroughly of all my choices. Sometimes it’s more important to get food on the plates fast, rather than worrying over whether or not it is ecological. I appreciate it if my grocer has had the foresight to worry about it on my behalf. My choices are led, within reason, by the size of the carbon footprint left by the service or product. It is good to stop and think about climate and environmental impacts whenever possible.

We at Helsingin Energia want to be part of our customers’ daily lives by considering the environment in our own choices. We already produce power and heating for homes through the world’s most efficient cogeneration, but we aim even higher. Our future will be carbon-neutral.

Let’s enjoy good daily lives!

Maiju Westergren
Environmental Director



COOL SUMMERS AND WARM WINTERS

Cool technology that is unique worldwide flows through the radiators of an apartment in Töölö, Helsinki. The city residents do a great service to the environment by using district cooling.

Text Linda Pynnönen | Photo Anni Koponen

A 90-year-old apartment block conceals modern technology. Four years ago, the old building had some apartments modernised, with heating and cooling systems that are state-of-the art in terms of energy efficiency.

The residents do a great eco-deed by using district cooling. As the water circulating in the cooling system cools the air in the room, it binds heat produced by sources like the sun and home appliances.

The heat is piped into the city’s communal system, which converts the waste energy for recycling. All the energy recovered this way is environmentally friendly, as producing it creates no emissions. District cooling is not just a factor improving living comfort, but an actual environmental action. Rewarded with the international District Energy Climate Award environmental prize, Helsinki is a forerunner, as similar systems are hard to find around the world.

“The home temperature may even be a matter of health for many city residents,” says **Kosti Koski** from Helsingin Energia.

The district cooling network covers almost the whole of Central Helsinki. It now cools about a thousand residential apartments, as well as hundreds of offices and department stores. The network expands by several kilometres every year, and it can also be extended to demand.

Both new and old buildings can be connected to district cooling. The cooling systems are installed in new buildings practically as standard.

JOINING DISTRICT COOLING does not require any exceptional effort from the housing company, as the process is similar to that of joining district heating. The first action is mapping the cooling output

requirement of the site using an HVAC planner and selection of the technical solutions through which the cooling is distributed into the apartments.

Once the district cooling system is installed and set, using it is trouble-free for the customer. The residents are to keep the terminals in the rooms free of dust, and need not worry about anything else.

“All regulation is carried out by the housing company,” says **Ari Kuosma**, Property Manager at 4, Eteläinen Hesperiankatu in Töölö.

In the building, the ventilation and heating systems are controlled by separate thermostats, so that the interior temperature can be kept constant throughout the year. The apartments are kept warm by district heating and the adjustable under-floor heating installed in all the rooms.

After the adjustments made in the early stages, just the right temperature was achieved. Since then, Kuosma has only heard praise from the residents about the well-functioning system and the comfort it affords.



Pirkko and Esko Varila’s home in Töölö stays comfortable and cool in summer thanks to district cooling.

ECO-FRIENDLY DISTRICT COOLING

District cooling is an environmentally friendly and energy-efficient way of cooling buildings. It is part of a system whereby heat produced by e.g. the sun is recovered from the air in a room, refined into district heating and returned for recycling. The Helsinki district cooling network currently covers almost the whole of Central Helsinki area, expanding every year by several kilometres. Both new and old residential apartment blocks and commercial premises can join district cooling.

STUDENTS ON SAFARI

IN THE SECOND WEEK of June, about 40 young people from Helsinki will attend a Safari. The camp, launched last year, aims to get upper secondary students interested in taking an active part in society.

"Thousands of young people visit us every year. We would be foolish not to think about how to talk to them about energy issues," says **Pirjo Jantunen**, the environmental specialist responsible for the Safari project at Helsingin Energia.

The job is to think how to

concretise figures, is it possible to present energy-saving issues using videos, animations or games?

"Safari is a pretty much one-off opportunity for the young to learn a great deal, to inject new enthusiasm into studying, when you see in concrete terms how things work in real life. If I was an upper secondary student, I would apply for the camp and get my friends to go with me", Jantunen says.

Safari camp 9-13.6, safari2014.fi

MARINA GALKIN-AALTO



How to get young people interested in environmental issues? Students Juho Anttila, organiser Markus Wikholm, Toivo Isoranta and Maija Koivistoinen are working on their ideas.

Coming soon
– energy consumption
on your phone

During the summer, Helsingin Energia will unveil a service for monitoring energy consumption on mobile devices such as phones or tablets. Further information at helen.fi and at the launch on Facebook facebook.com/helsinginenergia.



14 days

District heat consumption monitoring has moved over to remote readings. Helsingin Energia will be billing for energy consumption monthly in arrears. The payment terms for district heating bills as from 1 August 2014 will be 14 days from the date the bill was sent. After the reform, the due date will always be the middle of each month, depending on the day the bill was sent. Because of the reform, the energy consumption of both June and July will exceptionally be due for payment in August.

Why does district heating cost less in summer than in winter?

The price of district heating in the summer is about half the winter price, because it is cheaper to produce. In winter heating is needed more, and more expensive production units are also used to generate it.

For many, the average annual cost of district heating is lower than their phone bill. In a new 100 m² apartment requiring little heating, the cost of district heating works out about 20 euros a month.



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District heating

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