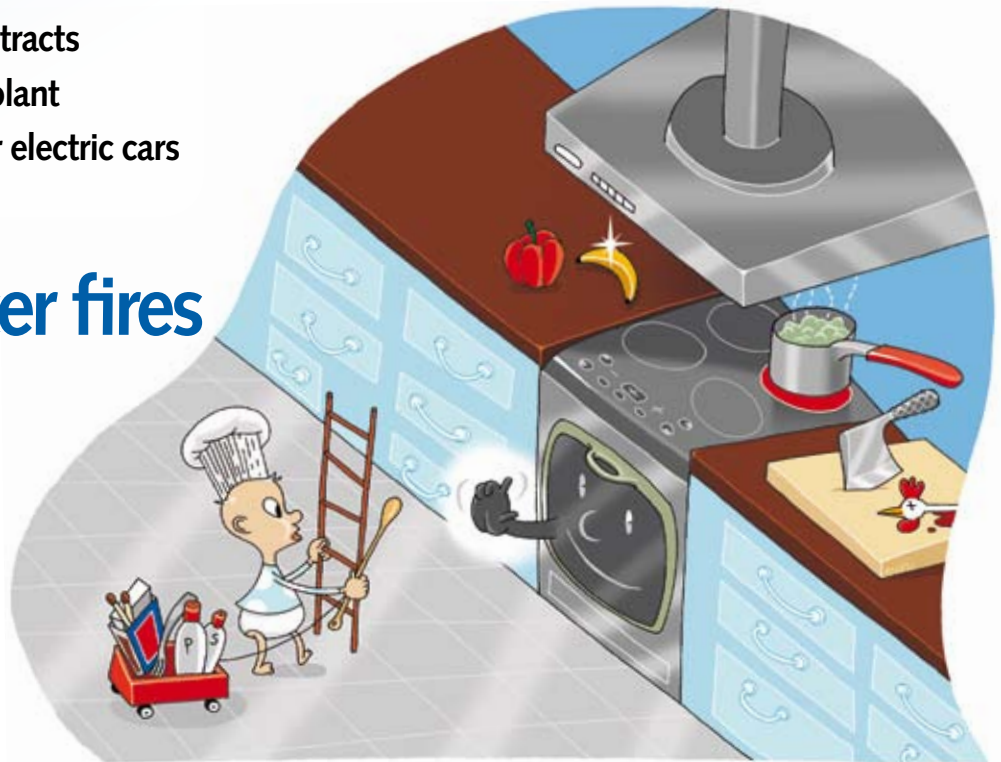


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## 1 Avoid cooker fires

Every year, there are 400–500 cooker fires in Finland. By taking care and using cooker safety devices, these fires could be prevented.



An induction stove is very safe, as it requires a magnetising steel pan to become hot. It will not become hot if a panholder is dropped on the hotplate while the power is on. On the other hand, an induction stove heats certain foods, such as oil, extremely quickly to ignition temperature.

There are also safety stoves on the market, with a power lock and timer. The power lock prevents a child from accidentally turning on the power to the cooker or oven. The stove is not turned on if the usage time is not set on a separate dial. The power to the stove is cut off automatically at the end of the selected usage time.

### Cooker safety devices

It is also possible to install safety devices on cookers later. A hob and cooker guard prevents children from pulling hot pans over themselves. It also stops a child or a dog reaching up to the cooker from turning it on. Hob guards are sold by home appliance stores.

**Anne Korhonen, Anneli Reisbacka, and Sari Liski-Markkanen** from TTS Research have examined various post-fixed cooker safety devices that take safety one step further.

Their functioning is either based on time, after the expiration of which the device cuts out the power to the cooker, or temperature, where the power is cut off when the temperature exceeds a certain limit. Some safety devices have both functions.

Cooker safety devices are suitable for almost all cooker types, but they must be installed by an electrician. An exception is Innohome's battery-operated Hellahälytin cooker alarm, which you can install yourself in the cooker extractor hood. It sounds an alarm if the cooker overheats or a hotplate is left on. However, it does not turn off the power from the cooker, but requires Innohome's smart cooker guard Älyhellavahti as its partner. It in turn reacts to the sound of the alarm and cuts out the power.

### Usage time must be set carefully

“From the point of view of using the cooker, it is essential to set the usage and power cut-off times appropriately. If the usage time is set too short, the device may hinder normal cooking. Too long a time, on the other hand, increases the risk of danger situations”, says Anne Korhonen.

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## 2 Energy efficiency is key to climate issue

The International Energy Agency IEA estimates that the contribution of renewable energy sources in slowing down the climate change by 2030 will be 25%, whereas the importance of energy efficiency will be all of 50%. Few people realise that without the improvements in energy efficiency in the period 1970–2006, energy consumption in the EU would now be one-third higher.

Thus, the potential is huge, but why have actions to date remained at a rather modest level? More energy-efficient technologies and equipment are available off the shelf, so that at least the unavailability of the technology cannot be the reason. Neither can the price be an obstacle, since energy efficiency is usually the most cost-effective way of reducing carbon dioxide emissions.

Maybe the major reason lies in the fact that no great single method or solution exists, but all the players must do their bit, both individual consumers, businesses providing them with products and services, and also local authorities and government decision-makers. A strong common strategic intent is required in order that the enormous potential vested in energy efficiency may be realised in slowing down climate change.

Helsingin Energia is committed to improving the efficiency of both its own and its customers' energy usage. We can already strongly demonstrate improvements in the efficiency of energy usage both in production and of our clients, and we want to continue as forerunners also in the future. We aim to develop and deploy new innovative services to promote our customer's energy saving.

It is our hope that in the future, energy efficiency will be taken as much for granted by us all as the electricity on stream from the plug, hot water running from the tap, or a building with district heating today.

Rauno Tolonen

Senior Adviser,  
Energy and the Environment



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Safera's Premium model with a child lock not only prevents the cooker from being accidentally left on, prevents it from overheating, but also automatically puts out a fire caused by e.g. burning fat. The extinguisher unit is installed in the cooker hood extractor flue. For the time being, Safera is only suitable for certain cooker hood models. It may also be too technical for the elderly and for people with impaired memory.

### Comparing is not easy

The researchers conclude that cooker safety devices are easy to use, and you can change the factory settings yourself afterwards.

Cooker safety devices cost from a hundred euros upwards. The most expensive is Safera's Premium model which also puts out a fire. It costs about 750 euros excluding the cooker hood, but on the other hand this is a small price compared to the expense caused by a fire. Many insurance companies allow discounts from home insurance if there is a safety device in the kitchen.

The consumer should have the opportunity of comparing different cooker safety devices to be able to choose the one most suitable. Comparing them in the purchase situation may be difficult.

"All safety devices are not sold in retail stores, but they have to be bought from manufacturers, importers or appliance services. The population most in need of safety devices does not use the Internet, and simply does not know about them.

Although safety devices improve the user safety of the cooker, Reisbacka and Korhonen believe that there is much room for improvement in the devices currently on the market. ■

Further information in the TTS Research leaflet "Laitteita liesipalojen ennaltaehkäisyyn – liesiturvalaitteiden vertailu" [Devices for the prevention of cooker fires – comparing cooker safety devices].

The leaflet may be ordered for a fee from TTS Research, [www.tts.fi](http://www.tts.fi) or tel. +358 (0)9 2904 1200.

Cooker safety devices are on display at the Functional Home exhibition at Käpyläntie 13, Helsinki, tel. +358 (0)9 310 80 353, [www.toimivakoti.fi](http://www.toimivakoti.fi)

### Take care in the kitchen

- watch the cooker and oven during use
- turn off the power after use
- do not keep anything on the cooker or in the oven
- make sure there is nothing flammable near the cooker, such as panholders
- keep a fire blanket in the kitchen

# 3 Which product from your plug?

Helsingin Energia offers the customer various electricity contracts and their combinations.

Perthi Suvanto Photo iStock

The majority of consumers have chosen the familiar and secure permanent contract.

As far as possible, Helsingin Energia tries to even out the prices of the *contract for an indefinite period* by hedging the electricity price against market price fluctuations for several years ahead. However, the electricity price under the contract for an indefinite period follows the market price of electricity.

“It is always possible to change the contract for another type”, says the head of HelenSähkö Unit, **Jussi Mikkola**.

The contract for an indefinite period is easy and economical in the long term, but it does not guarantee cheapest electricity at all times.

## Sinetti

Helsingin Energia’s fixed-price electricity contract designed for households is called *Sinetti* (Seal).

Under it, the sale price is sealed at a certain price for a year or two years at a time. During that time, the sale price does not go up or down, however much the market price of electricity changes.

The Sinetti contract is suitable for homes that value stable electricity prices. For an additional charge, another option for the electricity consumer is Turvasinetti, whereby he can swap his Sinetti contract for a new one once during the contract term, should the price fall significantly during the term.

Recently, the price of electricity has been low due to the recession and the autumn rains. That is the time to seal the contract, when the price has hit a trough and a rise is expected.

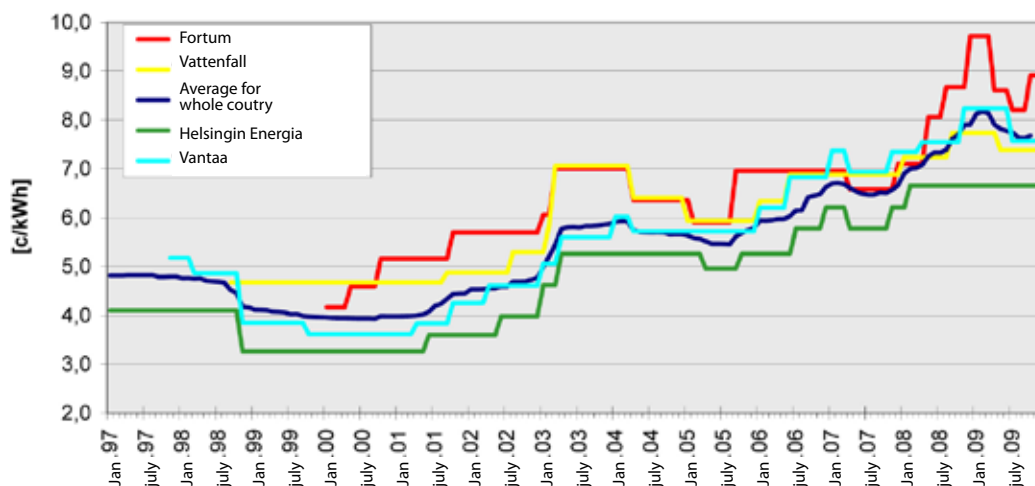
## KotiSpot

Exchange electricity is suitable for households wishing to pay the current market price. At Helsingin Energia, the domestic exchange electricity has been named *KotiSpot*. The customer pays for the consumed electricity on the basis of the actual price at the electricity exchange.

The price of electricity and the size of the bill may vary quite a lot from month to month. The price is affected

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Electricity sale price for resident in apartment block 1997–  
(annual electricity usage 2,000 kWh, price incl. VAT 22%)



After early 2008, the market price of electricity has risen strongly. Despite this, Helsingin Energia has held its prices at a reasonable level. Although the electricity market price has fallen during 2009, and many companies have reduced their prices, the price level at Helsingin Energia is still competitive.

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by a number of factors, such as the water situation in the hydropower plant area of Sweden and Norway, the prices of emission allowances, oil and coal, rain forecasts, temperatures and wind conditions, as well as power station shutdowns.

The KotiSpot electricity contract is a good choice when the electricity market price is taking a strong downward turn. In such an event, the prices of other electricity products do not necessarily react to the drop in price as quickly as the KotiSpot contract. In an opposite situation, the KotiSpot electricity contract prices are the first to react upwards. The contract has been concluded for an indefinite period, so it can be swapped for Helsingin Energia's other electricity products.

### Electricity baskets

If the risks attached to the exchange and Sinetti electricity look like a scary prospect, Helsingin Energia is the only company in Finland to offer electricity baskets with which you can protect yourself against market price rises.

There are two baskets. Both baskets are half-filled with a contract for an indefinite

period. For the other half, there is a choice of either the Sinetti contract or KotiSpot. In the *Sinetti Electricity Basket*, half of the electricity price is fixed for two years. In the *KotiSpot Electricity Basket*, half of the electricity price is determined directly by the electricity market price.

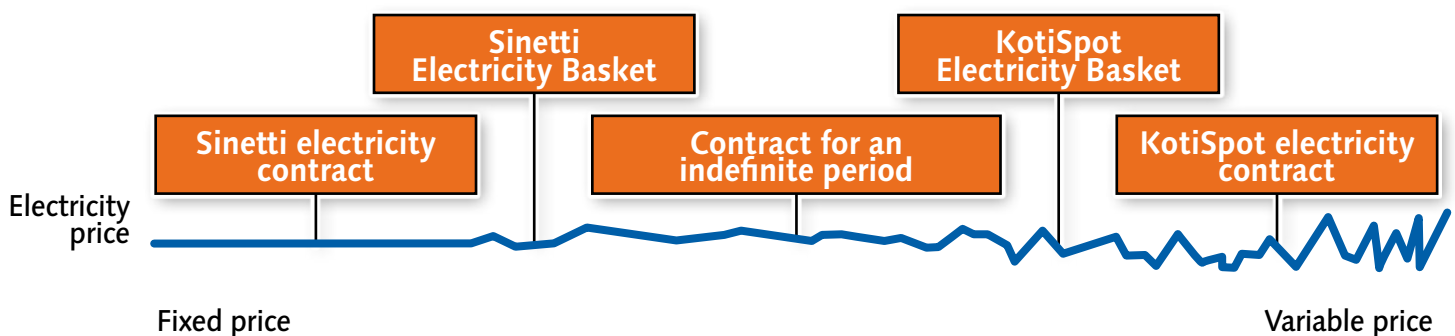
“The idea of the baskets is to utilise the good aspects of the contracts and to break the back of the downsides, so that they are not realised 100 percent. Electricity baskets will become much more popular in the future”, Mikkola forecasts. ■



### Origin of electricity

Helsingin Energia's retail business, HelenSähkö, purchased 86 percent of the electricity it sold last year from the electricity exchange. Of all the electricity sold to retail customers, 59 percent came from renewable energy sources, 22 percent from nuclear power, and 19 percent from fossil fuels.

## Electricity products for domestic customers





## ④ At Klåsarö hydropower plant

**Klåsarö power station has worked for a century to extract as much power as possible from running water.**

Pertti Suvanto Photo Helsingin Energia

In the yard of Klåsarö hydropower plant in Pyhtää, two red-brick buildings stand side by side over the running water. The old hydropower plant plunges you back a hundred years of history. The new power station, on the other hand, offers the state-of-the-art technology of the modern world. The old power station closed down in 1983. The gable end of the building proudly displays the year of completion – 1909. For anyone thirsting for aesthetic engine romanticism, the place is a fantastic experience.

### More security with the new

The river Kymijoki has flowed along its present bed for more than 4,700 years. Its many rapids were originally harnessed to fulfil the electricity needs of the wood processing industry. Consequently, there are more than a dozen hydropower stations along the river. It is part of the cultural landscape of industrial Finland. The average annual energy output of the Kymijoki hydroelectric plants is today about 1,250 gigawatt-hours, of which the share of the four plants of Oy Mankala Ab, owned by Helsingin Energia, is 290 gigawatt-hours or roughly 23%.

The fall of the new Klåsarö power plant, situated a good hundred kilometres from Helsinki on the western branch of Kymijoki, is three metres, and the annual energy 30 gigawatt-hours. It would cover the power requirement of 1,200 electrically heated single family houses. The plant's electricity is sent to the national grid. There are two turbine-generator combinations. The output of the present plant is about 5 megawatts, while the old plant only reached 1.8 megawatts.

The plant was re-automated a couple of years ago. The water volume flowing through the power plant is regulated by the level of the lake Tammijärvi a couple of kilometres away, which must remain within the set upper and lower limits. Most of the time, it is at its upper limit of 14.86 metres above sea level. At this level, the efficiency of the plant is optimal. If the level falls, the plant automatically lets through less water, and similarly vice versa. In spring, at sowing time, and in autumn at harvest time, the lake surface is kept lower: this helps farmers' fields dry out and makes the work easier.

Klåsarö plant is capable of letting through about 200 cubic metres of water per second. Usually after the snow melt there is a lot of water, and it is sometimes necessary to run it through the Paaskoski sluice gates past the power station, and if even this does not suffice, the two water channels of the old power station are taken into use. The plant is remote-controlled from the Helsingin Energia central control room. As well as to the control centre, the alarms are also linked to the men's mobile phones.

### Form of renewable energy

In Finland, the share of hydropower of all electricity generation is slightly under 20%. Helsingin Energia produces hydroelectric power at the Vanhakaupunki bay in Helsinki, as well as at the four hydropower plants on Kymijoki. Helsingin Energia also obtains hydropower via Etelä-Pohjanmaan Voima Oy and Kemijoki Oy. Kemijoki owns 20 hydropower plants, of which 16 are in the Kemijoki waterway, two in Lieksanjoki and two in Kymijoki.

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Although no new hydropower plants are under construction, the existing plants are investing in renovations and power upgrades. The power upgrades will increase annual energy production by the year 2017.

In Finland, hydropower is the most important form of renewable electric energy. It is emissions-free and has a direct impact on averting the climate change. Enormous energy resources are held in water.

“The hydropower process itself is simple and requires little maintenance. We have slowly turning machines, if you compare them to steam turbines, for example. The power upgrades continuously increase the annual production of renewable and emissions-free energy”, says **Matti Virtanen**, Director of Hydropower Production at Oy Mankala Ab.

One of the functions of hydropower is to act as so-called regulating power.

“Power is always produced at the same rate as it is consumed. If one more light bulb is turned on, an equivalent volume of output must be fed in. Hydropower is quick to regulate – it rises in a couple of minutes from minimum output to maximum. That is why hydropower is important and will be more so, when there is more wind power in Finland”, Virtanen forecasts. ■

## 5 Charging point for electric cars for Kampppi

Helsingin Energia is opening the first charging point for electric cars at Sähkötalo in Kampppi at the beginning of December. The 43-kilowatt power point will charge an electric car battery in half an hour.

Helsingin Energia and Peugeot are jointly bringing two electric cars to Finland. The car will travel for 160 kilometres on a single charge.

Helsingin Energia's Research and Development Director **Jussi Palola** believes that Helsinki could be a forerunner in vehicle electrification. However, the prerequisites are at least a functional charging network and relief in the taxation of electric cars.

Palola calculates that if half the cars in the capital city traffic were rechargeable electric cars, about 500 gigawatt-hours of electricity would be required. This is equivalent to about 10% of Helsinki's electricity consumption.

According to Palola's calculations, a hundred kilometre trip by electric car costs the motorist about 2 euros.

“If electric cars became common, it would have a significant effect on the climate. With electric vehicles and renewable energy, carbon emissions from road transport could fall to a fraction of current levels”, Jussi Palola notes. ■



## ● AT YOUR SERVICE Service numbers and price info

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www.helen.fi

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