

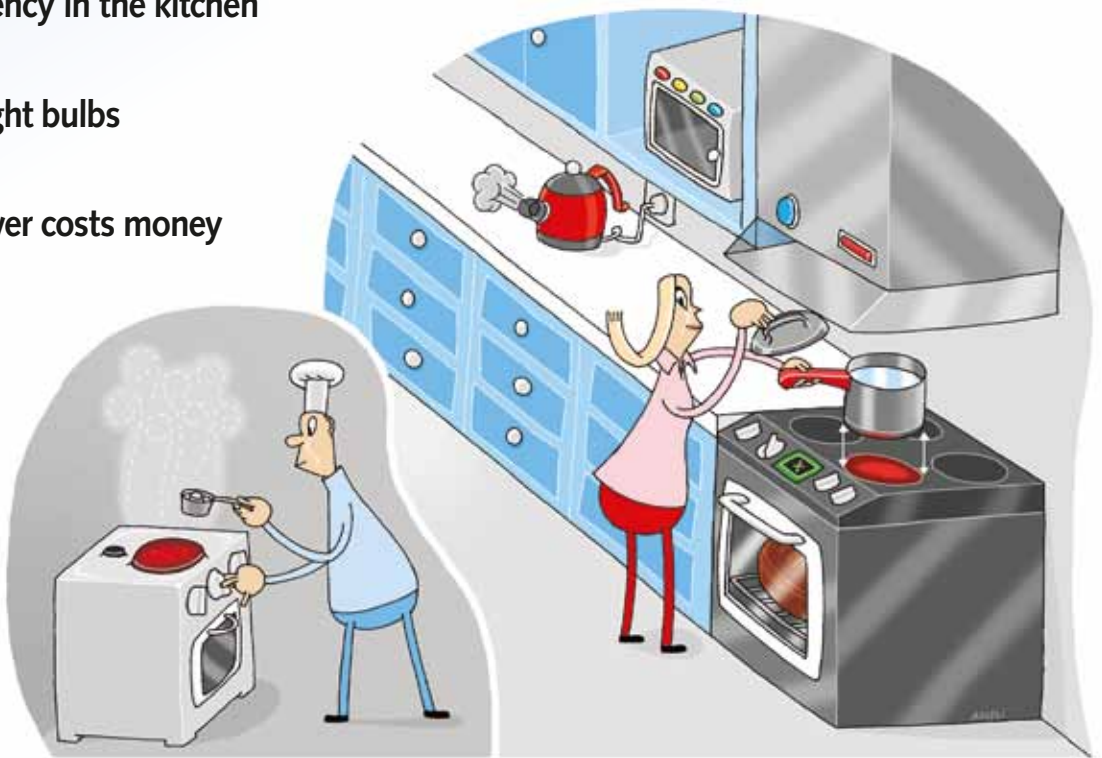
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## Cook and save energy

The smart cook saves a pretty penny by more energy-efficient food preparation habits



Paula Ristimäki Illustration Anssi Keränen

It pays to stop and think whether one's own kitchen routines are the most sensible and energy-efficient ways of working. Energy Adviser **Eva Spiegel** from Helsingin Energia reminds us that even small changes translate to big energy savings.

“Just by using the hob and oven sensibly and making efficient use of the microwave oven, you can save tens, perhaps even hundreds of kilowatt hours of electricity a year, depending on the size of your household. If every one of Finland's 2.6 million households did this, a huge volume of energy would be saved.”

### Make use of pre-heating and residual heat

One of the greediest energy gluttons in the kitchen is the oven. It pays to plan its use carefully. The same heating can be used to cook several dishes. After baking, you can pop in a casserole dish.

The pre-heat and residual heat of the oven can also be used.

“Many dishes, breads and cakes and raw-frozen foods can go in the cold oven as soon as it is switched on”, Eva Spiegel reminds us. This way, the electricity consumption is 10-15% less.

“On the other hand, you shouldn't keep the oven on too long. A casserole dish continues to cook in the residual heat for half an hour after the oven has been turned off. This is worth

making a habit with all dishes. Up to ten per cent in electricity is saved compared to turning the oven off only when the dish is taken out.”

### A good pan and correct hotplate

There are certain tips for using the cooker hob energy-efficiently. Select the hotplate according to the pan base size. The plate and pan bottom should be the same size, or the diameter of the pan base could be even a little larger than the hotplate. This is also true for ceramic and induction hobs.

“A good saucepan has a thick bottom. And of course the bottom must be level and clean”, Eva Spiegel goes on.

Keep the lid on the saucepan and the hotplate on as low heat as possible.

“When the water for quick-cook porridge is boiling on a cast-iron hotplate, the power can be turned off. The porridge will cook on the residual heat under the lid.”

Eva Spiegel also reminds us of using a sensible amount of liquid in cooking.

“Don't boil a larger quantity of liquid in the pan than you need. To boil potatoes, you only need enough water to just cover them.”

*continues on page 2*

## 2 Sizeable investments and new innovations

Helsingin Energia celebrated its centenary last year. Throughout its history, Helsingin Energia has boldly and responsibly made use of new innovations in its energy production. The roots of eco-efficient co-generation and district heating reach back half a century. The impacts of the production on the environment and air quality have been actively monitored, and investments in both production and energy distribution made in order to maximise energy efficiency and minimise emissions.

We have been involved in technological development throughout the company's history. We follow global developments and investigate the potential for applying eco-efficient and climate-saving technologies to our own production, for example by our participation in the Finnish centre of excellence CLEEN Oy.

Utilisation of purified waste water and heat wastage from IT sector server halls in heat production are among the most recent climate-friendly solutions from Helsingin Energia. The increasing use of biofuels, increased construction of wind power, and at a later stage building of a new multi-fuel power plant and carbon capture and storage (CCS) are possible future investments, necessary to respond to the climate challenges set for energy production.

The considerable energy requirement of the capital city will be fulfilled by climate- and cost-saving decentralised co-generation also in the future. District heating is a climate solution for a large output requirement. When the heat required by a large city is produced prudently using energy-efficient solutions as district heating using co-generation, the environmental impacts are best minimised.

The Helsingin Energia development programme towards a carbon-neutral future is under consideration by the city decision-makers as I write this. The sizeable investments in production proposed in the development programme will create the foundation for attaining the set climate targets. In addition to investments directed at production, a lot more energy efficiency is required both in new construction and refurbishing old buildings, and above all in energy use. The most effective way of reducing emissions is through prudent energy use, which we foster through Energy Efficiency Agreements and our Energy Centre.

Seppo Ruohonen  
Managing Director

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### Induction cooker most energy-efficient

When buying a new cooker, it's worth paying attention to energy efficiency. A ceramic cooking surface uses 20% less electricity than a cast-iron hotplate. The king of the contest is an induction cooking surface, which saves all of 35% in energy compared to a cast-iron plate.

The most energy-efficient alternative among ovens is a convector oven that does not need pre-heating.

"In a convector oven, you can reduce the temperatures by 20 degrees from those in ordinary ovens with top and bottom heating elements. You can also put food in the oven on several shelves at the same time. The cooking time is shorter and the oven uses about one-third less electricity than a normal top and bottom-heat oven.

### Use small appliances

Use small kitchen appliances to help cooking. Water boiled in a kettle uses much less electricity than on a hotplate. Toasted sandwiches can be made in a sandwich toaster or microwave oven much more energy-efficiently than in the oven.

"For example, when boiling pasta or potatoes, the water can first be boiled in the kettle and then poured into the pan."

The microwave oven is the most economical alternative for defrosting, heating and cooking small quantities of food. As an example, heating a ready oven-bake meal in the microwave takes only 10% of the electricity required for heating it in the oven.

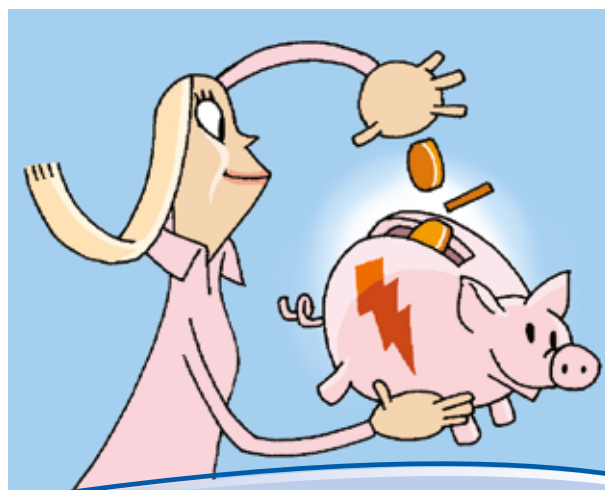
"When the microwave oven whirrs for 10 minutes, 0.2 kilowatt hours of electricity is used. Many dishes can be cooked or heated up in that time. If the same dish is put in the oven, pre-heating the oven to 200 degrees first takes 0.5 kilowatt hours, and keeping the oven hot for an hour 0.7 kilowatt hours. This makes a total of 1.2 kilowatt hours, a whole lot more than when using the microwave", Spiegel calculates.

When the energy-efficient cook moves from the cooker to do the washing up, it's also good to keep a few tips well in mind.

"There is no need to pre-wash dishes under running warm water. A swipe with a rubber spatula or kitchen paper is sufficient."

The dishwasher should also be filled correctly according to the instructions for the machine.

"It is not worth doing half-loads. And the program should be selected according to how dirty the dishes are." ■

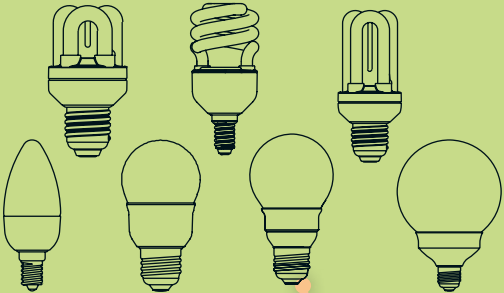


# 3 KNOW YOUR LIGHT BULBS

Incandescent bulbs will soon be history. The bells will toll for 75-watt incandescent bulbs in the autumn, while manufacture of 60-watt bulbs will end in the autumn

of next year. In 2012, all traditional incandescent bulbs of more than seven watts will be banned. The energy-greedy incandescent bulbs will be replaced especially by com-

compact fluorescent light bulbs (CFLs) or energy-saving bulbs. Buying a compact fluorescent bulb is easier if you know what to pay attention to in the bulb store.



## Bulb

Compact fluorescent bulbs come in various shapes and sizes. As well as the large loop models, there are round-domed compact fluorescent bulbs that look like traditional incandescent bulbs. Their lengths may be different from those of incandescent bulbs. The size of the bulb usually grows with increased wattage.

## Watt

The power or wattage reveals how much energy the bulb uses. The greater the power, the more electricity is used. Check your light fitting for the highest permitted wattage of the bulb intended for it.

## Starter

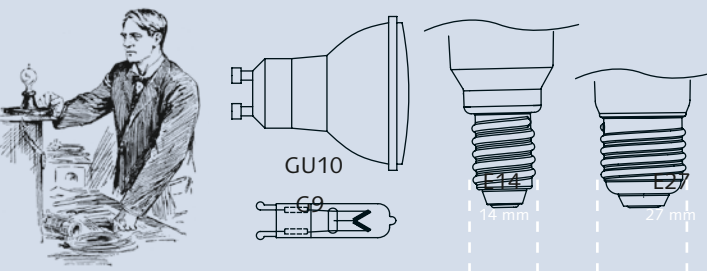
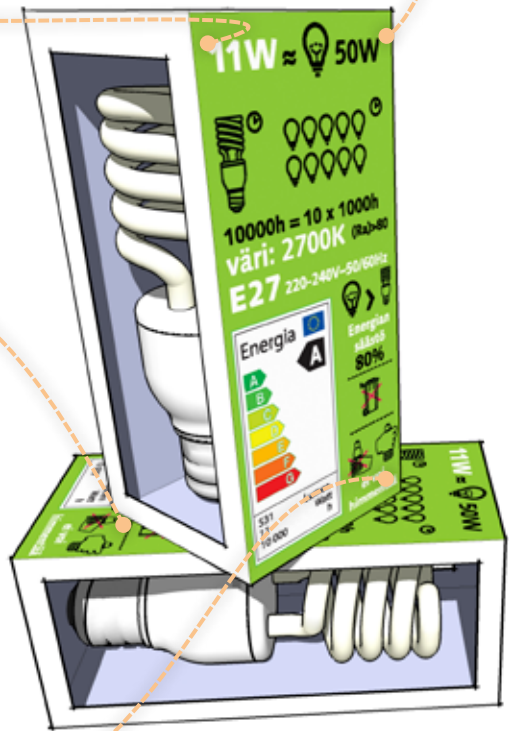
The starter of a compact fluorescent bulb is in the bulb itself and cannot be replaced. Many fluorescent light fittings have a starter which should be replaced when you replace the bulb

## Life cycle

The life of a compact fluorescent bulb is manyfold compared to incandescent bulbs.

### Bulb base

The most common bases are screw bases E14 (small base) and E27 (standard base). The number stands for the base width in millimetres. The letter E comes from the name of its inventor, Thomas Edison. In addition to the screw types, there are various types of pin or bayonet-base bulbs, such as G and GU.

### If a fluorescent bulb is broken

If a cool compact fluorescent bulb or tube is broken, no hazardous mercury vapour is freed into the room atmosphere. Use a piece of stiff paper to collect the shards of glass and other particles into a jar with a lid. Wipe the

floor with a damp cloth. Label the jar with its contents and take it to a hazardous waste collection point. If a hot compact fluorescent bulb or tube is broken, a little harmful mercury vapour is released

into the air in the room. Ventilate the room for 20–30 minutes and leave the room. Then continue as when a cool CFL or tube is broken.

Source: [www.lampputiето.fi](http://www.lampputiето.fi)

## Colour rendering index

The colour rendering index helps to show how true the colour reproduced by the light is. The colour rendering index (CRI) is expressed numerically in the range 0–100%. The greater the value, the more naturally the colours are reproduced. When choosing bulbs, you need to ensure that they have a colour rendering capacity that is sufficient and suitable for the purpose. In homes and offices, a colour rendering index of at least 80 is usually adequate.

## Warm or cool light



The Kelvin or colour temperature expresses the colour of the light emanating from the bulb. The lower the Kelvin value, the warmer and yellower the light. The Kelvin value of the bulb on the left in the picture is about 2,700, which is the same as in an incandescent bulb. A warm light may be a good choice for a living room, to create a cosy atmosphere. Cool and bright light is more suitable for areas where good general lighting is required. A bright bulb is also a good choice for an outside light.

Bulb type	Light hue Kelvin (K)
Incandescent bulb	2 700 K
CFL	2 700–4 000 K
Fluorescent bulb	2 700–6 500 K
Halogen bulb	3 000 K
LED	3 000 K–6 500 K
Daylight	5 500 K



## Energy labelling

Energy labelling expresses the energy efficiency of the bulb on a scale A–G. CFLs are in class A and save up to 80% in energy compared to incandescent bulbs.

Lighting is the biggest single power consumer in the home. Research shows that about 22% of domestic electricity is used in lighting. Replacing incandescent bulbs with compact fluorescent bulbs may reduce the electricity consumption for lighting to one-fifth.

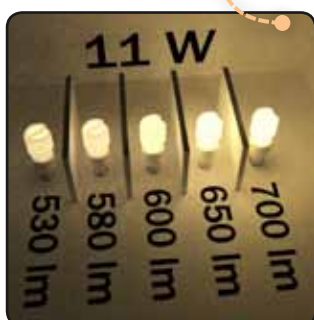
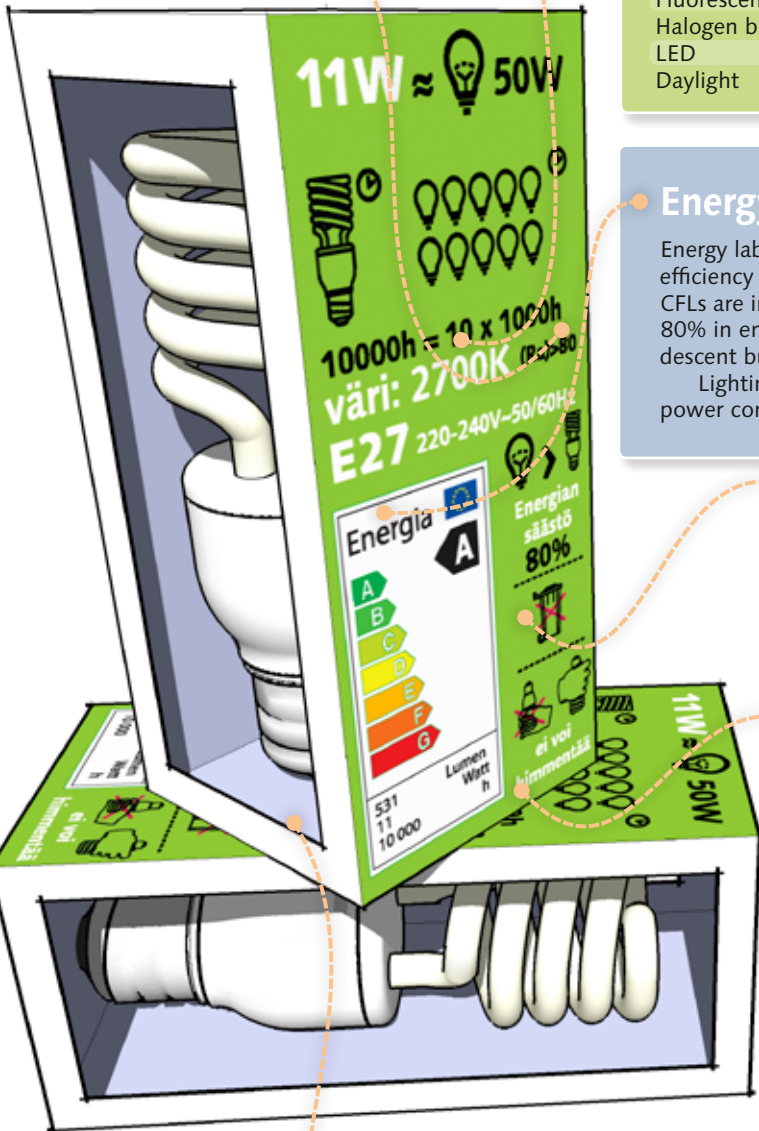
arch shows that about 22% of domestic electricity is used in lighting. Replacing incandescent bulbs with compact fluorescent bulbs may reduce the electricity consumption for lighting to one-fifth.

## What to do with burned-out bulbs?

- Compact and other fluorescent bulbs and tubes to hazardous waste collection point or the shop, if you buy a new bulb. Check at [www.lamputieto.fi](http://www.lamputieto.fi) for shops in your area that take in burned-out bulbs.
- Halogen bulbs into mixed waste.
- Incandescent bulbs into mixed waste.
- LEDs to electrical and electronic waste recycling point.

## Right light bulb for purpose

- Compact fluorescent bulbs are not usually suitable for light fittings equipped with dimmers.
- There is a separate note on the packaging on suitability for dimmers (e.g. Dimmerable).
- Some CFLs can also be dimmed with an ordinary light switch without a dimmer.
- Light fittings with two-light function are equipped with light sensors, so that the light comes on and off automatically depending on the volume of light.
- A frost-proof compact fluorescent bulb is available for cold conditions.



## Luminous flux = lumen

When buying a compact fluorescent bulb, pay attention to the bulb's lumen value rather than wattage. The lumen value is the amount of light radiated by the bulb. For example, if the lumen value of a compact fluorescent bulb is lower than that of an incandescent bulb, the light is dimmer than that of the incandescent bulb.



Incandescent bulb



Compact fluorescent bulb

Power W	Luminous flux lm	Power W	Luminous flux lm
100	1 380	23	1 150–1 500
75	960	20	800–1300
60	730	15	750–950
40	430	11	530–700
25	230	7	260–400
15	120	5	150–250

## Remember the e-invoice

The e-invoice or e-bill is an electronic bill developed by the banks. It is an easy, safe and ecological way of both receiving and paying bills.

The e-invoice is sent to the recipient's Internet bank. There is no need to key in the bill details, accepting the bill is sufficient. If necessary, the due date and amount on the bill can be altered.

While paper bills have a tendency to disappear, an e-bill is automatically filed in the online bank. Neither does an electronic bill create unnecessary paper waste.

A good 12,000 of Helsingin Energia customers have opted for an e-invoice.

You can make an e-invoice agreement with Helsingin Energia in your online bank like this:

When paying a paper bill, select the e-invoice as your billing preference, and from then on you will receive your bills as e-invoices direct to your Internet bank.

Additional information:  
www.e-lasku.info



## The world's lights go out

27 March 20.30–21.30 p.m.

Earth Hour is a worldwide climate campaign for which people turn off their lights for an hour. Helsingin Energia is taking part in the campaign.



Read further and sign up:  
www.wwf.fi/earthhour

## Ever Ready – often needlessly

Household electrical equipment uses power on stand-by, too.

Carefree use of the stand-by function is relatively common in homes. Equipment is left on stand-by for long periods – even over holidays. When it is plugged in and the red eye is glowing, it is using power. All equipment does not even have an indicator light.

Household stand-by consumption is estimated to eat away 5-10 per cent of the total electricity consumption in homes.

The equipment should be turned off at the power switch when going to bed, leaving home for work, or going on holiday. This also improves fire safety.

An effective method is to buy an extension lead with an on-off switch. In the study, you can plug in the computer, printer and other office equipment in the extension socket. The entertainment centre in the living room deserves the same treatment. This way, savings are only a finger click away.

### One watt equals one euro

Estimates vary as to the electricity wasted on stand-by in Finnish households. Virve Rouhiainen, an expert from Adato Energia Oy, believes that an extensive study recently published in Sweden serves as a good point of comparison. Based on this, we might estimate that the average stand-by consumption in Finnish households is about 40 watts. The average number of stand-by equipment in homes is around ten.

If the stand-by is on about half of the time, the total annual consumption in Finnish households is about 440 gigawatt hours. This is equivalent to

about one-eighth of the annual production of the Loviisa nuclear power plant. It would also pay off all the electricity bills of about 20,000 electrically heated households.

There are many different electrical devices in homes and the way they are used may vary a lot. The type of accommodation, life situation and lifestyle show up in the electricity consumption. But how much are the slumbering devices in my home really costing me? Motiva's leading expert, **Kimmo Rautiainen**, offers a good rule of thumb. One watt of stand-by power is equivalent to about one euro in a year.

So, the Ever-Ready power glutton wastes several dozens of euros a year in any case.

The energy wastage caused by stand-by is slowly being brought under control also in Finland, due to the EU Directive that came into force in January. According to the new regulations, the maximum permitted stand-by consumption of new devices coming into the market is one watt and only half a watt in 2013. The consumption of equipment currently in homes is often up to ten times as much.

#### STAND-BY WATTAGES:

TV	1–13 W
Digi-box	1–13 W
Computer	8–20 W
CD player	0–18 W
Microwave oven	2–6 W
Induction hob	8–18 W
Cooker with clock	2–6 W
Clock radio	1–3 W



## ● AT YOUR SERVICE Service numbers and price info

### Helsingin Energia

Telephone 09 6171  
Sähkötalo, Kampinkuja 2,  
FI-00090 Helen  
www.helen.fi

### Customer service, 3rd floor

Mon–Fri 8.30–16  
Telephone service Mon–Fri 8–18  
Domestic customers 010 802 802  
Business customers 010 802 803  
Electricity meter readings 010 802 804

### Fault reports

Breakdowns in electricity supply  
08001 80808  
Breakdowns in district heating supply  
08001 60602  
Faults in outdoor lighting 08001 73173  
Telephone calls received by Helsingin Energia customer service are recorded.  
Call charges for numbers beginning with 010:  
• from landlines: 8.21 c/call + 5.9 c/min.  
• from mobile phones, all operators: 8.21 c/call + 16.9 c/min.  
The prices include VAT at 22%.  
Our free e-services are available on our website: www.helen.fi

### Advisory services

Energy Advisory Centre 09 617 2726  
Advice on how to choose and use domestic appliances. You can also borrow energy, moisture, structural, surface temperature and light meters from us:  
energiakeskus@helen.fi  
Advice on electricity use and energy saving  
09 617 4010

### District heating

New connections to district heat  
09 617 2961  
Advisory service on heat use  
09 617 2969  
Billing and consumption enquiries  
09 617 2856

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