

# THE EUROPEAN LAMP INDUSTRY'S STRATEGY FOR DOMESTIC LIGHTING

Frequently asked questions & answers  
on energy efficient lamps



## Background



On 1 March 2007, the European Lamp Companies Federation (ELC) announced the first-ever joint industry commitment to support a government shift to more efficient lighting products for the home.

Shortly after, under the German Presidency, on 9 March 2007, EU Heads of State called for the European Commission to “rapidly submit proposals to enable increased energy efficiency requirements for incandescent lamps and other forms of lighting in private households by 2009”. Proposals will take the form of Implementing Measures under the European Union’s EUP Directive.

On 5 June 2007, the GE, Havells Sylvania, OSRAM, Philips and other members of the ELC announced their detailed proposals to the European Commission for binding minimum energy efficiency requirements for domestic lighting. These proposals, if adopted by the European Union, would lead to the phase-out of the least efficient lamps in the home from the European market by 2015. For more information on the proposals see “The ELC’s proposal for domestic lighting”, available to download on: [www.elcfed.org](http://www.elcfed.org)



Following discussions with the media, end consumers and European and national policy makers, this paper attempts to answer a number of frequently asked questions on the issue of domestic lighting.

This list is of course not exhaustive, if you have any further questions or issues you would like to raise, please contact: [info@elcfed.org](mailto:info@elcfed.org)

**ELC Federation** - Created in 1985, the European Lamp Companies Federation (ELC) is both the forum and the voice of the lamp industry in Europe. It represents the leading European lamp manufacturers, which collectively directly employ 50,000 people, and account for 95 percent of total European production, with an annual turnover in Europe of €5 billion. From the outset, ELC objectives have been to promote efficient lighting practice for a sustainable environment and the advancement of human comfort, health and safety. To this end, ELC monitors, advises and co-operates with legislative bodies in developing European Directives and Regulations relevant to the European lamp industry.

## THE ELC'S APPROACH

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### 1 Why has industry not made this announcement before?

For the lamp industry, the switch to energy efficient lighting has always been seen as an evolution and not a revolution. The ELC and its member companies have promoted energy efficient CFLs (Compact Fluorescent Lamps with an Integrated ballast or commonly known as 'energy savers') for more than 25 years. In addition the ELC works closely with the Commission to help advance proposals for minimum energy efficiency requirements for lamps under the EU's Directive on the eco-design of energy using products (EuP).

In line with the Commission's first priorities for EuP Implementing Measures, the ELC has concentrated its efforts on street and office lamps first. These are the products with the biggest potential savings in the short term and it is easier to identify and influence the purchasers. The ELC fully supports the call from EU Heads of States to adopt minimum energy performance standards for street and office lighting under the EUP Directive by 2008.

Work on lighting in the home is much more complex for a number of reasons including the size of the market concerned; the availability of practical replacements for some specialist lamps; poor market surveillance; the difficulty of changing the habits of domestic purchasers; and also production capacities. Requirements for domestic lighting must therefore be realistic in terms of timings for industry, the supply chain and consumers.



### 2 What does industry mean by 'realistic timings?'

Equally, the ELC supports the Commission's timescale of 2009 for setting energy performance requirements for energy inefficient lamps in the home under the EUP Directive. We have committed to work with the European Commission, who commenced its own study for an Implementing Measure on domestic lighting in the home in June 2007, to develop ambitious minimum energy performance requirements for domestic lighting.

We have proposed a time-phased approach to the European Commission, starting with highest wattage lamps and gradually covering lower wattages. This ensures the availability of practical energy saving alternatives in all domestic applications and is realistic for the businesses that must adapt to significant changes in production and supply. It would therefore deliver huge environmental and energy saving benefits while safeguarding the interests of consumers, employees and Europe's lighting supply chain.

### 3 Why does the proposed phase out take so long?

The 8-year phase-out proposal is designed to ensure that supply of efficient cost-effective products can satisfy demand, development and innovation. We have a responsibility to ensure that consumers are not faced with empty shelves.

## 4 Does the ELC proposal affect all domestic lamps?

The ELC proposal does not affect all domestic lamps. The initiative calls on the EU to apply binding minimum energy efficiency requirements, supported by strict market surveillance, for Edison and Bayonet cap lamps<sup>1</sup> as early as 2009. These lamps are mostly incandescent.

## 5 What are you proposing?

The ELC's domestic lighting proposal has a number of phases, starting with highest wattage Edison and Bayonet cap lamps (>100W) and gradually covering lower wattages ( $\geq$ 25W).

For each phase, there would be minimum efficiency specifications based on an energy efficiency classification and on luminous efficacy or lumens per watt. For each wattage category, manufacturers are calling for requirements to become more stringent over time. All lamps that do not carry the EU Energy Label are not in the scope of this proposal. Proposals to tackle reflector lamps, which make up 15% of the incandescent lamp market, are being also prepared.

To ensure continued quality and cost effectiveness for Europe's consumers, all lamps placed on the EU market should also have to have a minimum lifetime of 1000 hrs and comply with relevant IEC and CEN standards.

## 6 Your proposal targets 25W lamps and above only. What about those lamps under this wattage?

The majority of the lamps under 25W are classed by our member companies as either specialty lamps or lamps that have a limited environmental impact. These lamps have a lower environmental impact due to their power (lower energy consumption), frequency of use (mainly colored lamps, lamps in fridges, ovens and decorative lighting) and their market size (currently they represent 3% of the market). Furthermore, cost-effective, energy efficient alternatives for many of these lamps are not yet available on the market. We are currently working on scenarios and proposals for this category.

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**1 What is a Bayonet cap?** With its familiar "push and twist" action, "bayonet cap" (also known as BC or B22d) is used on most regular light lamps, mainly in Great Britain and France. It is 22mm diameter and with two locating lugs. The "small bayonet cap" (SBC or B15d) is very similar but only 15mm across. Although generally used for mains voltage lamps, the SBC fitting can also be found in a very small number of specialist low voltage halogen lamps. There are also many other "BC" variants including the 3-pin BC, B22d-3 sometimes used on Fireglow lamps but perhaps more commonly on High pressure mercury lamps for industrial applications. The BY22d is used on some low-pressure sodium (SOX) lamps.

**What is an Edison cap?** Named after the pioneering inventor Thomas Edison, the Edison Screw or "ES" lamp fitting is used worldwide in a vast range of applications. The most popular ES or E27 fitting is 27mm diameter and is widely used in Europe. The US has a slightly smaller lamp cap type E26. The "Small Edison Screw" (SES or E14) is often used for smaller decorative fittings, chandeliers, and appliance lamps – predominantly in the UK and Europe. The "Candelabra Edison Screw" (CES or E12) is most frequently used in the US and Canada, especially for candle lamps. The Miniature Edison Screw (MES or E10) fitting is sometimes used in large chandeliers containing perhaps dozens of small lamps.

## THE CURRENT STATE OF PLAY

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### 7 What percentage of lamps on the European market is energy efficient and what percentage is inefficient?

- One third (33%) of all lamps currently installed in the European Union are energy efficient.
- Two thirds (66%) of all lamps currently installed in the European Union are energy inefficient.

### 8 What percentage of lamps in Europe's homes is energy inefficient?

Approximately 85% of lamps currently in EU homes are energy inefficient.

## INTERNATIONAL EFFORTS TO 'BAN' INEFFICIENT LAMPS

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### 9 Do your counterparts in other parts of the world support your position?

Yes, the setting of minimum energy performance standards is something that is generally considered important. Several governments worldwide have also recently announced plans to put legislation in place to eliminate the least efficient domestic lamps, including energy inefficient incandescent lamps, from the market over time. However, geographic and cultural differences have to be taken into account. Therefore the ELC is working closely with its international colleagues in America, China, Australia and Japan, to exchange best practice and learning, particularly on how to support and inform consumers.

### 10 Do you agree with recent calls from the governments of California and Australia to phase-out ALL incandescent lamps?

The governments of California and Australia have not called for the phase-out of all incandescent lamps. Like the EU, they will be working on developing energy efficiency standards for lamps. It is clear that the consequence of setting strict minimum energy efficient standards for lamps under legislation like the EU's Eco-Design of Energy Using Products Directive (EuP) will lead to the phase out of the least efficient lamps from the market place. The ELC supports the efforts by its global colleagues to develop energy efficiency standards for lighting but one should be realistic in terms of timings for industry, the supply chain and consumers.

## PRODUCTION & CAPACITY

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### 11 Will factories have to be closed in Europe?

The production process of the targeted lamps will eventually stop in line with this strategy. We are currently reviewing alternate operations of these factories, to support the production of other products.

## 12 What are the potential production capacity problems you envisage?

A switch to more efficient domestic lighting will require significant manufacturing changes within the ELC Member companies. Lamp manufacturers currently produce 8 times more “traditional” lamps than the more energy-efficient equivalents. This is why we have proposed a time-phased approach in order to manage this process in a suitable timescale, in order to safeguard the interests of employees, supply chain and consumers.

## 13 How many ELC Member Company factories in Europe currently produce incandescent lamps?

In total, 10 lamp factories and 6 pre-material (e.g. glass, filament etc) factories currently produce incandescent lamps in Europe.

## 14 Will this transition have a negative impact on the overall employment situation in Europe?

A switch to more efficient lighting in the home will require significant manufacturing changes within the ELC Member Companies. The lamp manufacturers are committed to manage this process carefully and aim to minimize the impact on the workforce by retraining among other things.

## COMPACT FLUORESCENT LAMPS (CFLis) OR ‘ENERGY SAVERS’

### 15 Why do CFLis cost so much? Will the price be coming down?

CFLis lamps have traditionally been more expensive than ‘traditional’ incandescent lamps because they are more expensive to make (these lamps have integrated ballasts). The price of a CFLi has decreased over the last several years. This is great value when you consider a consumer can save around €80 over the life just by replacing a 100-watt incandescent with a 20-watt CFLi.



### 16 What are the cost savings, in energy terms, for a CFLi compared to an energy inefficient incandescent GLS lamp available today over its lifetime?

**A typical CFLi can offer a saving of up to €13 per year on average when compared to an energy inefficient incandescent lamp.**

Although initially higher in price, a typical CFLi can offer a saving of up to €13 per year on average when compared to an energy inefficient incandescent lamp. A six-year-life rated energy-saving lamp would therefore save about €80 during its lifetime (100W incandescent versus 20W CFLi). This is based on an assumption of 3 continuous burning hours per day, for an energy cost of 0,15 €/kWh.

## 17 Which CFLi lamp should I buy to replace a 60-, 75-, 100- or 150-watt regular lamp?

The ranges below provide wattage equivalents (that produce the same amount of light) for regular incandescent and CFLi lamps.

- **25 watt** incandescent lamp = **5-7W** CFLi
- **40 watt** incandescent lamp = **7-9W** CFLi
- **60 watt** incandescent lamp = **11-15W** CFLi
- **75 watt** incandescent lamp = **15-18W** CFLi
- **100 watt** incandescent lamp = **20-23W** CFLi
- **> 100 watt** incandescent lamp = **23W** CFLi and above

Along side this range of CFLi lamps there is also a range of energy saving Halogen lamps available. These lamps provide high quality, brilliant light. Additional ranges are currently in development.



## 18 How much energy does it take to produce a CFLi lamp compared to an energy inefficient incandescent GLS lamp available today?

It takes approximately five times more energy to produce one CFL compared to one energy inefficient incandescent GLS lamp. However, as CFLi lamps last on average between 6 to 15 times longer than energy inefficient incandescent GLS lamps, the amount of energy needed for the production of one CFLi is comparable to the production of between 6 to 15 GLS lamps – hence the saving over the lifecycle of the product is much higher.

Therefore, an energy saving CFL has a much lower overall environmental impact than an energy inefficient incandescent lamp throughout its lifecycle. More than 97% of energy consumed during the lifecycle of a lamp is in the use phase and as CFLis are up to 80% more efficient than an average inefficient incandescent lamp, the savings are evident.

## 19 Many consumers complain that CFLi energy saving lamps are of an inferior quality. Are there quality standards in place for lamps in the EU?

The Member companies of the ELC manufacture lamps that meet the relevant CEN/CENELEC Standards. The ELC urges the market surveillance authorities in the EU Member States to protect the consumer from lamps that are inferior and do not meet these standards.

## 20 Some people don't like the light quality of CFLis. Is that being improved? Will it ever be more like incandescent lamps?

CFLi lamps have evolved to the point where good quality lamps now are usually very similar in functionality to incandescent lamps. They last longer and they will continue to get smaller, better, more efficient, safer and less expensive.

Energy saving lamps from reputable manufacturers render a light quality which approaches very closely that of incandescent lamps. The Colour Rendering Index (CRI) expresses the level to which colours are represented

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in its natural form i.e. as if lit by sunlight, where an incandescent lamp has a CRI of 100, good quality energy savers typically have a CRI value between 80-85. The CRI of 80-85 is appropriate for most domestic applications and is similar to the quality of light used in shop display lighting.

## **21 Frequent switching reduces the life of CFLs**

A CFL's life is no longer affected by switching. The current standards for 'Energy Recommended' accreditation requires over 3,000 switching cycles per 8,000 hours of tested life which is many more than would be necessary for normal domestic use. For special applications such as hallways in flats and lights in corridors activated by motion sensors, some manufacturers produce 'heavy duty' CFLs with up to 500,000 switching cycles capability and 15,000 hours life!

## **22 CFLs are too big**

The latest generations of CFLs offered by the major manufacturers are no longer very large. In some cases they are slightly smaller than their GLS equivalent and with the new classic shapes, also look almost the same as GLS lamps.

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## **23 CFLs need to be left switched on for more than 45 minutes as they consume so much energy when first switched on**

There is no reason to keep a CFL switched on for longer than a normal GLS lamp as they do not consume any greater energy during start up and run very efficiently immediately after the first 2 or 3 seconds.

## **24 You can't dim CFLs**

There are new lamps available today which can dim on ordinary domestic dimmer switches or alternately by staged dimming using a standard light switch. These products are a relatively new innovation and therefore in limited supply, that said the number of these types of products is expected to increase over time.

## **CFLs AND YOUR HEALTH**

### **25 CFLs flicker with a stroboscopic effect. I've heard they switch on and off 50 times per second. Do they cause medical problems such as epileptic-type fits, mental disturbances?**

CFLs give a constant, flicker free, non-stroboscopic light. They operate at high frequency through their electronic controller at between 30,000-50,000 hertz (normal mains voltage cycles at just 50 hertz or cycles per second).

A small number of cases have been reported by people who suffer from reactions to certain types of linear fluorescent lamps. In the majority of these cases, the lamps in question were used in offices, restaurants (in certain European countries) and in limited places in domestic households (such as kitchens and garages) and were almost certainly triggered by OLD technology which operated on a conventional (Copper-Iron) ballasts with a low frequency (<50Hz mains frequency); this is not the case with new energy efficient

linear fluorescent lamp technology which unlike earlier energy efficiency technologies, operates on high frequency drivers (for example, certain fluorescent lamps operate on 50kHz or 50,000Hz).

The above health related problems can be therefore avoided if consumers opt for new technologies such as integrated energy savers (CFLi) in households and other sources using high frequency drivers (e.g. linear fluorescents and HID) in other applications (such as offices, restaurants etc).

European scientific experts have identified no health impact from energy saving lamps flickering<sup>2</sup>.

## **26 Is there any danger that the light intensity of energy saving lamps would damage my retina?**

Energy saving lamps do not present any risk to the retina. Studies have examined the effect of lights on the retina and concluded that looking at energy saving lamps does not damage the eye. The eye naturally protects itself from excessive light and a natural aversion mechanism prevents it from being exposed to light that is too intense. Sometimes, eyes can be particularly sensitive to blue light, which is present in many energy saving lamps. It is then recommended that people with this sensitivity use yellow filters to soften the light colour. Today, many energy saving lamps are available in soft colours, which are more comfortable for the eye.

The light exposure resulting from a fluorescent light source for general lighting is less than the typical exposure experienced outdoors.

## **27 What about those who suffer from light sensitivity or Lupus sufferers, for whom a ban on normal incandescent lighting would result in a total disruption of normal everyday life?**

People affected from light sensitivity or lupus sufferers (a chronic autoimmune disease – of which sensitivity to ultraviolet light is a key symptom) could be affected by either the intensity of the light (i.e. the lumens of the lamp), the spectral property of the light (particularly when the light contains more blue) or when a lamp radiates a small amount of ultra-violet (UV) light. There is a small amount of UV generated by fluorescent lights (such as CFLis). But this is fractional if you compare this to natural daylight. For the many energy savings lamps (such as CFLis) that do generate higher quantities of UV and blue light, filters are now used to reduce radiation.

### **General tips for people who are sensitive to light**

- If you suffer from a special light sensitivity do not expose yourself directly to the light source. Use indirect light via a white surface, as, in many cases, during reflection UV-radiation will be absorbed (depending of course of the type of surface and material/paint used).
- Use double-envelope energy saving lamps (i.e. lamps with double outer bulb) which mitigate UV-radiation.
- Special covers can be used to fully filter the last bits of harmful radiation from the lamps. For example, Plexiglas or special glass UV filters will filter most of the UV light.
- Use yellow filters to filter the blue light.
- When filters are no option, mains voltage halogen lamps are an acceptable alternative. Due to the UV-filtering quartz of the burner, these lamps have UV output levels that are similar to incandescent lamps.
- Reduce the dose (time of exposure, quantity) of light by dimming the lights when possible.
- Use light sources with a warm color tone (low correlated color temperature); they contain the lowest quantity of blue light.

2 Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR), Opinion 23 September 2008, [http://ec.europa.eu/health/ph\\_risk/committees/04\\_scenihr/docs/scenihr\\_o\\_019.pdf](http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_019.pdf)

LED lamps can emit a range of colors (green, red and blue) and can emit white light by combining red, blue and green LEDs or a LED with a phosphor similar to the ones used in fluorescent lamps. The whiter the lamp is, the more blue (and possible UV) is radiated. Negative reactions to LEDs therefore are probably due to the use of LED lamps with a very white color tone, thus containing a lot of blue. It is important to note that LED technology is still in the very early stages of development, and as such there is a strong possibility that lamps will be made with a certain spectral composition in the future, hence alleviating some of these initial problems.

## 28 Do energy saving fluorescent lamps emit UVA/UVB? Does this have an effect on eyes and skin?

Like all fluorescent lamps, energy saving fluorescent lamps do emit a small amount of UVA and UVB. There is no risk from ultraviolet light exposure emitted by energy saving fluorescent lamps as their UVA and UVB rays are well within the limits that guarantee consumer protection. The US National Institute for Occupational Safety and Health (NIOSH) norm indicates that maximum time allowed under fluorescent lighting is 24h a day. In addition, European scientific experts did not find any health impact from UV rays emitted by energy saving lamps in normal conditions. For workers exposed to high levels of light and for persons affected by extreme light sensitivity, experts recommended using double-envelope lamps<sup>3</sup>.

There are small amounts of UV rays generated by fluorescent lights (such as energy saving fluorescent lamps). However, these are a tiny fraction of the emissions generated by natural daylight (see table comparing UV exposure to daylight).

**UV exposure compared to daylight**

One day spent...	UVA Exposure	UVB Exposure
in summer daylight	8 W/m <sup>2</sup>	1.2 W/m <sup>2</sup>
at home (typical fluorescent 4000k lamp)	0.0001 W/m <sup>2</sup>	0.00002 W/m <sup>2</sup>
in the office	0.05 W/m <sup>2</sup>	0.01 W/m <sup>2</sup>

## 29 Do energy saving fluorescent lamps have an influence on melatonin, the “sleep hormone”?

Energy saving fluorescent lamps are completely safe to use for consumers and comply with all relevant legislation relating to product safety and consumer protection. ELC understands that studies have shown that, light in the late evening or at night can suppress the production of the sleep-promoting hormone melatonin. It is recommended that people who suspect that lamps are affecting their ability to sleep either dim the lights, or use warm colour tone lamps. Today, many energy saving fluorescent lamps are available in soft colours, which are more comfortable for eyes. Lamp manufacturers closely follow all the scientific developments related to the effects of lamps on health and use these to advise consumers of the safest way to use their products.

## 30 Do energy saving fluorescent lamps trigger migraines?

Energy saving fluorescent lamps comply with all relevant consumer protection legislation. All lamps are thoroughly tested in order to ensure safe applications for all consumers.

<sup>3</sup> Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR), Opinion 23 September 2008, [http://ec.europa.eu/health/ph\\_risk/committees/04\\_scenihr/docs/scenihr\\_o\\_019.pdf](http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_019.pdf)

ELC understands that headaches are sometimes linked to light, and especially to the red and blue parts of the light spectrum. Some people are therefore particularly sensitive to blue light, which is present in many energy saving lamps. It is then recommended that people with this sensitivity use yellow filters to soften the light colour. Today, many energy saving lamps are available in soft colours, which are more comfortable for people who suffer from migraines.

## CFLis AND MERCURY

### 31 A big issue in the uptake of CFLis is their mercury content.

Energy saving fluorescent lamps contain very small amounts of mercury in order to obtain optimum energy conversion in the light generation process. No mercury is emitted from lamps when in use which is why they are safe, both in regard to human health and the environment.

Over the past 25 years, lamp manufacturers have developed innovative ways to increase lamp performance while minimising the use of mercury. The mercury content of lamps has therefore been reduced by more than 90%. Its presence is regulated by the European RoHS Directive<sup>4</sup>, which permits small amounts of mercury (5 mg) to be used in energy saving fluorescent lamps. No other material has been found to replace mercury and reach comparable energy efficiency.

Energy saving lamp technologies do not all need mercury. For instance, energy saving halogen lamps as well as most LED based lamps do not contain mercury.

## DISPOSING OF CFLis

### 32 Should I be concerned about using CFLis in my home or should I take any special precautions?

CFLis are safe to use in your home. No mercury is released when the lamps are in use and they pose no danger to you or your family when used properly. However, CFLis are made of glass tubing and can break if dropped or roughly handled. Care should be taken when removing the lamp from its packaging, installing it, or replacing it. Always screw and unscrew the lamp by its base, and never forcefully twist the CFLi into a light socket by its tubes. Used CFLis should be disposed of properly (see question 33).

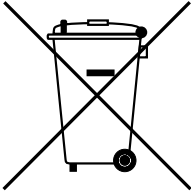
**CFLis are safe to use in your home. No mercury is released when the lamps are in use and they pose no danger to you or your family when used properly.**

### 33 What do I do with a CFLi when it burns out? What is the proper disposal procedure?

In Europe, all CFLi lamps have to be disposed as special waste under EWC Code 20 01 21-Fluorescent tubes and other mercury-containing waste. Furthermore, as part of its obligations under the EU's WEEE Directive<sup>5</sup>,

<sup>4</sup> RoHS is the acronym used to refer to the European Union (EU) Directive 2002/95/EC on the Restriction of the use of certain hazardous substances in electrical and electronic equipment.

<sup>5</sup> Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC



the European lighting industry has set up a European-wide recycling infrastructure for all gas discharge lamps (including CFLs), capable of recycling mercury, as well as other metals, glass, etc. All CFL lamps are provided with the crossed-out wheeled dustbin logo, indicating that consumers should deposit the product separately, making use of the existing, local waste depots.

For more information about the WEEE directive and to contact your national ELC member partner see [http://www.elcled.org/2\\_health\\_environment.html#weee](http://www.elcled.org/2_health_environment.html#weee)

### 34 What should I do if I break a CFLi lamp?

If you break a CFLi, do not panic and take the following steps:

- Ventilate the room for 20-30 minutes.
- Do not use a vacuum cleaner.
- Use gloves to remove all the bits.
- All the items used in cleaning up the spill should be treated as “universal waste” or disposed at your local lamp recycling point.
- Remove all broken lamp components from the luminaire before reusing the luminaire.
- ALWAYS switch off the mains before removing the remaining lamp components!

#### Disposing of CFLis

Follow these guidelines to dispose your CFLi properly:

- Like paint, batteries, thermostats, and other hazardous household items, CFLis should be disposed of properly.
- Do not throw CFLis away in your household garbage if better disposal options exist.
- If your local waste management agency offers no other disposal options except your household garbage, place the CFLi in a plastic bag and seal it before putting it in the trash.
- If your waste agency incinerates its garbage, you should search a wider geographic area for proper disposal options such as your local tip. Never send a CFLi or other mercury containing product to an incinerator.

## LAMPS COMPLIANCE WITH HEALTH-RELATED LEGISLATION

### 35 How do lamps comply with health-related legislation?



Energy saving lamps are safe to use for consumers and workers alike. A range of stringent measures have been put in place to manage the health risks from products such as lamps. The ELC member companies comply with all relevant legislation to ensure their products don't affect the health of consumers. This legislation includes the CE conformity marking, the General Product Safety Directive and the Directive on the protection of workers from the risks associated with physical agents.

Lamps that bear the **CE mark**<sup>6</sup> meet all the criteria of EU legislation, which relate to protecting consumer safety, including the Low Voltage Directive (LVD)<sup>7</sup> and Electromagnetic Compatibility equipment directive (EMC)<sup>8</sup>. This legislation covers design, manufacture, and how the lamps are marketed. Energy saving fluorescent lamps or their lamp packaging have carried a CE-Mark since January 1998.



The **General Product Safety Directive** (GPSD) 2001/95/EC guarantees that lamps available in the EU are safe for consumers to use. The onus is on manufacturers to ensure that their products meet the general safety requirement. In addition, they must provide consumers with all necessary information about their products. They must also take any necessary measures to avoid threats (e.g. withdrawal of their products from the market).

The Lamp Industry also supported the creation of ICSMS ([www.icsms.org](http://www.icsms.org)), the internet-based Information and Communication System for cross-border Market Surveillance. This database ensures that information is exchanged and relevant authorities carry out joint operations in market surveillance.

The **EU Directive on the protection of workers from risks associated with physical agents**<sup>9</sup> – artificial optical radiation – focuses on exposure to artificial light. The Directive sets limits for the exposure of workers to UV. The limits are based on the recommendations of independent experts at the International Commission on Non-Ionizing Radiation Protection (ICNIRP). Based on these limits, a standard for lamps and lamp systems has been formalized, IEC 62471(2006). Lamps from ELC Member Companies comply with this standard.

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6 Council Decision 93/465/EEC of 22 July 1993 concerning the modules for the various phases of the conformity assessment procedures and the rules for the affixing and use of the CE conformity marking, which are intended to be used in the technical harmonisation Directives. Directives providing for CE marking for lamps can be found under the following link: [http://ec.europa.eu/enterprise/newapproach/standardization/harmstds/reflist.html#na\\_directives](http://ec.europa.eu/enterprise/newapproach/standardization/harmstds/reflist.html#na_directives)

7 Commission communication in the framework of the implementation of the Council Directive 73/23/EEC of 19 February 1973 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (2006/C 208/01)

[http://eurlex.europa.eu/LexUriServ/site/en/oj/2006/c\\_208/c\\_20820060830en00010089.pdf](http://eurlex.europa.eu/LexUriServ/site/en/oj/2006/c_208/c_20820060830en00010089.pdf)

8 Generic standards demonstrate the compliance of low power electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (10 MHz-300 GHz) for the General public

9 Directive 2004/40/EC of the European Parliament and of the Council on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields)

## ADDITIONAL QUESTIONS

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### **36 What about electromagnetic fields and energy-saving lamps?**

Today, our society uses a huge variety of electrical equipment to make life more comfortable. However, every piece of electrical or electronic equipment creates an electromagnetic field (EMF) in the close surrounding area of the equipment within which it operates. This also applies to electric lamps.

EMF emitted by energy saving lamps are well within safety limits. European scientific experts identified no health impact from EMF emitted by energy saving lamps<sup>10</sup>. The member companies of the ELC are committed to, and responsible for, ensuring that high quality and safety standards of their products are met. Energy saving lamps are safe.

### **37 Can LEDs be used as an energy saving alternative to inefficient domestic lamps?**

LED technology is currently being used in some specific applications (such as traffic signals, mobile phones etc.) and offers great potential for the future of lighting. However, this technology still requires further development before it can be used as a cost effective replacement for lamps in the home.

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<sup>10</sup> Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR), Opinion 23 September 2008, [http://ec.europa.eu/health/ph\\_risk/committees/04\\_scenihr/docs/scenihr\\_o\\_019.pdf](http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_019.pdf)





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