

**Let There be Light  
Fiat Lux**

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**A blueprint for the sustainable waste management  
of Lamps in the EU in view of the expected  
implementation of the Waste Electrical and  
Electronic Equipment Directive.**

## ***Executive Summary***

Over the last decades the European Lighting Companies' Federation<sup>1</sup>, ELC, has always taken a great interest in pioneering and supporting long term environmental initiatives. European legislation on Waste Electrical and Electronic Equipment (WEEE) represents another milestone in sustainable development and increased awareness of environmental priorities in making business decisions.

In the following brochure ELC sets out the blueprint for the sustainable management of waste Lamps in the EU.

The Lamp sector has been known for being amongst the pioneers for investment in environmentally friendly and energy efficient production, thereby supporting efforts leading towards the reduction of energy consumption and CO<sub>2</sub> emissions and also of mercury emissions.

Due to the complex business model of the Lamp sector, in particular the amount rather than weight of Lamps, their long lifetime, their interchangeable use, and their very specific supply chain, any comparison with other relevant actors targeted under the WEEE Directive is futile.

The proposed legal distinction between Lamp types used in private and non-private households and the categorisation of products placed on the market as of 13 August 2005 as "new" waste products is in practice impossible to apply to WEEE Lamps.

This is due to the adaptability of this product to both private and non-private households, the lack of origin or age determination and the disproportionate costs for executing any kind of sorting when compared with the envisaged benefits.

In light of the above technical limitations, the ELC, committed to reaching the environmental goals of the WEEE Directive has developed a blueprint for the sustainable waste management of Lamps in the EU. The blueprint ensures the most efficient solution for users and the EU environment alike by:

- Ensuring that all WEEE Lamp manufacturers and importers participate in this sector specific Collection and Recycling scheme;
- Supporting the use of a single visible fee for financing the scheme;
- Setting aside a costly and redundant sorting system since one cannot distinguish between waste from private or non private households.

On this basis, ELC members urge policy makers to consider and implement this blueprint and recognise the specific needs of the Lamp sector to participate in a collective recycling and collection system for all WEEE Lamp types, which are all energy efficient Lamps.

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<sup>1</sup> There are eight member companies, namely **AURA** Light International AB, **BLV** Licht – und Vakuumtechnik, **GE** Lighting Limited, **LEUCI** S.p.A, **NARVA** Lichtquellen GmbH, **OSRAM** GmbH, **Philips** Lighting BV and **Sylvania** Lighting International

Not only would this system allow for a reduced impact on sales of energy saving Lamp types, it would also make for a sustainable efficient Lamp waste management scheme in the EU thereby meeting the requirements of the three pillars of sustainability: environmental, social and economic.

## ***Introduction***

Light sources play an indispensable role in our every day life. There are different types of Lamp for different purposes; Lamps used for home and office lighting, for street lighting, in subways, for hospitals, for cars, for security purposes, for photographic equipment and visual displays are but a few examples.

Recently adopted European Union legislation on Waste Electrical and Electronic Equipment<sup>2</sup> (henceforth WEEE) requires that, once used, Lamps be collected and recycled and soundly disposed of.

Lamp manufacturers marketing in the European Union are members of the European Lighting Companies' Federation, or ELC. This industry sector is proud of its environmental record and has pledged to support the environmental aims of the new Directive by minimising the environmental impact of waste electrical and electronic equipment and by responsibly promoting recycling so as to reduce the disposal of waste.

The project set out below describes how these environmental goals can be reached in a sustainable manner from an environmental, economic and social perspective.

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<sup>2</sup> Directive 2002/96/EC of the European Parliament and of the Council of 27<sup>th</sup> January 2003 on waste electrical and electronic equipment; OJ L 37 of 13.2.2003.

## ***The European Lighting Companies' Federation and its environmental record***

Over the last eighteen years the ELC has contributed greatly to the development of Lamps with a minimal impact on the environment. This is a mark of the industry's long-term pledge to sustainable development.

These efforts were concretely translated into the market introduction of Compact Fluorescent Lamps or CFL and Straight Fluorescent Lamps or FL. The Compact Fluorescent Lamp type (commonly referred to as "energy saving" Lamps) is energy efficient, consuming up to five times less energy than the conventional incandescent Lamp<sup>3</sup>, thus contributing to the overall goal of reducing energy consumption and the subsequent generation of CO<sub>2</sub> emissions as set out in the Kyoto Protocol to the United Nations Framework Convention on Climate Change. This unprecedented initiative arose from industry impetus.

Energy saving Lamps have enjoyed significant market success for both private and non-private households thereby greatly contributing to energy savings in both residential and industrial geographic areas. Fluorescent Lamps run by electronic ballast have also had the same effect.

Since 1985, ELC members have also developed manufacturing techniques to drastically reduce the amount of mercury used in Lamps hence allowing for more efficient recycling and a better use of resources.

Technical innovation, which led to the market introduction of the energy saving Lamps, brought about not only a reduction in energy consumption, but also a reduction in mercury emissions from power generation.

Yet, WEEE legislation targets these energy saving Lamps directly. It is feared that the ensuing waste management costs related to these Lamps will eventually lead consumer choice away from these environmentally friendly Lamp types.

Therefore in order to maintain the environmental achievements of the Lamp industry whilst meeting the requirements of the WEEE Directive, the ELC seeks approval of specific provisions for this industry sector.

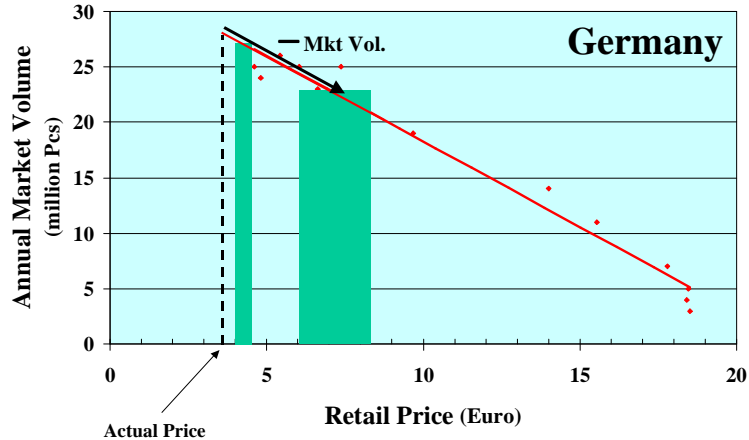
***Since the mid eighties, the sector has switched gradually towards the market of yet more Lamps that are energy efficient and with a minimal environmental impact, thus investing strongly and taking a leading and pioneering role among other industry sectors in focussing upon the reduction of energy consumption and mercury content. WEEE legislation will impact energy saving Lamps and lead to a potentially negative environmental result if this responsible industry's blueprint is not covered by specific provisions at implementation stage.***

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<sup>3</sup> Light output is measured per unit of electrical power or lumens per watt.

Figure 1 illustrates the expected drop in sales of energy savings Lamps.

FIGURE 1



The potential negative environmental impact of WEEE legislation caused by increased use of incandescent Lamps, unless the Lamp industry is subject to specific provisions, has been estimated.

Expected annual decrease in sales volume Energy Savers in German market is about 5,000,000 million units.

Substitution by incandescent Lamps will result in an annual increase of energy consumption, mercury emission and Lamp waste, implying a loss for the environment.

Extra Energy consumption: 225,000 MWh

Extra Mercury emission: 6 kg

Extra Lamp waste: 65,000 kg

On a Europe wide level, we anticipate an annual decrease in the volume of sales of energy savers to 18,000,000 units. This increase will bring about an increase of Energy Consumption of 810,000 MWh, Mercury emissions to 23 kg and Lamp waste to 234,000 kg.

## *Lamps covered by the scope of WEEE legislation and their specificity*

### **WEEE Lamp market and the pertinent legal requirements of WEEE**

The market for WEEE Lamps in Western Europe (including Switzerland and Norway) can be estimated at approximately 600 million pieces, over 90% of these Lamps being manufactured by ELC members. The impact on the efficiency of the waste management scheme for Lamps in the EU will, to a certain extent, depend on the protection of the responsible producers and financial contributors from free riders who do not contribute to the scheme.

The definition of the scope of WEEE legislation covers all high efficiency Lamps. These “WEEE Lamps” are set out in illustrative format at **Annex 1**.

The WEEE Directive requires therefore that WEEE Lamps be collected and recycled as of 13 August 2005 and that, by 31 December 2006, a recovery rate of 80% be achieved (article 7.2.d).

Furthermore, in line with the principle of producer responsibility, the Directive requires that, by rule with some exceptions, each manufacturer finances the cost of collection and recycling for the products he has placed on the market.

The Directive draws a distinction between “private” and “non-private households”. It is important to note at this stage that WEEE from a “private household” covers waste products not only from homes but also from “commercial, industrial, institutional and other sources, which, because of its nature and quality, is similar to that from private households” (article 3(k)). This particular definition therefore extends the parameters to cover also such Lamps as for schools and universities, all small businesses, manufacturing plants and offices.

For WEEE from private households, of products placed on the market prior to 13 August 2005, i.e. historical waste, EU legislation requires that producers collectively finance their collection, treatment, recovery and disposal. The producers may display a visible fee for a transitional period of eight years (until 13 February 2011) to show the consumers the cost of collection and recycling at the time of sale (article 8.3.). EU legislators expect the costs to be internalised into the product price thereafter, and that all historical products will have been collected by then.

For products placed on the market after 13 August 2005, the manufacturers must be individually responsible for financing the waste generated by their appliances and may manage their obligations for collection and treatment of WEEE either individually or through collective schemes.

In order to prove that they can cover the waste management costs of future waste, producers must either participate in the appropriate schemes or provide recycling insurance or a blocked bank account guarantee when putting products on to the market (article 8.2.).

For WEEE from non-private households, from products falling under the definition of historical waste, the Directive requires that the financing of the costs of their waste management be provided for by producers, and “Member States may as an alternative, provide that users other than private households be made partly or totally responsible for this financing”. A recently proposed amendment to article 9<sup>4</sup>, was tabled to limit the financial implications for producers to the costs for waste equipment taken back when a new product is sold. It is also aimed at eliminating the problem of waste from companies which sold products in the past, without their being a similar product placed on the market thereafter, and that no longer exist.

For the same products placed on the market after August 2005, the Directive simply states that producers will be responsible for financing their collection, treatment recovery and environmentally sound disposal. Importantly again, the Directive (article 9) introduces a possible exception by stating that, “producers and users other than private households may ... conclude agreements stipulating other financing methods.”

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<sup>4</sup> COM (Doc) 2003 219 final, of 29.04.2003

## **WEEE Lamp particularities - a *unique product***

The above requirements are key provisions to a Directive, which seeks to establish a common regulatory framework for the waste management of a vast range of products regrouped under the title of electrical and electronic products. The diversity of this range of products can be verified by widely accepted parameters such as weight, volume, pricing, use as well as recycling costs and recovery value.

Most importantly the provisions assume that a distinction can be drawn at their end of life between products placed on the market prior to 13 August 2005 and those after, and the origin of their use whether in private households or not.

Yet, the particular nature and use of WEEE Lamps does not allow for these distinctions. Moreover, it is suggested that not only would the environmental goals of the waste management of these Lamps not be reached, there is a risk that the benefits reaped from these environmental commitments of the ELC be seriously jeopardized.

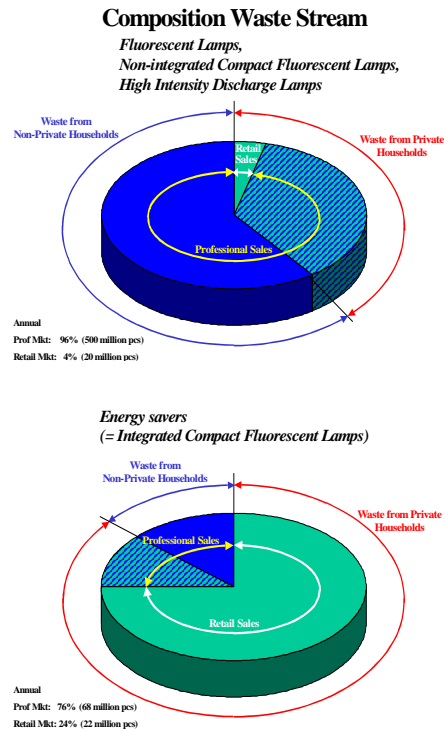
### ***Private household v. non-private household***

This first distinction set out in the Directive as a criteria for defining the applicable financing mechanism cannot be aligned to the present Lamp industry sales channel which is based on sales to “consumers” or “professionals”. Indeed, sales to luminaire manufacturers and to installers are defined as to “professionals”.

However, an unknown amount, but estimated high amount of these is then sold on as domestic luminaires used in private households or is sold to installers who then install these also in households as defined at article 3(k).

The ELC has estimated that by 13 August 2005, an approximate total of 3 400 million units of WEEE Lamps will be categorised as historical waste. It is important to note that most WEEE Lamp types are used to varying degree in an interchangeable way in both private households and non-private households. **Figure 2** provides an estimated market break down of current annual volumes sold on the consumer and professional markets respectively.

**FIGURE 2**



Industry estimates that approximately 40% of sales of WEEE Lamps are used in private households or small businesses<sup>5</sup>. A split of sales of WEEE Lamps by outlet estimated that 70% were sold to wholesalers, 10% to retail outlets and 20% to original equipment manufacturers. These statistics clearly demonstrate the significant risk of cross sector dumping if the WEEE criteria were applied in that there would be a risk of uncontrolled dumping of non private user waste in the stream for private users. Non private household users would thereby avoid any financial commitment related to the waste management of a product they used and on which an agreement might have been concluded with the producer, as allowed for at article 9.

In brief, a degree of sorting of waste according to its origin of use might be achieved by establishing distinct waste streams but experience has demonstrated that sizeable amounts of non-private household waste ends up in the stream designed for private households – a case study carried out in Norway draws these conclusions – see **Annex 2**. It is suggested therefore that sorting would be counter productive due to the inherent difficulties encountered in sorting hundreds of million of units but also because the cost of this exercise would be both prohibitive and disproportionate, in view of the fact that no environmental gain is derived.

<sup>5</sup> UK Lighting Industry Federation (LIF statistics 2002).

Indeed, no environmental benefit is obtained by requiring such meaningless sorting as between private and non-private household Lamps.

***The Lamp sector cannot be compared with other sectors in the sense that no distinction can be made at moment of sale between products to be used in a private or a non-private household. Most WEEE Lamp types are used in an interchangeable way in both categories.***

***“Historical” v.” new”***

As mentioned above, the Directive provides for a break down of products sold before 13 August 2005, categorised as “historical” and those sold after that date, to be categorised as “new” waste.

The average lifetime of a WEEE Lamp being 6 years, signifies that virtually all Lamps placed on the market after 13 August 2005 will only be coming back as waste products from 2011 onwards. Therefore, WEEE Lamps being placed for disposal until 2011 should be characterised as “historical” waste. This fact further renders irrelevant any sorting exercise to be carried out just to gauge the age in relation to the financing requirements of the Directive.

For these Lamps to be categorised as “historical” or not, a fail safe sorting system would need to be devised. The sorting of 3 400 million units of waste Lamps is a titanic task and as likely doomed to failure. No other product falling under the scope of WEEE is sold in such quantities across the EU. Such a sorting system is also not necessary in order to achieve the environmental goals of the WEEE Directive.

Indeed, the costs associated with sorting alone could equal the cost allocated to the subsequent collection and recycling<sup>6</sup>.

Therefore, a possible sorting of these Lamps based on the criteria of producer origin and date of placing on the market is a redundant exercise as long as all Lamps falling under the scope of WEEE, as of the implementation of the Directive into national law, are collected and recycled.

At this stage, the ELC members wish to underline their commitment to compliance with the marking requirements for WEEE Lamps placed on the market after 13 August 2005.

***The date of 13 August 2005 used for the distinction between “historical” and “new” waste bears no practical relevance to WEEE Lamp types.***

***The WEEE Lamp’s***

- ***long lifetime, and***
- ***the difficulties associated with determining, at the time of placing on the market, if they were used in a private or non private household; excludes the occurrence of a mixed waste stream which would require sorting between old and new waste until January 2011. Thereafter, all waste would be categorised as “new”.***

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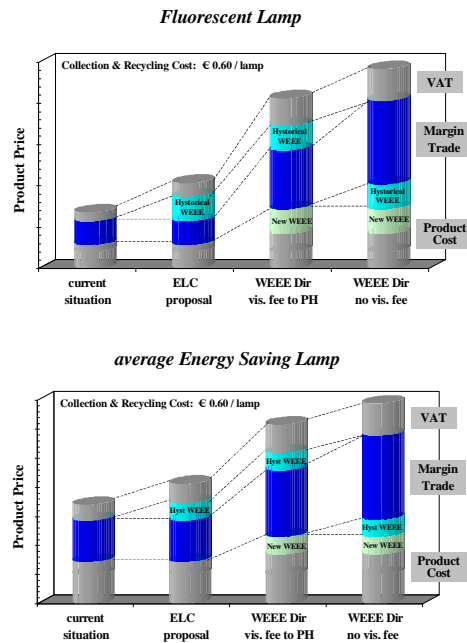
<sup>6</sup> It is roughly estimated that the cost of sorting of white goods totals about 30% of the handling costs of that product. This amount escalates to over 100% for WEEE Lamp sorting.

### Collection and Recycling costs v. energy saving efficiency

Maybe the most salient argument for questioning the criteria drawn for financing the waste management of WEEE products as applied to Lamps is related to the cost structure for recycling of materials. Again, in this context, the ELC underlines its support for reasonable reductions in mercury content and for improved material recycling of Lamps.

However, according to current available information set out in **Figure 3**, the cost of recycling of a WEEE Lamp is approximately estimated at 60% of the current retail price. This amount rises to 80% for certain WEEE Lamp types. Under the waste management system as set out in WEEE, the worst case scenario would lead to a possible cost equalling 4 times that of the Lamps (cost) price depending on the extent to which actors in the selling chain add on their own “mark up”. The best case scenario, as practised in Sweden, could lead to up to just 50% added on to the retail price.

#### Influence EoL Costs WEEE



**FIGURE 3**

Added to this fact is the consideration that most WEEE Lamps are commodity products with resale prices of between 1 and 5 Euro.

***Therefore, one can conclude that were the current collection (from the collection points) and recycling costs added to the price of Lamps, consumer choice and user preference – a factor closely linked to price considerations - is likely to shift to the less costly non energy saving Lamps. This effect would significantly undermine the energy efficiency of both private and non- private household lighting installations in the EU thereby jeopardising the reaching of environmental goals as set out in the Kyoto Protocol, endorsed in EU legislation and fully supported by the ELC members.***

#### ***Volume of collected WEEE Lamps v. tonnage***

A final consideration needs to be examined. The WEEE directive requires that by 31 December 2006, a rate of separate collection of at least 4 kilograms on average per inhabitant per year of WEEE from private households be collected. Yet, a comparison of waste stream composition by weight in Germany found that Lamps account for less than 1% by weight of the stream versus more than 80% of the unit quantities were counted<sup>7</sup>.

***It is the inherent nature of WEEE Lamps, due to their sheer volume in units, their fragility and mercury content, that their collection and transport will need to be carried out under differing conditions than for any other electrical and electronic waste.***

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<sup>7</sup> In other terms, the WEEE Lamps sold in Germany in a given year amount to 122 million pieces and came to a combined weight of 24,4 tonnes – 1 tonne therefore corresponds to 5000 WEEE Lamps. By contrast, one can observe that 15,5 million units of white goods are sold in Germany in the same year amounting to 760 000 tonnes – 1 tonne corresponding to approximately 21 units. Hence, for the same weight, 250 times more Lamps have to be collected than for white goods.

***It is for the above reasons - which are specific to Lamps - ;***

- private v. non private households,***
- historical v. new waste,***
- recycling cost v. energy efficiency and***
- volume v. tonnage,***

***that the ELC urges consideration of this Blueprint so that the environmental goals as set out in the WEEE Directive can be reached and even surpassed. Due to the specificity of Lamps, the common regulatory framework as set out in the WEEE directive would not allow for reaching optimal environmental goals - the fundament of the Directive. Indeed, a too literal application to this specific sector of the WEEE measures discussed could seriously undermine the overall aim of this piece of waste management legislation***

WEEE Lamp collection and environmentally sound disposal requires a different set of solutions, which will increase the likelihood of success in achieving the environmental aims of the legislation in the most feasible and sustainable way.

## ***The Collection and Recycling of Lamps in the EU***

As already stated, the ELC is proud of its environmental record. With the above characteristics of the product in mind, the ELC has carried out extensive research examining existing collection schemes for other products and, across the EU, focused on the schemes in place in Germany, Norway, the Netherlands, the UK and Sweden. It is in this last country – a model of environmental management - that the basis for the sustainable waste management blueprint was identified.

### ***The practical solution of the Collection and Recycling Service Organisation***

The setting up of a Collection and Recycling Service Organisation (CRSO) will allow for all WEEE Lamp producers and importers to be part of the scheme on a non-discriminatory basis. This organisation will have as its main mission the waste management of WEEE Lamp waste whether the Lamp is “historical” or not, and whatever the origin of its use, be it in a private household or not.

In order to fulfil this mission, the organisation will seek out and conclude agreements with recyclers and waste operators on a competitive tender basis, who will manage the collection and recycling logistics. The costs of this management will be passed on to the CRSO members as they are incurred, as for a “pay as you go” scheme.

In view of the impossibility to identify origin or age of the waste product, a single fee per unit will be charged to

producers. This fee is calculated on the basis of a net cost related to the cost of collection and recycling of the Lamp.

As per the Directive, the actual costs of the service will be taken on by the producers as of the stage of the transfer of WEEE from the collection points, and for the subsequent treatment and recycling.

### ***Common Collection systems and the volume of collected Lamps – a factor for collection and recycling efficiency***

The above practical solution can be made operational if certain criteria are met. The first criteria is that related to the need for all Lamp manufacturers to participate and the co-related protection against free-riders and the second is related to the volume of the collected Lamps.

The Swedish system, described at **Annex 3**, covers all Lamp types; the producer pays principle is applied for costs incurred from the transfer from the centralised collection depot to a recycling facility and the local authority or municipality covers costs for collection from the household or retail outlets to a centralised collection depot. Under such a system, entrenched in a national law of July 2001, which sets out the parameters, 1.7 million units were collected within four months.

The setting up of a scheme covering all WEEE Lamps, old and new and regardless of their origin or use, and financed by all WEEE Lamp manufacturers, can be interpreted as being compatible with the wording of the Directive. Indeed, at article

5.2.c) the Directive allows for collective systems for take back from private users provided that these are line with the objectives of the Directive.

Furthermore, at article 5.3., Member States are provided with choices as to how to organise the collection of non-household WEEE.

***A transparent fair fee system for all***

All collection and recycling systems require financing. The above practical arrangements are modelled on Sweden which applies a flat fee for all waste management costs (collection and recycling) per unit to all collected Lamp types.

The ELC firmly believes that this fee structure should be applied to waste Lamp management EU wide. The arguments in support of this lie in the need to achieve environmental goals whilst allowing for an economically viable and efficient scheme.

Indeed, a same charge on all types of WEEE Lamps regardless of their age and origin of use would only truly reflect the reality of the lack of variability in costs related to their transport to a recycling facility and the ensuing recycling process. If there is little variability in recycling and related costs, there should be little – ideally none – in the fee charged.

Recycling costs for several Lamp types range between approximately 3,5 and 5 euro per tonne<sup>8</sup>. The allowance for this flat fee system in the best interests of the EU consumer and environment must be entrenched into national legislation at implementation stage for this product specific collection and recycling scheme.

Again, as for Sweden, the ELC urges decision makers to allow for a “pay as

you go” system for Lamp collection in the EU. This system is crucial to the efficient functioning of the waste management of WEEE Lamps in the EU. The reasoning is that already covered and lies in the fact that Lamp recycling processes are disproportionately costly in relation to the retail price, that no distinction can be made between historical and non historical products whether from private households or not, and that large volumes of collected Lamps are required for the benefit of economies of scale.

Indeed, if one follows the life chain of the Lamp product, one notes that producers sell to luminaries’ manufacturers, to wholesalers and to major retailers across the EU. Each participant in the chain can apply a reselling method, a cost price build up or resale price composition, beyond the control of the producer and not visible to the purchaser.

Therefore, in order to ensure that retail price levels of WEEE Lamps remain affordable and that consumer choice is not indirectly geared away from energy saving Lamps with the subsequent environmental effects, national legislation should allow for a transparent financing mechanism, which reflects the net price of recycling only through to the final user.

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<sup>8</sup> Source: Com (2000) 347 final

It is a logical consequence that purchasers, who have a right to know the waste management cost and the extent to which they are making their own contribution to sustainable development, will accept such a system socially.

A final element related to the assurance given by ELC members to EU and national authorities that costs related to the collection and recycling of future WEEE Lamps WILL be met is the fact of the overwhelming stability of the Lamp manufacturing market players<sup>9</sup>. Since the rationale behind the requirement of the provision of a guarantee for the waste management costs of “new” products rests in the need to offer proof that the producer will cover the cost in the event that he will no longer be marketing that product in the foreseeable future, it is suggested that this requirement does not reflect the realities of the WEEE Lamp market and need not be applied in the light of the overarching pledge of the ELC members who will guarantee the setting up of a collection and recycling system for waste Lamps and thereby ensure the producer’s participation in the “appropriate” scheme.

In legal terms this requirement translates into a need for the continued allowance to apply a transparent fee to non-household WEEE Lamps and the possibility of displaying the costs of recycling of new waste Lamps until January 2011 (ideally through a separate line on the invoice in order to avoid retail “mark ups” at every step in the sales chain).

This requirement would lead to a re-examination – in order for the WEEE environmental goals to be met - of the article 8.2.3<sup>rd</sup> paragraph, on its prohibition of a visible fee for new household waste. As regards, article 9, it stipulates that producers must finance the waste management of non-household waste, yet for historical waste, other users can be made responsible for the financing. Furthermore, producers and users other than private households may conclude agreements stipulating “other financing methods”. Finally, despite the fact that no clear reference to a visible fee is made for the financing of the waste management of non-household historical waste, no prohibition is set out thereby enabling national decision makers to advocate the use of such a transparent financing mechanism for the management of WEEE Lamps in the EU.

***ELC members urge decision makers to re-examine the implementation of the considerations behind the financing provisions of the WEEE Directive based upon the following considerations; the difficulties for the WEEE Lamp sector to identify origin or age of the waste product, the extra costs incurred for sorting between private household and non private household goods which are disproportionate to the claimed environmental gain, the marked stability of the market players, the high recycling costs in relation to the product price AND the noted environmental record of this industry.***

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<sup>9</sup> For example; GE since 1887, Philips since 1891, Osram since 1990, Aura since 1930, Narva since 1966, BLV since 1968, LEUCI since 1919 and SLI over 100 years old.

## **Conclusions**










The above reasoning, advocating for a flat fee system for all the different WEEE Lamps and harmonised as much as possible across the EU Member States (whether *the Lamp is “historical” or not, and whatever the origin of its use, be it in a private household or not*) rests on a pledge made by the ELC WEEE Lamp manufacturers to shoulder their environmental obligations. These producers have not only sought to meet these obligations but, as a measure of their environmental record, have developed this blueprint for a sustainable and efficient waste management system for their specific products. The ELC is over 90% representative of the relevant market, which comprises only a small number of producers, of which each and all are environmentally responsible.

**The ELC members urge decision makers on a national level to focus on environmental concerns in overcoming other legal limitations and to endorse this comprehensive and ambitious but achievable blueprint.**

***“Let there be light”, and let it be sustainable.***

## ANNEXES TO TEXT “Let there be Light”

### Annex 1 – WEEE Lamp types product overview

Product Categories	Description		Products	Designs	Look alike Incandescent lamps
Fluorescent Tubes	Low pressure (some mbar) noble gas and mercury containing fluorescent powder radiant discharge lamps.	straight		> 15	
Non-linear fluorescent		different shapes		> 5	
CFL non-integrated		compact		> 25	
CFL integrated (energy savers)		compact + electronics		> 25	
High Intensity Discharge	High pressure (>1 bar) noble gas, mercury, sodium and salts containing atomic discharge lamps			> 50	
	Low pressure (some mbar) noble gas and sodium containing atomic discharge lamps			> 5	

***Annex 2 – the risk of cross sector dumping and difficulties associated with the waste definitions “private household” and “non private households”. ELC advocates that this categorisation be set aside and that all collected WEEE Lamps be under the same uniform financing system.***

## Collection Experience Norway

**Special waste goes missing in Norway**  
Environment Daily 1245, 27/06/02

About 50,000 tonnes of special waste, equal to 8% of the 631,000 tonnes generated in Norway in 1999, are unaccounted for, the national statistics office (SSB) said yesterday. The missing waste is up to 20,000 tonnes more than previously thought, it added.

"It cannot be ruled out that large parts of the 50,000 tonnes have gone missing and were therefore disposed of illegally," the agency said, though other factors, such failures to register legitimate disposal of waste, could also be important.

Illegal disposal could involve mixing special waste with ordinary waste taken to local authority or regional disposal sites, exporting it, simply pouring it into the sewerage system or dumping it in the countryside.

**According to Nationen newspaper, small and medium-sized businesses are the most likely culprits: in one county, for example, only 34% of car workshops surveyed delivered their special waste; in another, "irregularities" were discovered in all but three of 37 companies inspected.**

Follow-up: SSB <http://www.ssb.no/>, tel: +47 21 09 00 00, and the report <http://www.ssb.no/spesavf/>;  
Nationen <http://www.nationen.no/>, tel: +4722 17 41 00, and the article <http://www.nationen.no/59/46/45/0.html>.

**Annex 3 – The Environmental Success of the Swedish system in operation since 2001.**

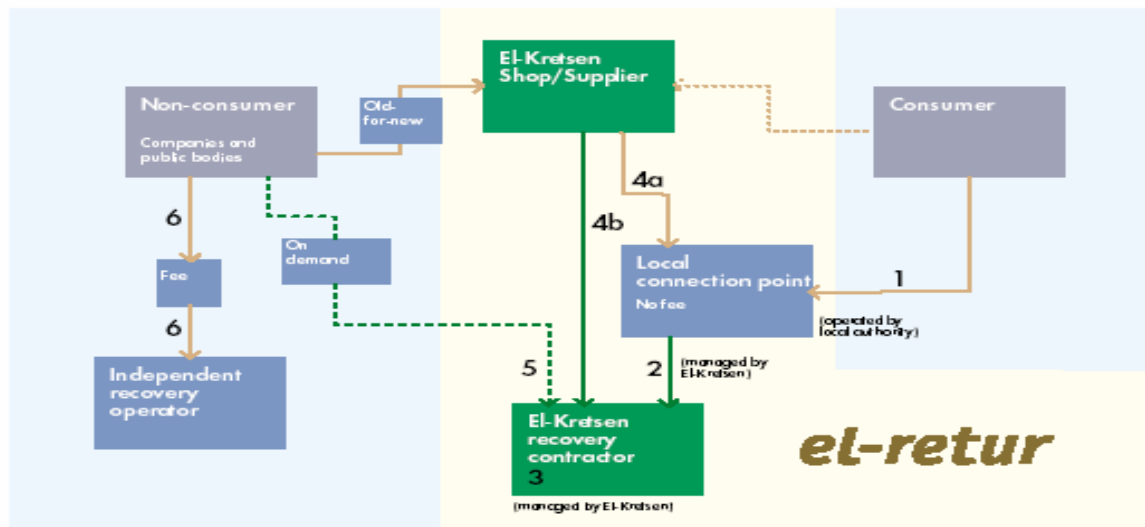
***This ELC favoured scheme operates under a flat fee system for all Lamp types. The producers are responsible for collection from the municipal collection points and for the recycling process. High collection rates are achieved in a sustainable manner for all stakeholders. Below is an extract (on how the system does now work) from the web site of El Kretsen, [www.el-kretsen.se/Index-e.htm](http://www.el-kretsen.se/Index-e.htm).***

## This is how El-Kretsen will work

The core of our solution is a close co-operation with the local authorities, who let us use their collection stations. They run them at their own initiative and expense. The producers finance further collection and

the recovery of all electronic waste collected at the stations. The whole system is called El-Retur.

The duties of the producers are performed by the service company El-Kretsen AB.



- 1** Consumers can give their waste to the collection facilities provided by the local authority, without cost. Usually there is a collection service for bulky and heavy products, at a fee.
- 2** El-Kretsen collects all waste taken back and transports it to...
- 3** ...recovery specialists contracted by El-Kretsen.
- 4** If a shop, supplier or service shop gets electronic waste it can
  - a) transport smaller quantities to a collection point and deposit it without cost
  - b) request El-Kretsen to collect.
- 5** For certain product groups El-Kretsen will offer supplementary services. See also next page, questions 4 and 5.
- 6** Companies and institutions that want to deposit larger quantities of electronic waste without buying new products, have to give them to a recycler, who will charge a fee.

The costs for the El-Kretsen operations (collection, on-demand collection, recovery, information etc) have to be financed by the importers/manufacturers, chiefly by fees on the sales of new products, that can eventually influence the price the consumer pays.

**The ELC looks forward to discussing with you the information and proposals contained in this paper. For further information please contact us at:**

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***Member Companies***

**AURA** Light International AB

**BLV** Licht-und Vakuumtechnik

**GE** Lighting Limited

**LEUCI** S.p.A.

**NARVA** Lichtquellen GmbH

**OSRAM** GmbH

**PHILIPS** Lighting BV

**Sylvania** Lighting International