Waste Electrical & Electronic Equipment (WEEE)

Dealing with electronic waste is a concern for industry and society. E-Waste is one of the fastest-growing waste streams, so it is important that our products are recycled.

- Closing the material loop
- E-waste legislation in Europe
- E-waste legislation outside Europe
- Recycling results and targets
- Information to customers (WEEE marking)

Closing the material loop
At their end-of-life, products are collected, stored, transported and treated. There are several treatment methods, resulting in a number of fractions, including glass, metal, plastic, fluo powders and mercury. As a responsible, sustainability-conscious company we want to "close the material loop" and use resources as efficiently as possible. Currently the recycling rate for lamps is approximately 85 to 90%.

Although voluntary collection programs are in place in some countries, most collection and recycling takes place in countries where recycling legislation has been enacted. Legislation is an important driver as it describes where our customers can drop off their old products and prescribes that all producers need to work together to collect as many products as possible.

E-waste legislation in Europe
Europe is the region where E-Waste legislation was first implemented, several countries having started recycling in the late 90s. The European Union reacted by publishing the Directive on Waste Electrical and Electronic Equipment (WEEE) in 2003. The purpose of this directive is to:

- prevent electrical and electronic equipment being disposed of as waste
- minimize the proliferation of hazardous substances such as mercury, and
- promote the environmentally sound recovery, recycling and re-use of such waste.

The scope of the Directive on WEEE contains 10 product categories, of which Lighting is category 5. Within category 5 the following product categories are included:

- Lamps (excluding incandescent and halogen lamps, but including LED retrofit lamps)
- Luminaires with the exception of household luminaires (Consumer Luminaires)
- Equipment for controlling and/or spreading light

The WEEE Directive applies the concept of (extended) producer responsibility, making producers responsible (from August 2005) for their products at the end of the products' lifetime, i.e. when they become waste. Producers are held responsible for financing the collection as well as the treatment, recovery and disposal of WEEE.

Within the overall WEEE scope, lamps have some very specific dynamics.

The cost of collection and recycling of lamps is 25-100% of the cost price of a lamp (incandescent and halogen lamps excluded). All other product categories within the scope of the WEEE Directive have either costs of only a few per cent of the cost price or even a positive value. For this reason, it is most important to control the costs of collection and recycling well and to ensure that there are very few, if any, 'free riders' in the market. As a consequence of the high volumes of lamps in combination with their low weight and fragility, as well as their hazardous substances content, lamps also require a specific and separate logistical and recycling approach.
In 2003, European lamp manufacturers decided to found CRSOs, not-for-profit Collection & Recycling Service Organizations dedicated to lamps and in some cases lighting fixtures. When the CRSO system was first set up, it became clear that we could not create one or only a few CRSOs in Europe, but that it was necessary to have separate CRSOs in all EU member-states, mainly for reasons of competition law. There are now lamp/lighting CRSOs in 22 EU member-states. These CRSOs have a market share of 75-95%; the other part of the market is occupied by other collective schemes.

With yearly sales of over 200 million WEEE lamps in the EU, and an average collection and recycling fee of €0.14, Philips' liability in Europe is an estimated €30 million per year. Outside Europe, an even higher liability may arise if countries copy the WEEE Directive, which is happening (see below).

Where do we collect and recycle lamps?

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For luminaires we either participate in an umbrella scheme that collects various WEEE product categories or some of the above-mentioned schemes that manage luminaires as well as lamps.

In 2008 the WEEE revision process was initiated, which resulted in the publication of WEEE II, Directive 2012/19/EU on July 4, 2012. The new Directive sets stricter requirements and increased targets for collection and recycling.

We also expect recycling legislation to be implemented in Turkey, Russia, Belarus and Kazakhstan in 2012.

E-waste legislation outside Europe
The European WEEE legislation has accelerated the adoption of end-of-life product take-back regulations around the world. In the United States there is no legislation at federal level; instead, from 2004 onwards, different states have implemented legislation. Canada has also been active in setting up collection and recycling systems across the country. Many countries in Latin America and Asia Pacific – e.g. China, India, Thailand, Australia, Argentina, Brazil, Colombia, Peru and Chile – are working on implementing E-Waste legislation in the coming years.
Rest of the world: Where do we see similar WEEE legislation being adopted?

To address the expanding legal initiatives and responsibilities, Philips Lighting has taken the lead in the following activities. First we initiated take-back projects in a few Latin American and Asian countries (e.g. Chile, Colombia, China, Malaysia) together with an expert consultant. In 2010 we joined the public/private partnership initiative under the wings of UNEP called “en.lighten” (www.enlighten-initiative.org). Philips was one of the main contributors to the en.lighten toolkit “Achieving the Transition to Energy Efficient Lighting”. One of the areas covered by the toolkit is “safeguarding the environment and health”, including a summary of existing international policy frameworks and best practices for the end-of-life treatment of lamps. Meanwhile 42 countries have adopted the en.lighten guidelines; further extension to 60 countries is expected in 2013.

Recycling results and targets
One of the three sustainability leadership KPIs that Philips has set is focused on closing the loop. The target is to double the amount of products that we collect and recycle by 2015 (compared to the reference year 2009). There is a continuous drive to further increase the collection and recycling in the existing systems in the EU, and a global project is working on improving collection in North America and setting up new systems in other parts of the world. Philips Lighting has defined a strategic direction to address the challenge of the collection and recycling of luminaires.
**How many lamps do we collect?**

Philips Lighting’s share of end-of-life lamps collected and recycled in tons (2011)

![Bar graph showing the share of end-of-life lamps collected across various countries in 2011.](image)

**Information to consumers**

Even in countries where legislation exists, there are still too many products that are not recycled. This means we need to continue educating our customers/end-users to properly dispose of our products so that they can be collected and recycled. Furthermore, we need to extend the number of collection points where especially households (residential end-users) can dispose of products that become waste at end-of-life.

There are two minimum requirements that apply to all Philips products. First of all, WEEE-relevant products should be marked with the crossed-out wheeled bin + date of manufacturing.

![Crossed-out wheeled bin with manufacturing date](image)

Secondly, the WEEE Directive requires us to include recycling information – in the local language – in our manuals. We use a standard text that meets all the legal requirements.