Premier Farnell

New Batteries Directive

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Introduction to the new EU Battery Directive

The European Union adopted the “Batteries Directive” (91/157/EEC) in March 1991. This introduced restrictions on the use of mercury in most batteries and encouraged collection and recycling. However the objectives of this Directive have not been achieved as most portable batteries are still being sent to landfill. As a result, the EU has introduced, and adopted, a new battery directive (2006/66/EC) that will come into force on 26 September 2008 and replace the existing Directive. National legislation is also due by this date.

Definitions

Batteries and accumulators are sources of electricity generated by chemical energy. These may consist of one or more battery cells. For example, small rectangular 9V batteries consist of six individual 1.5V cells connected in series and packaged as one unit. The difference between a battery and an accumulator is not defined by the Directive but the proposed UK regulations define “batteries” as non-rechargeable primary batteries and “accumulators” as rechargeable or secondary batteries. Both are referred to here as “batteries”.

Battery packs consist of more than one battery and may include clips, wires, etc. which is used as a single unit by the user. Although defined by the Directive, there are no specific requirements for battery packs which are presumably considered as “batteries”.

Button cell is a small round battery with a diameter that is larger than its height. These are defined because the maximum allowed concentration of mercury in button cells is higher than in other types of battery.

Producers are responsible for financing the collection, treatment and recycling of waste batteries. Producers are defined by the Directive as in table 1:

Table 1: Definition of “Producer”

Producers	Examples
Manufactures and sells batteries in a Member State	Battery manufacturer
Private label owner	Battery distributor or retailer who sells batteries with an own brand label
Domestic OEM selling equipment with batteries	Equipment manufacturer who sells equipment that contains one or more batteries
Battery importer	Distributor or retailer who imports batteries for sale
Importer of appliances and vehicles that contain batteries	Electrical equipment and vehicle importers
EU based distance sellers	Sell batteries or equipment containing batteries to users in a different EU Member State
Distance sellers based outside the EU	Sell batteries or equipment containing batteries to users in an EU Member State

Portable, industrial and automotive batteries are defined in table 2. This table also lists the differing obligations on producers for each type of battery:

Table 2: Definition and obligations for portable, industrial and automotive batteries

	Portable	Industrial	Automotive
Definition	Sealed, can be hand carried and is not industrial or automotive. UK assumes that this includes any portable, sealed battery that can be used in consumer equipment.	Designed exclusively for industrial or professional use. Intended for electric vehicles as a power source. Unsealed but not automotive. Sealed but not portable.	Used for automotive starting, lighting and ignition. Excludes vehicle power source batteries which are classed as industrial.
Collection targets	25% by September 2012. 45% by September 2016.	100% (landfill and incineration banned).	100% (landfill and incineration banned).
Compliance options proposed for collection and recycling	Either a single national or multiple compliance schemes.	Allow businesses to continue existing private schemes or set up producer compliance schemes.	Allow businesses to continue existing private schemes or set up producer compliance schemes.
Producers obligations	All must register. May need to join a compliance scheme.	All must register. Collect and recycle batteries, join a scheme that does this or may make alternative arrangements with customers.	All must register. Collect and recycle batteries or join a scheme that does this.

Producers' obligations

As shown in table 2, all battery producers will be obliged to register in each EU State where they place batteries on the market (with the possible exception of distance sellers in some States).

The approaches to compliance within each EU State are still under discussion but it is possible that portable batteries and industrial and automotive batteries might have different approaches. Collection rates for portable batteries are currently very low in most EU States, including the UK, whereas collection rates for many types of industrial and automotive lead-acid batteries are already very high. Therefore two approaches are being considered for industrial and automotive batteries whereas the most likely approach for primary batteries will be using producer compliance schemes.

Portable

Portable batteries are used by consumers and by industry. These are sold as individual batteries and also in equipment. Primary batteries reach end-of-life (when discharged) before the equipment and so many waste primary batteries will be available for recycling. Rechargeable batteries are sold as individual batteries or in electrical equipment and so many will reach end-of-life when the equipment's life ends. As a result, the user will remove some and others would be removed by WEEE recycling schemes. Therefore any system for collection of portable batteries will need to account for all of these routes. Options include:

- Take-back by retailers: This could be similar to existing distributor take-back schemes that are available for waste electrical equipment.
- Take-back by battery or equipment supplier: This approach is mainly appropriate for professional and industrial batteries although larger manufacturers could collect batteries from consumers.
- Use of compliance schemes: Several compliance scheme options are being considered ranging from one single national scheme to many competing schemes, with or without a coordinating body (e.g. a clearing house).

It is probable that a combination of approaches will be used in a similar way that the WEEE Directive is implemented. One option is for the authorities to set targets for collection of waste batteries either for individual producers that have opted to collect batteries or for schemes that collect on behalf of members. Targets are likely to be based on current market share. Batteries are already collected by WEEE compliance schemes when waste electrical equipment is disassembled. Most of these batteries will be portable and should be recycled.

Industrial and automotive

Two options are being considered, either to allow existing arrangements to continue, or to set up producer compliance schemes.

Compliance schemes may work with local authorities as is the case now with waste electrical equipment.

Although all producers (as listed in table 1) must register, Member States may exclude "Small" producers (who sell only small numbers of batteries) from any obligation to finance collection and recycling of batteries. The directive does not define "small" producers however.

The collection and recycling requirements will be enforced and so some form of evidence of compliance will be required from producers or the schemes that they join. The Directive specifies recycling targets which are listed in Annex III and must be met by 26 September 2011.

Substance restrictions

The Directive will restrict the use of mercury and cadmium in batteries. The mercury restriction is unchanged from the 1991 Battery Directive but the cadmium restriction is new.

- Mercury in batteries except button cells
  Maximum of 0.0005% mercury by weight of battery
- Mercury in button cells
  Maximum of 2% mercury by weight of battery
- Cadmium in batteries
  Maximum of 0.002% cadmium by weight of battery but with three exemptions -
- Emergency and alarm systems including emergency lighting
- Medical equipment
- Cordless power tools (this exclusion will be reviewed by September 2010 and may be withdrawn)

Note that there is no restriction on lead in batteries but if present at > 0.004% by weight the battery must be labelled with "Pb".

As the End-of-Life Vehicle (ELV) Directive pre-dates the new Battery Directive, the ELV substance restrictions should take precedence over those in the Battery Directive. The UK government interprets this as the concentrations of cadmium and mercury in automotive batteries would be permitted, in theory, to be higher than the Battery Directive's upper limits although in practice, lead-acid batteries are nearly always used and do not normally contain these metals.

Battery labelling requirement

– on the battery unless this is too small, then on packaging

- Crossed wheelie bin symbol
- Capacity of batteries (portable and automotive only) required from 26 September 2009 (harmonised rules for this should be available by 26 March 2009)
- "Hg" printed below wheelie bin symbol if battery contains >0.0005% mercury
- "Cd" printed below wheelie bin symbol if battery contains >0.002% cadmium
- "Pb" printed below wheelie bin symbol if battery contains >0.004% lead

Information requirements for users

There are also requirements to provide information to consumers on:

- Potential effect of substances used in batteries on health and the environment
- Not disposing of batteries with other waste
- Details of collection and recycling schemes
- Explanation of symbols printed on batteries

Member States are likely to require producers, distributors and retailers to provide this information.

Requirement for easy removal of batteries from equipment

Article 11 of the new Directive affects the design of electrical equipment which must be made in such a way as to allow batteries either for replacement or at end-of-life for disposal to be "readily removed". "Readily removed" is not defined; the EC has published brief draft guidance but this is of only limited assistance. Removal may be achieved either by hand or with tools. This requirement is clearly intended to ensure that equipment users are able to remove batteries by opening a cover by hand or after removal of one or a few screws. Lengthy dismantling that takes considerable time would not be permitted. However, the "boundary" is not defined and seems to rely on common sense.

The Directive also requires the producer to provide the user with instructions on how to safely remove the battery.

There are exemptions from this requirement where "for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection". Under these circumstances, the battery can be built in to the product so that its removal is difficult.

Impact on batteries and equipment design

Many millions of batteries are used in the EU, with most of them being made in the Far East. The increase in substance restrictions and the requirement for labelling with Hg, Cd or Pb if present would imply that analysis might be expected if there is a risk of non-compliance.

The requirement to mark batteries with their capacity could have the effect of encouraging consumers to select higher capacity batteries resulting in a shift in the market. Battery capacity is not the only important characteristic of a battery, however, so consumers may need educating to understand their requirements.

The requirement for easy battery removal from equipment has so far not been defined but could, in many cases, require equipment designs to be changed. Discussions on the definition are continuing and currently its interpretation is not clear.

There is no spare parts exemption and so alternative types may have to be used to replace NiCd after these are banned.

Please note:

The information contained in this guide is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavour to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.

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