EUROPEAN COMMISSION
DIRECTORATE-GENERAL
ENVIRONMENT

DRAFT

Frequently Asked Questions on

Directive 2006/66/EU on Batteries and Accumulators and Waste Batteries and Accumulators

(Updated version, May 2014)

PHOTO

Foreword

This Frequently Asked Questions (FAQ) document on Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators updates and replaces an earlier version of the document. It takes account of a number of amendments to the Directive including those agreed under Directive 2013/56/EU, which entered into force on 30 December 2013 and which Member States are required to transpose into national law by 1 July 2015

The document is principally intended to help competent public authorities and economic operators interpret the provisions of the Directive in order to ensure compliance with the Directive's requirements. However, the Directive being addressed only to the Member States, the rights and obligations for private parties exclusively flow from the measures enacted by the authorities of the Member States to implement it.

This FAQ document is considered to be a 'living document' and the Commission may update it as necessary in light of the experience with the implementation of the Directive and any future requirements.

Finally, as is customary, this FAQ document reflects the views of DG Environment and as such is not legally binding. Binding interpretation of EU legislation is the exclusive competence of the Court of Justice of the European Union.

QUESTIONS AND ANSWERS

ON THE

BATTERIES DIRECTIVE (2006/66/EC)[1]

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[1] OJ L 266, 26.9.2006, p. 1.

1. DIRECTIVE 2006/66/EC- HISTORY

Directive 2006/66/EC replaced Directive 91/157/EEC on batteries – why did the old version need to be amended?

Previous EU legislation on batteries (Directive 91/157/EEC) failed to adequately address the risks posed by waste batteries and to create a uniform system for collecting and recycling batteries.

For example, in 2002, more than 45 % of all portable batteries sold in the EU (i.e. 72 155 tonnes) went for landfilling or incineration.[2] Waste batteries collected were disposed of in this way instead of being recycled.[3]

Moreover, the EU needed a uniform system for collecting and recycling batteries, and in particular for financing these operations, to avoid 'free-riders' on the market and to create a level playing field for everyone involved.

Have any changes been made to Directive 2006/66/EC since its entry to force?

Yes. To date the Directive has been amended three times.

In 2008, it was modified twice as regards the implementing powers conferred on the Commission and as regards placing batteries and accumulators on the market[4].

In 2013[5], it was amended to remove exemptions regarding the use of cadmium in portable batteries used in cordless power tools (article 4.3) and with respect to the use of mercury in button cells (article 4.2). At the same time changes were made to some other provisions of the Directive, in particular placing on the market (article 6.2) and the removability of batteries (article 11). Furthermore, the procedural requirements for the registration of producers (laid down in Commission Decision 2009/603/EC) were incorporated in a new Annex IV of the Directive and Decision 2009/603/EC will be repealed upon with effect from 1 July 2015. The amended Directive[6] entered into force on 30 December 2013 and needs to be transposed by Member States by 1 July 2015.

Why does the Directive apply to all batteries and not just to hazardous ones?

Directive 2006/66/EC applies to all batteries because:

- all batteries contain substances which are harmful to the environment;
- experience with the previous Directive (91/157/EEC) on hazardous batteries (i.e. those containing mercury, cadmium or lead)[7] showed that 'all battery' collection schemes are more efficient than separate schemes for certain types of portable batteries;[8]

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2 Extended Impact Assessment by the European Commission SEC(2003)1343, p.11.
3 Extended Impact Assessment by the European Commission SEC(2003)1343, p.12.
4 Directive 2008/12/EC (OJ L 76, 19.3.2008, p 39) and Directive 2008/103/EC (OJ L 327, 5.12.2008, p. 7)
5 Directive 2013/56/EU (OJ L 329, 10.12. 2013, page 5)
6 Article 4 and Article 3 of Directive 2013/56/EU.
7 Commission Decision 2000/532/EC replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of

– all batteries contain metals which are recyclable,[9] so collecting and recycling all batteries help save resources, as required by Article 191 of the Treaty on the Functioning of the European Union.

2. CONTENT OF DIRECTIVE 2006/66/EC

2.1 Objective

What does the Directive aim to achieve?

The Directive has two aims:

1. To help protect the environment;

2. To help ensure that the single European market functions properly.

What environmental problems[10] *does the Directive address?*

Treatment of waste batteries and accumulators raises several environmental concerns, mostly due to the metals they contain.

Mercury, lead and cadmium are by far the most problematic of these substances. In Commission Decision 2000/532/EC, lead batteries, Ni-Cd batteries and batteries containing mercury are all classified as hazardous waste.

Other metals commonly used in batteries, such as zinc, copper, manganese, lithium and nickel, may also constitute environmental hazards.

When batteries are incinerated, the metals they contain pollute the atmosphere and the incineration residues. When batteries end up in landfills, the metals can leach into the soil and water. Moreover, batteries are a useful source of secondary raw materials. Thousands of tonnes of metals, including valuable metals such as nickel, cobalt and silver, can be recovered if batteries are properly recycled – and contribute to the EU's resource efficiency.

How are these environmental problems addressed?

By making it compulsory to collect and recycle batteries and accumulators, the Directive aims to prevent these items from being incinerated or dumped in landfills. The Directive also contains restrictions on the substances used in batteries and accumulators.

The Directive lays down:

– a prohibition of the use of mercury in all batteries (including button cells, as of 2 October 2015**[11]**;) (Article 4)

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hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste (OJ L 226, 6.9.2000, p. 3).

8 Extended Impact Assessment by the European Commission SEC (2003)1343, p.19.

9 Extended Impact Assessment by the European Commission SEC (2003)1343, p.20.

10 Extended Impact Assessment by the European Commission SEC (2003)1343, p.6.

- a prohibition of the use of cadmium in portable batteries (including, as of 1 January 2017, those used in cordless power tools), although with certain exemptions (Article 4);

- collection requirements for all batteries and collection targets for portable batteries (Articles 8 and 10);

- the requirement that all batteries and accumulators collected must be properly treated and recycled (with possible exemptions for portable hazardous batteries) (Article 12);

- a ban on landfilling or incinerating batteries from vehicles and industrial equipment (known as 'automotive and industrial' batteries) (Article 14);

- the requirement that battery recycling processes must meet minimum levels of efficiency (Article 12(4)).

What is the problem concerning the single European market?

Many national schemes for collecting and recycling batteries do not operate efficiently and were not designed to be part of the single European market. Without a clear EU framework for operating these schemes, different EU Member States have had different marketing requirements and have applied the 'producer responsibility principle' in different ways.

How does the Directive address this market problem?

The Directive harmonises product requirements for batteries as follows:

- it restricts the use of mercury in all batteries and the use of cadmium in portable batteries, with certain exceptions (Article 4);

- it requires that batteries be labelled with: (i) the chemical symbols Hg, Pb or Cd, (ii) a crossed-out wheel bin and (iii) a capacity label (Article 21).

The Directive states that, if batteries meet these requirements, they can be marketed in any EU country (Article 6(1)).

As per the amendment agreed to Directive 2006/66/EC in 2013 the wording of Article 6(2) was modified and it was clarified that batteries and accumulators which do not meet the requirements of the Directive, but which were lawfully placed on the market prior to the date of application of the prohibitions of the use of mercury and cadmium, may continue to be marketed until stocks are exhausted.

In addition, the Directive lays down minimum rules for operating national collection and recycling schemes, and in particular rules on how producers must finance these schemes (Article 16). To avoid 'free-riders', each EU Member State should keep a register of producers who place batteries on the national market (Article 17).

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[11] A study on the availability of button cells for hearing aids will be presented by the Commission 12 months before the expiry of the ban

2.2. Scope

What is the scope of Directive 2006/66/EC?

The Directive applies to all batteries and accumulators placed on the European Union market, unless, as per Article 2.2 of the Directive, they are used in equipment used to protect essential national security interests and equipment designed to be sent into space.

Are specific fuel-cells, classical capacitors and super-capacitors covered by the Directive?

No. Fuel-cells, classical capacitors and super-capacitors are not covered by the definition of batteries in Article 3(1).

Are sealed batteries covered by the Directive?

Yes. The term "sealed" applies to most -if not all- types of batteries: Lead-acid, Nickel-Cadmium (Ni-Cd), Lithium-Primary, Lithium-Ion (Li-ion), Zinc Alkaline, etc. The battery is sealed during normal use in order to avoid the spillage of the electrolyte out of the battery but also to protect the battery from the introduction of air inside the battery. Both the spillage and the air inlet would reduce the service life of the battery..

Are Valve Regulated Lead-Acid Batteries (VRLA) covered by the Directive?

Yes. A VRLA is a Lead-Acid battery as such it is covered by the Directive.

2.3 Preventive measures

What are the preventive measures in the Directive?

The Directive restricts the use of mercury in all batteries (Article 4(1)(a)). As per the amendment agreed to Directive 2006/66/EC in 2013, the exemption for the use of mercury in button cells will expire on 1 October 2015.

Furthermore, the Directive restricts the use of cadmium in portable batteries. It gives a list of exemptions (batteries intended for use in emergency and alarm systems, including emergency lighting, as well as medical devices) (Articles 4(1)(b) and 4(3)). As per the amendment agreed to Directive 2006/66/EC in 2013, the exemption for the use of cadmium in cordless power tools will only apply until 31 December 2016.

In addition, EU Member States are required to promote research and encourage improvements in the environmental performance of batteries through their life-cycle, and encourage the marketing of batteries which contain less polluting substances (in particular substitutes for mercury, cadmium and lead) (Article 5).

2.4 Collection

What are the requirements for collecting batteries?

The Batteries Directive aims to ensure that as many waste batteries and accumulators (portable, industrial and automotive) as possible are collected. To achieve this it lays down the following requirements.

With regard to portable batteries:

– Consumers should be able to return waste batteries to accessible collection points in their neighbourhood, free of charge and without any obligation to buy a new battery. (Articles 8(1)(a) and 8(1)(c));

– Distributors should take back waste batteries when supplying new ones (unless the existing alternative schemes are proven to be environmentally effective) (Article 8(1)(b));

– EU Member States are obliged to set up battery collection schemes but they may use existing schemes and/or have those schemes run by the battery producers and/or by other economic operators. Economic operators other than producers may be required to *participate* in the schemes but not to *set them up*. Only producers can *set up* schemes unless the Member State decides to keep 'existing schemes' (Article 8(2)).

With regard to waste industrial batteries:

– EU Member States are obliged to set up battery collection schemes but they may have those schemes run by battery producers or by third parties acting on their behalf. National governments must ensure that 'independent third parties' (e.g. private companies) may also collect waste industrial batteries.

– Producers, or third parties acting on their behalf, are obliged to take waste industrial batteries back from consumers (the 'end-users') (Article 8(3)).

With regard to waste automotive batteries:

– EU Member States are obliged to set up battery collection schemes but they may have those schemes run by the battery producers or by third parties. In this case, a 'third party' can be anybody who is not a producer (e.g. a local authority, an association or an independent economic operator).

– Producers or third parties must set up schemes for collecting waste automotive batteries which are not collected via schemes set up under the End-of-Life Vehicles (ELV) Directive.[12] People returning waste automotive batteries from non-commercial vehicles (such as private cars) should not be charged for doing so, nor should they be obliged to buy a new battery (Article 8(4)).

[12] Directive 2000/53/EC on end-of-life vehicles, OJ L 269, 21.10.2000, p. 34.

What are the collection targets for portable batteries?

The overall target set by the Batteries Directive is that 25% of all waste portable batteries should be collected by 2012 and 45% by 2016 (Article 10(2)).

How are the collection targets for portable batteries monitored?

The European Commission has adopted Decision (2008/763/EC)[13] on the method to be used to calculate *annual sales* of portable batteries to end-users. EU Member States must base their calculations on the quantities (weight) of portable batteries placed on the market in a given year, excluding batteries exported to other EU countries (Article 10(4)).

The placing of each battery on the market must be counted only once.

This information is used to monitor the portable battery *collection rates*, in accordance with Article 10(2) and Annex I of the Directive. Each EU Member State must report to the Commission once a year on the collection rate it has achieved that year. The report must state how the authorities obtained the data used to calculate the collection rate.

Why is there no collection target for industrial and automotive batteries?

Producers, or third parties acting on their behalf (for industrial batteries) / third parties (for automotive batteries) are obliged to take waste batteries back from end-users (Articles 8(3) and 8(4)). This obligation, combined with the ban on landfilling and incineration (Article 14), should be enough to ensure that batteries are collected. The use of financial incentives (Article 9) and the application of penalties for infringements (Article 25) aim to ensure that batteries are collected properly.

Unlike waste portable batteries, waste industrial and automotive batteries are large, their users are professionals, and they are mainly collected by professionals, due to their economic value.

As a result, nearly 100% of industrial and automotive batteries are already being collected:

- lead-acid batteries are collected because of the value of recycled lead;
- nickel-cadmium batteries are collected because there is a well-developed collection system in place.

2.5 Recycling

Why should we recycle batteries?

Battery recycling helps to save resources and increase security of supply by allowing valuable metals such as nickel, cobalt and silver to be recovered.[14]

The use of recycled metals in batteries requires less energy consumption.[15]

[13] OJ L 262, 1.10.2008, p. 39.
[14] Extended Impact Assessment by the European Commission SEC (2003)1343, p.13.
[15] Extended Impact Assessment by the European Commission SEC (2003)1343, p.13.

What examples are there of energy saved by using recycled metals in batteries?

Using recycled cadmium and nickel requires 46 % and 75 % less primary energy than extracting and refining virgin metals.

For zinc, recycling takes only about a quarter of the energy needed to extract the metal from its ore. The ratio is around 2.2 to 8.[16]

What recycling requirements are laid down in the Directive?

All batteries collected should be recycled (Article 12(1)(b)).

However, when disposing of waste portable batteries containing mercury, cadmium or lead, EU Member States may put them in landfills or underground storage (Article 12(1), second paragraph):

- if this is part of a national strategy to phase out heavy metals and an impact assessment shows that landfill/underground storage is a better option than recycling; or

- if no viable end-market is available.

In addition, the Directive specifies recycling efficiency levels, focusing on the quality of the recycling process (Annex III, Part B). This recycling efficiency requirement should be distinguished from the obligation to recycle all collected batteries and accumulators which relates to the quantity of waste batteries sent to recycling instead of disposal.

What recycling efficiency levels are laid down in the Directive?

Battery recycling processes must meet the following levels of efficiency since September 2011 (Article 12(4) and Annex III, Part B):

- Lead-acid batteries: recycle lead as far as technically feasible, and recycle a minimum of 65 % of batteries by average weight;

- Nickel-cadmium batteries: recycle cadmium as far as technically feasible, and recycle a minimum of 75 % of batteries by average weight;

- Other batteries: recycle a minimum of 50 % of batteries by average weight.

Commission Regulation 493/2012 lays down detailed rules regarding the calculation of recycling efficiencies of the recycling processes of waste batteries and accumulators[17]. The Commission has also published a guidance document on the application of the Regulation.[18]

Does the Directive lay down any requirements for treatment of waste batteries?

In addition to levels of recycling efficiency, the Directive specifies how waste batteries are to be treated. The minimum requirement is that fluids and acids must be removed. The Directive

[16] Extended Impact Assessment by the European Commission SEC (2003)1343, p.13.
[17] OJ L 151, 12.6.2012, p. 9
[18] http://ec.europa.eu/environment/waste/batteries/pdf/Guidelines%20on%20RE.pdf

also describes the conditions under which waste batteries must be treated and stored (Article 12(2) and Annex III, Part A).

2.6 Financing and producer responsibility

Who will pay for the collection, treatment and recycling of batteries?

- In line with the 'producer responsibility principle', battery producers, or third parties acting on their behalf, must finance the net cost of collecting, treating and recycling collected waste batteries (Article 16(1)).

- Producers and users of industrial and automotive batteries may agree together on alternative financial arrangements (Article 16(5)).

- Producers, or third parties acting on their behalf, are also responsible for financing the costs of public information campaigns on collecting, treating and recycling waste portable batteries (Article 16(3)).

- Some batteries are collected under both Directive 2000/53/EC on end-of life vehicles and Directive 2002/96/EC on waste electrical and electronic equipment. In such cases, EU Member States must make sure that producers are not charged twice for the same operation (Article 16(2)).

What is the difference between 'third parties' and 'third parties acting on behalf of producers'?

Under Article 16 of the Directive, a third party acting on behalf of a producer must pay for the collection, treatment and recycling of waste batteries and accumulators. Other third parties are not subject to this obligation.

For example, a 'third party' that is not a producer and does not act 'on behalf of' a producer may *collect* automotive batteries. However, this third party is not responsible for *financing* the collection and treatment of waste automotive batteries.

What is the definition of 'battery producer'?

According to the definition given in Article 3 of the Directive, the 'producer' is the person in an EU Member State who supplies or makes available to a third party batteries or accumulators (including those incorporated into appliances or vehicles) within the territory of that Member State for the first time on a professional basis. This definition applies regardless of the selling technique used and irrespective of whether the batteries are supplied in return for payment or free of charge. A 'battery producer' may also be a person who imports batteries into the customs territory of the European Union.

Who is the 'battery producer'? - Examples

- *A battery manufacturer or importer in an EU Member State sells batteries to a retailer who in turn sells them to customers ('end-users') in that Member State*
  In this case, the battery manufacturer or the importer is the 'producer' in that Member State, as they are placing the batteries on the market for the first time in that Member State.

– *A retailer sells batteries in a particular EU Member State, but he bought those batteries in a different country.*
  In this case, as the retailer is placing these batteries on the market in this EU Member State for the first time, the retailer is the 'producer'.

– *An equipment/car manufacturer in a particular EU Member State buys batteries from a battery manufacturer or importer in that Member State. These batteries are then put into equipment/cars which are sold in the same Member State.*
  In this case, the battery manufacturer or importer is the 'producer' in this Member State as he is selling to the equipment/car manufacturer and thus placing the batteries on the market in that country for the first time.

– *An equipment/car manufacturer or importer in a particular EU Member State buys batteries in a different country. He incorporates these batteries into equipment/a car which he then sells in his home country.*
  In this case, the 'battery producer' in this Member State is the equipment/car manufacturer or importer himself, since it is he who places the batteries on that market for the first time.

– *A company imports batteries from a non-EU parent company for its independent subsidiary located in an EU Member State*
  In this case, the independent European subsidiary is the 'producer', as it is the subsidiary which places the batteries on the market in that Member State for the first time.

– *Batteries or battery cells are sold in an EU Member State to a battery pack assembler and are then sold within the same Member State.*
  In this case the battery pack assembler is the 'producer', as he makes the battery pack available on the market in that country for the first time on a professional basis.

– *A battery manufacturer in a particular EU Member State sells batteries to a private label owner in that Member State. These batteries are then sold in the same Member State (under the label of the private owner and not under the label of the battery manufacturer).*
  In this case, the private label owner is the 'producer', as he places the batteries with its own label on the market in that country for the first time.

How does the Directive deal with small producers?

The Batteries Directive allows EU Member States to exempt producers which, relative to the size of the national market, place very small quantities of batteries or accumulators on the national market from the financial obligations (Article 16(1)) of 'producer responsibility', provided this does not prevent the battery collection and recycling schemes from working properly (Article 18(1)).

The way producers are to be registered in EU Member States has been harmonised through Commission Decision 2009/603/EC[19] (to be repealed as of 1 July 2015 and to be incorporated in Annex IV of the amended Batteries Directive) , thus reducing the administrative burden of registration (Article 17).

[19] OJ L 206, 8.8.2009, p. 13.

How does the Directive deal with the 'free rider' problem?

The 'free rider' problem means that battery producers are able to reap the benefits of the Batteries Directive's requirements 'for free', i.e. without paying for the collection, treatment and recycling of batteries. To prevent this, each EU Member State should keep a national register of all battery producers/importers to ensure proper implementation of their financial and organisational responsibilities. The registration procedure has been harmonised by Commission Decision 2009/603/EC. This requires producers to provide the following information:

- Their name and the brand names (if any) under which they operate in that country ('Brand name' means the name under which a batteries producer operates in a given EU Member State. This is the name used by battery producers to identify themselves as individual businesses, i.e. their legal entities in an EU Member State).

- Their address(es): post code and location, street name and number, country, internet address, telephone number, name of a contact person, fax number and e-mail address, if any;

- The type of batteries they place on the market - whether portable, industrial or automotive. The brand names of the batteries are not required, nor does the producer have to register each battery type separately.

- Information on how they meet their responsibilities - whether via an individual or a collective scheme.

- The date on which they are applying for registration.

- Their national identification code, possibly including their European or national tax number.

- A declaration stating that the information provided is true.

2.7 Labels/End-user information

What labelling requirements apply to batteries?

- Crossed-out wheeled bin applies to all batteries (Article 21(1)).

- Chemical symbols (Hg^{20}, Cd, Pb) apply to batteries which contain more than a given amount of these metals (0.0005% mercury, 0.002% cadmium and 0.004% lead) (Article 21(3)).

- A capacity label must be placed on all portable (rechargeable and non-rechargeable) and automotive batteries and accumulators (Article 21(2)). For portable rechargeable and automotive batteries this has been done with Commission Regulation 2010/1103/EU

[20] As per the amendment agreed to Directive 2006/66/EC in 2013, the exemption for the use of mercury in button cells will expire on […]

establishing rules as regards capacity labelling of portable secondary (rechargeable) and automotive batteries and accumulators [21].

How should batteries be marked with a chemical symbol?

All batteries, accumulators and battery packs must be labelled with the crossed-out wheeled bin (Article 21(1)), which indicates that batteries should not be thrown away with other waste – they should be collected separately. In addition, batteries, accumulators and button cells which contain more than the above-mentioned amounts of mercury, cadmium or lead must be labelled with a chemical symbol (Hg, Cd or Pb). In other words, the chemical symbol always accompanies the crossed-out wheeled bin, never as a stand-alone label.

If the battery or accumulator is so small that the required symbol (crossed-out wheeled bin or crossed-out wheeled bin accompanied by the chemical symbol) would measure less than 0.5 x 0.5 cm, the following special rules apply:

- if the battery or accumulator is sold separately, the symbol (measuring at least 1 x 1 cm) must be printed on the packaging;
- if the battery is incorporated into electrical and electronic equipment (EEE), the symbol must be printed on the packaging of the EEE;
- if the battery is incorporated into EEE which does not have any packaging, the Directive stipulates nothing regarding labelling.

What capacity labelling rules apply to portable and automotive batteries?

Article 21(2) of the Directive requires that all portable (rechargeable and non-rechargeable) and automotive batteries and accumulators carry a capacity label. The purpose of this label is to provide useful, easily understandable and comparable information to consumers purchasing different batteries and accumulators.

With respect to portable rechargeable and automotive batteries and accumulators the detailed rules implementing this requirement (both regarding the determination of capacity and labelling) are laid down in Commission Regulation 1103/2010[22]. The Regulation came into force on 30 November 2010 and applies to portable rechargeable and automotive batteries and accumulators placed on the market for the first time 18 months after this date, i.e. from 31 May 2012.

In accordance with this Regulation the capacity of automotive batteries and accumulators (lead-acid starters) shall be determined on the basis of standard IEC 60095-1/EN 50342-1. It is recommended to also apply this standard with respect to the information to be provided on the capacity label as regards the level of accuracy of the value of the rated capacity and the cranking current.

[21] OJ L 313, 30.11.2010, p. 3.
[22] See footnote 20

As standard IEC 60095-1/ EN 50342-1 does not cover methods for determining the capacity of automotive batteries and accumulators used in *motorcycle* applications, it is not currently possible to apply the Regulation to this type of batteries and accumulators. A standard for automotive batteries and accumulators used in motorcycle applications is currently under development by the competent standardisation bodies (CEN/CENELEC).

Establishing rules on capacity labelling for portable non-rechargeable batteries - which according to Article 21(1) of the Directive should also have been in place by 26 September 2009 - has proved more complex than expected, because the delivered capacity of such batteries very much depends on the pattern of use of the equipment which they power. Building on two earlier studies prepared for the Commission, a November 2012 CENELEC feasibility study confirmed that it is not currently possible from a technical point of view to design one single, simple, meaningful and workable capacity label for portable non-rechargeable batteries[23].

What will be done to address the absence of harmonised EU rules on capacity labelling for portable non-rechargeable batteries?

As it has proved not currently possible to draw up harmonised rules for the capacity labelling of portable non-rechargeable batteries, the Commission – taking account of the suggestions made in the CENELEC feasibility study – will look into other performance-based labelling options to meet the overall objective of the provisions Article 21(2).

Any national labelling requirements will apply only until harmonised EU requirements are in place. Meanwhile, EU Member States must notify the Commission of any new technical implementing measure(s), in accordance with Directive 98/34/EC for technical standards and regulations.

How will end-users know what to do with waste batteries?

Article 20(1) of the Directive obliges the authorities of EU Member States to ensure that consumers are told:

– about the potential environmental and health effects of substances used in batteries;

– not to put batteries in with other waste but to keep them separate;

– about the collection and recycling schemes they can use;

– what they can do to help recycle waste batteries;

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[23] The CENELEC "Feasibility Study on Labelling and Efficiency of Primary Batteries" (http://ec.europa.eu/environment/waste/batteries/index.htm) concludes that at present there are no appropriate standards which can be used to apply an effective capacity label for portable non-rechargeable batteries. The study was preceded by a 2008 study ("Study establishing harmonised methods to determine the capacity of all portable and automotive batteries and rules for the use of the label indicating the capacity of these batteries", http://ec.europa.eu/environment/waste/batteries/index.htm) and a 2010 study ("Elements for an impact assessment on proposed options for capacity labelling of portable primary (non-rechargeable) batteries in the context of the Batteries Directive 2006/66/EC", http://ec.europa.eu/environment/waste/batteries/index.htm) which had been subject to consultations with national authorities and stakeholders. The studies underline the difficulty in designing a label that is informative enough (about how battery capacity varies with use) and that can also be easily understood by consumers in the short time they take to make their purchasing decision.

– what the labels mean.

Who is responsible for informing the public?

National authorities must ensure that the public is informed. Battery producers are responsible for financing public information campaigns on the collection, treatment and recycling of waste portable batteries (Article 16(3)). Other 'economic operators' (such as shops selling electronic goods) may be required to provide consumers with information on the issues mentioned in the previous answer (Article 20(2)).

2.8 Removing batteries from appliances

Which appliances are covered by the Directive's Article 11 concerning the removal of waste batteries and accumulators?

Article 11 applies only to electrical or electronic equipment (EEE), as defined by Article 3(11) of the Batteries Directive (2006/66/EC), i.e. any EEE as defined by the Directive 2012/19/EU on waste electrical and electronic equipment ('WEEE Directive'). However, the provisions in Article 11 do not apply to EEE need a continuous power supply to ensure their safety or performance, or for medical or data integrity reasons, and which must therefore remain permanently connected to the battery or accumulator.

Products not covered by the WEEE Directive containing batteries or accumulators do not need to meet the requirements of Article 11. However, under article 193 of the Treaty on the Functioning of the European Union Member States may choose to extend the scope of the removability requirement to products not covered by EU law, provided such measures pursue the same objectives, are compatible with the EU's internal market and competition rules, and are notified to the Commission in accordance with Directive 98/34/EC on technical standards and regulations.[24]

What does the Directive say about making sure that waste batteries can be removed from appliances?

Article 11 of the Directive, as amended in 2013, contains a number of requirements in this respect.

Its main objective is to ensure the removal of waste batteries and accumulators, thus facilitating their recycling as well as, by replacing them, extending the life-time of the appliances in which they are used.

Its main provision is that Member States must ensure that the electrical or electronic equipment covered by the Directive is designed in such a way that waste batteries and accumulators can be "readily" removed. This means that it should be possible to remove them without delay or difficulty and at a reasonable cost, where needed using the instructions provided.

[24] Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998, laying down a procedure for the provision of information in the field of technical standards and regulations and of rules on Information Society services (OJ L 204, 21.07.1998, p. 37), as amended by Directive 98/48/EC (OJ L 217, 5.08.1998, p.18).

If batteries or accumulators cannot be readily removed by end-users, these should always have the possibility to have them removed by "qualified professionals" (e.g. electronic repair shops or services) "independent of the manufacturer". For instance, to remove a battery from a watch, end-users may not be able to open the back cover of the watch case and instead take the watch to a watchmaker, who possesses the necessary skills and have at hand the standard professional tools that end-users may not have.

When should waste batteries and accumulators be removable from appliances?

Waste batteries should be removable from appliances during the lifetime of the appliance if the batteries have a shorter lifetime than the appliance, or at the latest at the end of the life of the appliance.[25]

2.9 Exporting waste batteries

What requirements must be met if batteries are exported for recycling?

Article 15 of the Batteries Directive states that, when waste batteries and accumulators are exported for recycling, whether inside or outside the European Union, they must comply with the waste shipment laws specified in Regulation No 259/93. However, since this Regulation was repealed on 12 July 2007, the transfer of waste batteries must now comply with Regulation No 1013/2006 on shipments of waste.[26]

When waste batteries are exported outside the European Union, Member States must require sound evidence that the recycling takes place under conditions equivalent to those set out in the Batteries Directive, including recycling efficiencies. The precise criteria for the assessment of equivalent conditions will be adopted by the European Commission through a delegated act.

2.10 Implementing the Directive

When do EU Member States have to transpose the requirements of this Directive?

EU Member States had to transpose the requirements of this Directive into their national legislation by 26 September 2008. The amendments agreed to the Directive in 2013 need to be transposed by 1 July 2015.

Can the Directive be transposed on the basis of environmental agreements with industry?

Yes. EU Member State governments can sign environmental agreements with economic operators on collecting and exporting waste batteries and on providing information for consumers.

What is the deadline for achieving collection targets for portable batteries?

The 25% collection target for portable batteries had to be met by 26 September 2012. Experience in EU Member States with well-developed collection schemes shows that such

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[25] The removability requirement of Article 6(1) and Annex II of the WEEE Directive (2012/19/EC) applies.

[26] Especially Article 49 of that Regulation.

schemes take four or five years to become efficient. This gives countries with underdeveloped collection schemes sufficient time to make them efficient.

The higher collection target of 45 % should be achieved by 26 September 2016.

When do the recycling requirements come into force?

- By 26 September 2009, all batteries collected had to be recycled (under certain circumstances EU Member States can landfill or store portable hazardous batteries).

- By 26 September 2011, the efficiency of battery recycling processes had to be at least 65 % for lead-acid batteries, 75 % for nickel-cadmium batteries and 50 % for other batteries. Lead and cadmium must be recycled to the highest degree that is technically feasible without incurring excessive costs.

Are national governments encouraged to use financial incentives to implement the Directive?

Yes. The Directive specifies that EU Member States can use 'economic instruments' to promote the collection of waste batteries and the use of batteries containing less polluting substances.

Are national governments obliged to report on the implementation of the Directive?

Yes. The Directive specifies that EU Member States must report regularly to the European Commission, using the questionnaire set out in Commission Decision 2009/851/EC.[27] The first report covered the four-year period from 26 September 2008 to 26 September 2012. Subsequent reports should cover periods of three years, i.e. from 26 September 2012 to 26 September 2015, from 26 September 2015 to 26 September 2018, and so on.

Member States must send their reports to the Commission no later than nine months after the end of the period concerned. For the first report, the deadline was 26 June 2013.

3. SUMMARY OF THE MEASURES IN THE DIRECTIVE ACCORDING TO BATTERY TYPE

What are the different types of batteries?

The Directive distinguishes between three battery types: portable, industrial and automotive batteries.

- Portable batteries:

  Portable batteries are batteries that are sealed, can be hand-carried and are neither industrial nor automotive batteries.

  They can be:

[27] OJ L, 312, 27.11.2009, p. 56.

- non-rechargeable batteries (e.g. zinc-carbon and alkaline-manganese 'general purpose batteries'), button cells, and lithium-oxide batteries; together these represent around 75% of all portable batteries in the EU;[28]

- rechargeable batteries (e.g. nickel-cadmium, nickel metal hydride, lithium-ion and lead-acid batteries), which make up the other 25% of portable batteries in the EU.

– Industrial batteries:

Industrial batteries are batteries that are designed for exclusively industrial or professional uses or used in any type of electric vehicles.

Industrial batteries in the EU comprise:[29]

- lead-acid batteries (96%);

- NiCd batteries (2%);

- others (2%).

– Automotive batteries:

These are batteries used for vehicle starting, lighting and ignition systems.

Do batteries used for agricultural purposes qualify as industrial batteries?

According to Article 3 of the Directive, industrial batteries are 'batteries designed for exclusively industrial or professional uses or used in any kind of electric vehicle'. If the agricultural equipment concerned is designed for exclusively professional agricultural use, its battery is an industrial battery.

Are batteries used in hybrid vehicles (vehicles that run on a combination of fuel and electricity) automotive or industrial batteries?

Hybrid vehicles have two types of battery. The first is generally a 12 V (usually lead-acid) battery used as an automotive starter for lighting and for ignition power. This is classified as an automotive battery.

The second type is a Lithium ion or a Nickel Metal Hydride battery, used mainly for propulsion purposes and as a warm starter. As this battery does not have the function of an automotive battery it does not fall under the definition of automotive batteries. It is used in a car that is partly powered by electricity, so it is used in some type of electric vehicle. It therefore qualifies as an industrial battery.

Can button cells qualify as industrial batteries?

[28] Bio Intelligence Final report of July 2003, p. 8.
[29] Extended Impact Assessment by the European Commission SEC (2003) 1343, p.65.

No. The definitions set out in Article 3 of the Directive make it clear that a 'button cell' is a small round portable battery used (for example) in hearing aids, watches and other small portable equipment. Consequently, a 'button cell' is portable and not industrial. Batteries that look like button cells but designed exclusively for industrial or professional uses or used in any type of electric vehicle are not classified as button cells.

Which batteries are the most harmful?

According to the list in Commission Decision 2000/532/EC, lead batteries, mercury-containing batteries and nickel-cadmium batteries are classified as hazardous waste.

What specific rules apply to portable batteries and accumulators?

- The use of mercury is restricted.
- The use of cadmium is restricted (except in batteries intended for use in emergency and alarm systems, including emergency lighting, and in medical equipment).
- Efficient national collection systems must be set up to allow consumers to return waste batteries free of charge in their neighbourhood. Distributors are obliged to take back waste batteries.
- A collection target of 25% had to be achieved by 26 September 2012 (45% by 26 September 2016).
- All batteries collected must be recycled, unless the country has a strategy to phase out heavy metals, or no viable end-market is available in that country. In that case, the national authorities are allowed to landfill or store hazardous portable batteries.
- Recycling processes must achieve a minimum efficiency of 65% for lead-acid batteries, 75% for nickel-cadmium batteries and 50% for other batteries. EU countries must recycle as much lead and cadmium as possible.
- Batteries must be readily removable from appliances, and all appliances containing batteries must be accompanied by instructions showing how the batteries can be safely removed (see point 2.8 above).
- Batteries must be labelled with a crossed-out wheeled bin and a capacity label. Those containing more than a given amount of mercury, cadmium or lead must also be labelled with the appropriate chemical symbol.

What specific rules apply to industrial batteries?

- The use of mercury is restricted.
- Battery producers or third parties acting on their behalf cannot refuse to take back waste batteries.
- All collected batteries must be recycled.
- Batteries cannot be disposed of in landfills or by incineration.

– Recycling processes must achieve a minimum efficiency of 65 % for lead-acid batteries, 75 % for nickel-cadmium batteries and 50 % for other batteries. EU countries must recycle as much lead and cadmium as possible.

– Batteries must be readily removable from appliances, and all appliances containing batteries must be accompanied by instructions showing how the batteries can be safely removed. (see point 2.8 above).

– Batteries must be labelled with a crossed-out wheeled bin. Those containing more than a given amount of mercury, cadmium or lead must also be labelled with the appropriate chemical symbol.

What specific rules apply to automotive batteries?

– Producers or third parties must set up collection schemes for waste batteries that are not collected under schemes set up under the ELV Directive.

– All batteries collected must be recycled.

– Batteries cannot be disposed of in landfills or by incineration.

– Recycling processes must achieve a minimum efficiency of 65 % for lead-acid batteries, 75 % for nickel-cadmium batteries and 50 % for other batteries. EU countries must recycle as much lead and cadmium as possible.

– Batteries must be readily removable from all appliances containing batteries must be accompanied by instructions showing how the batteries can be safely removed (see point 2.8 of the above).

Batteries must be labelled with a crossed-out wheeled bin and a capacity label. Those containing more than a given amount of mercury, cadmium or lead must also be labelled with the appropriate chemical symbol.

4. LINK WITH OTHER PIECES OF LEGISLATION

What is the relationship between the Batteries Directive and other EU legislation?

Recital 27 of the Batteries Directive stipulates that it applies 'without prejudice' to (i.e. without affecting) EU legislation on safety, quality and health requirements and specific EU waste management legislation, in particular Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end-of-life vehicles (3) and Directive 2002/96/EC.

What is the relationship between the Batteries Directive and the ELV Directive?

Scope

Directive 2000/53/EC on ‘End-of Life Vehicles’ (the ELV Directive) covers certain categories of vehicles, including their components, such as batteries. The Batteries Directive applies to all batteries and accumulators including automotive batteries and accumulators, ‘without

prejudice' to the ELV Directive (Article 2(1)). This means that batteries and accumulators in vehicles covered by the ELV Directive fall within the scope of the Batteries Directive, unless there are specific provisions in the ELV Directive that apply to batteries and accumulators used in such vehicles (see an example below on substance restrictions).

Substance restrictions

Both the ELV and the Batteries Directive contain substance restrictions. Article 4 of the Batteries Directive lays down restrictions on the use of mercury and cadmium, and it stipulates that these restrictions apply 'without prejudice' to the ELV Directive. Thus, and in line with recital 30 of the Batteries Directive, the use of cadmium in batteries used in electrical vehicles is prohibited, except for spare parts for electrical cars placed on the market before 31 December 2008[30], as these spare parts benefit from a specific exemption under entry 16 of Annex II to the ELV Directive.

Producer responsibility

The Batteries Directive and the ELV Directive both establish the principle of 'producer responsibility'. Under the Batteries Directive, a car producer is also regarded as a 'battery producer' in a EU Member State if he/she places the battery on the market (inside the car) for the first time in that country on a professional basis. The purpose of this rule is to ensure that there is a producer responsible for all batteries placed on the market. However, the Batteries Directive states that EU Member States should avoid double charging of producers when car batteries are also collected under the ELV Directive.

Collection schemes

Collection schemes must be set up for automotive batteries and accumulators that are not covered by ELV Directive collection schemes — for example, batteries removed from the vehicle during its 'use-phase'. The ELV collection schemes apply only to batteries and accumulators that are collected together with the vehicle during its 'end-of-life phase', i.e. when the vehicle is scrapped.[31]

Removal of waste batteries

Article 11 of the Batteries Directive applies to batteries and accumulators in electrical and electronic equipment. Consequently, it does not apply to automotive batteries in vehicles. However, if there is a detachable appliance in the vehicle that runs on batteries which are not automotive, they fall under the Article 11 requirements.

Treatment and recycling

Both Directives stipulate different requirements for battery treatment and recycling/re-use/recovery.

- The Batteries Directive specifies that the recycling process should comply with the requirements laid down in Annex III to that Directive.

[30] Annex II to Directive 2000/53/EC.
[31] Annex I to Directive 2000/53/EC.

– The ELV Directive requires that automotive batteries be at least removed from end-of-life vehicles after they are collected.

The recycling of automotive batteries counts towards achieving the targets of the ELV Directive. Specific rules for calculating these targets are laid down in Commission Decision 2005/293/EC.[32] The recycling of automotive batteries must comply with the recycling efficiencies specified in Annex III to the Batteries Directive.

Information for end-users

The Batteries Directive requires EU Member States to ensure that consumers ('end-users') are informed of the substances used in batteries and are told what the battery labels mean. End-users must also be told why it is beneficial to collect batteries separately from other waste. They must be informed of the collection and recycling schemes they can use and how they as consumers can help recycle waste batteries.

The ELV Directive, on the other hand, requires economic operators to provide information about how vehicles and their components are designed to be recoverable and recyclable. Consumers must also be of appropriate treatment facilities, ways to reuse, recycle or recover ELV and their components, and about the progress achieved in this respect.

What is the relationship between the Batteries Directive and the RoHS Directive?

Recital 29 of the Batteries Directive states that the RoHS Directive (which has been recast in the form of Directive 2011/65/EU [33]) does not apply to batteries and accumulators used in electrical and electronic equipment. In addition, recital 14 of the RoHS Directive specifically states that RoHS should apply without prejudice to the Batteries Directive. The Batteries Directive and the RoHS Directive have similar but different substance restrictions. The RoHS Directive restricts the use of heavy metals, such as mercury and cadmium, in electrical and electronic equipment but it does not apply to batteries.[34] The Batteries Directive restricts the use of mercury and cadmium in batteries.

Which Directive applies to the outer casings of battery packs? Is it the RoHS or the Batteries Directive?

According to the Batteries Directive, battery packs are also batteries, so the Batteries Directive applies to battery packs, including their outer casings.

What is the relationship between the Batteries Directive and the WEEE Directive?

Scope

The Batteries Directive applies to all batteries and accumulators placed on the EU market, 'without prejudice' to the WEEE Directive (Article 2(1)). This means that batteries and

[32] Commission Decision 2005/293/EC laying down detailed rules on the monitoring of the reuse/recovery and reuse/recycling targets set out in Directive 2000/53/EC of the European Parliament and of the Council on end-of-life vehicles (OJ L 94, 13.4.2005, p. 30).

[33] Directive 2011/65/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS), OJ L 174, 1.7.2011, p. 88.

[34] Recital (29) of Directive 2006/66/EC.

accumulators used in electrical and electronic equipment (EEE) fall within the scope of the Batteries Directive unless there are specific provisions in the WEEE Directive that apply to batteries and accumulators .if the batteries are part of the EEE when it becomes waste. Portable batteries and accumulators, including those incorporated into appliances, should be reported as specified in Article 10(3) of the Batteries Directive.

Collection and recycling

Batteries and accumulators incorporated in waste electrical and electronic equipment (WEEE) can be collected on the basis of the WEEE Directive. However, after collection, they must be removed from the appliance (electronic equipment) in accordance with Article 8(2) and Annex VII (as well as Article 3 (l)) of the WEEE Directive and they count towards the collection targets laid down in the Batteries Directive. These batteries and accumulators must be recycled as required by the Batteries Directive.

Producer responsibility

Under the Batteries Directive, a producer of electrical and electronic equipment (an 'appliance producer') is also regarded as a battery producer in a given EU Member State if the appliance producer places the battery (inside an appliance) on the market in that Member State for the first time on a professional basis. The aim is to ensure that there is a producer responsible for all batteries placed on the market. However, EU Member States must avoid charging producers twice when batteries are collected with appliances under the WEEE Directive.

Do the requirements set out in Article 11 of the Batteries Directive apply to batteries incorporated in infected medical devices?

The requirements set out in Article 11 do not apply to infected medical devices because they are not considered as 'appliances', e.g. they are not considered as electrical and electronic equipment (EEE) for the purposes of the WEEE Directive (see Annex IA[35]).

Infected products are understood to be products that have come into contact with blood or other biological contaminants before reaching the end-of-life stage.[36] Precautionary principle considerations and other exemptions under Article 11, such as the continuity of power supply, will apply here.

However, batteries in medical devices must meet the product requirements (substance ban, labelling and removability) set out in Directive 2006/66/EC. These requirements apply to batteries and accumulators regardless of whether they are placed on the market individually or incorporated in equipment.

If the batteries are separate from the medical devices in question, they need to be collected in accordance with Directive 2006/66/EC.

If the batteries are inside an infected medical device which has reached the end of its life, neither the Batteries Directive (2006/66/EC) nor the WEEE Directive apply to the collection of the device.

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[35] See Annex IA of WEEE Directive at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32002L0096:EN:NOT .

[36] See FAQ on WEEE Directive at: http://ec.europa.eu/environment/waste/weee/pdf/faq_weee.pdf.

Do the requirements set out in Article 11 of the Batteries Directive apply to batteries incorporated in toys and musical post cards?

– If the batteries are incorporated into electrical and electronic equipment (EEE) as defined by the WEEE Directive, this equipment will be considered as 'appliances' within the meaning of Article 3(11) of the Batteries Directive. In this case, the waste batteries need to be readily removable.

– Where legislation lays down more specific rules on how to remove the batteries from specific products (e.g. toys), these products must comply with those specific rules.

– In any case, Member States must ensure that the waste batteries are properly collected even if they are not readily removable.