

**EXPLANATORY MEMORANDUM TO**  
**THE BATTERIES AND ACCUMULATORS (PLACING ON THE MARKET)**  
**REGULATIONS 2008**

**2008 No. 2164**

**1** This explanatory memorandum has been prepared by the Department for Business, Enterprise & Regulatory Reform (“BERR”) and is laid before Parliament by Command of Her Majesty.

**2 Description**

2.1 These Regulations partially implement Directive 2006/66/EC (“the Directive”) on batteries and accumulators and waste batteries and accumulators and repealing Council Directive 91/157/EEC on batteries and accumulators containing certain dangerous substances.

2.2 The main purpose of the Directive is the protection of the environment and human health. It provides that new batteries (single use cells) and accumulators (commonly known as rechargeable batteries) or appliances containing batteries or accumulators that are placed on the market must not contain prohibited levels of heavy metals and that they must be labelled to show the heavy metal content and to promote recycling. It also provides that certain types of new electrical and electronic equipment must be designed in a way that facilitates the easy removal of waste batteries and accumulators for recycling purposes. These provisions apply to any person placing new batteries, accumulators or appliances on the market and are transposed in these Regulations. They replace similar provisions in Council Directive 91/157/EEC which the Directive repeals with effect from 26 September 2008. The Directive also provides that producers of batteries and accumulators must be registered and that they will be financially responsible for managing the waste that arises from the batteries and accumulators that they place on the Community market. These provisions apply to all producers and are being transposed by separate legislation.

2.3 These Regulations also revoke the Batteries and Accumulators (Containing Dangerous Substances) Regulations 1994 (S.I. 1994/232) (and amending instruments S.I. 2000/3097 and S.I. 2001/2551) and the Batteries and Accumulators (Containing Dangerous Substances) Regulations (Northern Ireland) 1995 (S.R. 1995/122) (and amending instrument S.I. 2002/300). These instruments implemented Directive 91/157/EEC.

**3 Matters of special interest to the Joint Committee on Statutory Instruments**

3.1 None.

**4 Legislative Background**

4.1 These Regulations partially implement the Directive by introducing heavy metal contents and labelling requirements in relation to new batteries and accumulators that are placed on the market; as well as design requirements in relation to certain types of new

electrical and electronic equipment. These Regulations will come into force on 26 September 2008 in accordance with the transposition deadline.

4.2 A Transposition Note has been prepared for this instrument and is attached to this memorandum at Annex 1.

4.3 BERR (formerly the Department of Trade and Industry) has previously submitted Explanatory Memoranda on the Directive.

4.4 The Directive was originally the subject of Explanatory Memorandum 15494/03 "Proposal for a Directive of the European Parliament and Council on batteries, accumulators and spent batteries and accumulators" on 6 January 2004 and a supplementary Explanatory Memorandum on 2 February 2004. The European Scrutiny Committee considered it politically important and debated it in Standing Committee C on 28 April 2004. The House of Lords cleared it in Sub-Committee D on 28/4/04 (Progress of Scrutiny 7/5/04, Session 03/04).

4.5 Explanatory Memorandum 7292/07 was submitted on 11 April 2007 on a "Proposal for a Directive of the European Parliament and of the Council amending Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators, as regards the implementing powers conferred on the Commission". The Commons European Scrutiny Committee considered it not legally or politically important and cleared it (Report 17, Session 06-07). The Lords Select Committee on the EU did not report on it (Progress of Scrutiny, 27/4/07, Session 06-07).

4.6 Explanatory Memorandum 8576/08 was submitted on 12 May 2008 on a "Proposal for a Directive of the European Parliament and of Council on amending Directive 2006/66/EC of the European Parliament, Council on Batteries and Accumulators and Waste Batteries and Accumulators as regards Art 6(2) on placing batteries and accumulators on the market". The Commons European Scrutiny Committee considered it not legally or politically important and cleared it (Report 23, Session 07/08). The Lords Select Committee on the EU referred it to Sub-Committee B for further consideration (Progress of Scrutiny, 27/6/08, Session 07-08). The proposal was cleared by the Lords Select Committee on 15 July 2008.

4.7 The proposed amendment, which the Commission believes clarifies the intention of Article 6(2) of the Directive, relates to "withdrawal from the market", will need to be adopted by the European Parliament and the Council. It was voted on and approved by the European Parliament on 9 July. It is anticipated that the European Commission will want the Council to consider and vote on the proposal at the earliest opportunity to expedite its adoption prior to the transposition deadline. The proposed amendment confirms the approach adopted by BERR in transposing Article 6(2) of the Directive in the Regulations.

## **5 Territorial Extent and Application**

5.1 This instrument applies to all of the United Kingdom.

## **6 European Convention on Human Rights**

6.1 As the instrument is subject to the negative resolution procedure and does not amend primary legislation, no statement is required.

## **7 Policy Background**

### *Policy*

7.1 The Directive aims to minimise the negative impact of batteries and accumulators and waste batteries and accumulators on the environment, and to ensure the smooth functioning of the Internal Market in batteries and accumulators. It seeks to achieve these aims in two main ways:

- by specifying composition and labelling requirements for new batteries and accumulators being placed on the EU market; and
- by requiring battery and accumulator producers to finance the net costs of collection, treatment, and recycling of waste batteries and accumulators, in order to achieve quantified collection and recycling targets.

7.2 The Directive applies to most types of new batteries and accumulators and also to certain new electrical and electronic equipment. These Regulations partially implement the Directive by transposing Articles 4, 6(2), 11 and 21(1), (3), (4), (5) and (6) of the Directive. These articles prohibit the placing on the market of batteries and accumulators containing more than permitted levels of mercury and cadmium, provide that new batteries and accumulators containing up to permitted levels of mercury, cadmium and lead must be labelled with the appropriate chemical symbol, require all batteries and accumulators to display a symbol encouraging separate collection, and introduce design requirements for certain appliances so that waste batteries and accumulators are easily removable.

7.3 BERR and the Department for the Environment, Food and Rural Affairs (“Defra”) will be consulting later in 2008 with separate draft legislation that will implement the remaining provisions of the Directive which deal with the collection, treatment and recycling of waste industrial, automotive and portable batteries and accumulators.

7.4 These Regulations revoke current legislation in Great Britain and Northern Ireland which introduced ceilings on permissible levels of mercury, cadmium and lead in batteries and accumulators, stipulated labelling requirements for batteries and accumulators containing those metals, and imposed design requirements on the appliances powered by such batteries and accumulators. This legislation transposed the Council Directive 91/157/EEC on batteries and accumulators containing certain dangerous substances (the “1991 Directive”). The provisions of the 1991 Directive did not, in the European Commission’s view, fully achieve the objectives of reducing the quantities of hazardous substances in waste batteries or of promoting the Internal Market in batteries. The Commission therefore proposed in 2003 a new Directive which, among other things, extended to non-hazardous batteries and accumulators many of the provisions of the 1991 Directive, and introduced the principle of producer responsibility for waste batteries and accumulators.

### *Consultation*

7.5 BERR has been in regular contact with the main stakeholders on an informal and formal basis both during negotiation of the Directive and since its adoption in September 2006. BERR, in conjunction with Defra (who leads on implementing the portable batteries producer responsibility provisions of the Directive), and the Devolved Administrations initiated a 3 month public consultation on options for implementing the Directive (URN 07/1701) between December 2007 and March 2008. BERR consulted a second time (URN 08/913) for six weeks from May to June 2008 on draft Regulations which transposed the Internal Market provisions of the Directive. Each consultation document, included a partial impact assessment, and was issued to many hundreds of contacts as well as being published in press notices and on the BusinessLink website.

The first consultation received 113 responses. The responses generally welcomed the Government's approach, but some sought clarification of particular requirements on those persons placing batteries on the market; raised concerns over the capacity labelling requirements; asked for a due diligence defence to be permitted; and requested further guidance be made available where possible on the "removal of waste batteries and accumulators" requirements. The second consultation received 24 responses which generally supported the Government's approach and the structure and content of the draft Regulations. The Government published a formal response to each consultation document.

7.6 BERR is publishing Guidance alongside the Regulations. Copies can be obtained at <http://www.berr.gov.uk/sectors/sustainability/batteries/page30610.html>.

7.7 The European Commission has also produced its own 'Questions and Answers on the Batteries Directive (2006/66/EC)' which was last updated in April 2008. It can be obtained from their website at <http://ec.europa.eu/environment/waste/batteries/index.htm>.

## **8 Impact**

8.1 A final Impact Assessment has been prepared for this instrument is attached to this memorandum at Annex 2.

8.2 The impact on the public sector is estimated to be in the region of £50,000 to £200,000 per annum to cover the costs of enforcing these Regulations (see paragraphs 1.57 to 1.64 of the Impact Assessment for further details).

## **9 Contact**

9.1 Steve Norgrove at the Department for Business, Enterprise & Regulatory Reform Tel: 020 7215 2981 or email [steve.norgrove@berr.gsi.gov.uk](mailto:steve.norgrove@berr.gsi.gov.uk) can answer any queries regarding the instrument.

## Summary: Intervention & Options

<b>Department /Agency:</b> <b>BERR</b>	<b>Title:</b> <b>Impact Assessment of Implementation of Internal Market Provisions of Batteries and Accumulators Directive (2006/66/EC)</b>	
<b>Stage:</b> Final	<b>Version:</b> One	<b>Date:</b> 10 July 2008
<b>Related Publications:</b> The Batteries and Accumulators (Placing on the Market) Regulations 2008 and Government Guidance Notes to Regulations.		

**Available to view or download at:**

<http://www.berr.gov.uk>

**Contact for enquiries:** Trevor Reid

**Telephone:** 0207 215 5843

**What is the problem under consideration? Why is government intervention necessary?**

The main problem under consideration is the need to harmonise requirements concerning the heavy metal content and labelling of batteries and accumulators so as to ensure the smooth functioning of the European Internal Market and avoid distortions of trade and competition within the Community. Government intervention is necessary because Government establishes the legal and administrative framework under which businesses can compete and trade effectively and so enable the operation of fair and open markets.

**What are the policy objectives and the intended effects?**

The policy objective is to transpose the Internal (Single) Market provisions of the European Batteries and Accumulators Directive (2006/66/EC) so as to protect and promote the European Internal Market in batteries and accumulators. The intended effects are that manufacturers and/or professional importers of batteries and accumulators can only place new batteries and accumulators on the EU market which meet certain requirements, and that non-compliant new batteries and accumulators are removed from the market.

**What policy options have been considered? Please justify any preferred option.**

The Internal Market requirements of the Batteries Directive give the UK little discretion in transposition, and so the UK Regulations mirror as closely as possible the main text of the Directive itself.

**When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?** The policy will be monitored by BERR with a full-scale review planned for three years after the Regulations have been in force.

**Ministerial Sign-off** For SELECT STAGE Impact Assessments:

*I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.*

Signed by the responsible Minister:  
Malcolm Wicks

**Date:** 8th August 2008

## Summary: Analysis & Evidence

<b>Policy Option: Option 1</b>	<b>Description: Transposition of Articles 4, 6,21, and 11 of Batteries Directive, and UK enforcement regime.</b>
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<b>COSTS</b>	<b>ANNUAL COSTS</b>		Description and scale of <b>key monetised costs</b> by 'main affected groups' The main costs are from the prohibition of certain hazardous substances in the production of new batteries and accumulators, and the labelling and marking of all batteries and accumulators. Manufacturers and importers of batteries and accumulators are the main affected groups
	<b>One-off</b> (Transition)	<b>Yrs</b>	
	<b>£ 0 million</b>	10	
	<b>Average Annual Cost</b> (excluding one-off)		
	<b>£ 8 million</b>		<b>Total Cost (PV)</b> <b>£ 61-63 million</b>
Other <b>key non-monetised costs</b> by 'main affected groups' None.			

<b>BENEFITS</b>	<b>ANNUAL BENEFITS</b>		Description and scale of <b>key monetised benefits</b> by 'main affected groups' The main benefits are from the protection and promotion of trade and competition across the European Internal Market for batteries and accumulators. There will also be environmental and health and safety benefits. All of these benefits are very difficult to quantify.
	<b>One-off</b>	<b>Yrs</b>	
	<b>£ Not Quantified</b>	10	
	<b>Average Annual Benefit</b> (excluding one-off)		
	<b>£ Not Quantified</b>		<b>Total Benefit (PV)</b> <b>£ Not Quantified</b>
Other <b>key non-monetised benefits</b> by 'main affected groups' Benefits from the protection and promotion of the Internal Market should accrue largely to UK businesses and consumers. Environmental benefits will accrue to all UK stakeholders.			

**Key Assumptions/Sensitivities/Risks** Key Assumptions include: the type and volume of batteries currently placed on the UK market, and the extent to which heavy metals are currently used in batteries and accumulators. The main risk relates to the current estimates of costs and benefits from the heavy metal restrictions on new batteries and accumulators.

Price Base Year 2008	Time Period Years 10	<b>Net Benefit Range (NPV)</b> <b>£ Not Quantified</b>	<b>NET BENEFIT (NPV Best estimate)</b> <b>£ Not Quantified</b>
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What is the geographic coverage of the policy/option?	UK				
On what date will the policy be implemented?	26 September 2008				
Which organisation(s) will enforce the policy?	BERR				
What is the total annual cost of enforcement for these organisations?	£ 50,000-200,000				
Does enforcement comply with Hampton principles?	Yes				
Will implementation go beyond minimum EU requirements?	No				
What is the value of the proposed offsetting measure per year?	£ None				
What is the value of changes in greenhouse gas emissions?	£ None				
Will the proposal have a significant impact on competition?	Yes				
Annual cost (£-£) per organisation (excluding one-off)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center; padding: 2px;">Micro unknown</td> <td style="width: 25%; text-align: center; padding: 2px;">Small unknown</td> <td style="width: 25%; text-align: center; padding: 2px;">Medium unknown</td> <td style="width: 25%; text-align: center; padding: 2px;">Large unknown</td> </tr> </table>	Micro unknown	Small unknown	Medium unknown	Large unknown
Micro unknown	Small unknown	Medium unknown	Large unknown		
Are any of these organisations exempt?	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center; padding: 2px;">No</td> <td style="width: 25%; text-align: center; padding: 2px;">No</td> <td style="width: 25%; text-align: center; padding: 2px;">N/A</td> <td style="width: 25%; text-align: center; padding: 2px;">N/A</td> </tr> </table>	No	No	N/A	N/A
No	No	N/A	N/A		

<b>Impact on Admin Burdens Baseline</b> (2005 Prices)		(Increase - Decrease)
Increase of £ 46k-186k	Decrease of £	<b>Net Impact</b> <b>£ 46k-186k</b>

Key: Annual costs and benefits: Constant Prices (Net) Present Value

## Evidence Base (for summary sheets)

[Use this space (with a recommended maximum of 30 pages) to set out the evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Ensure that the information is organised in such a way as to explain clearly the summary information on the preceding pages of this form.]

### **Transposition of the Internal (Single) Market Provisions of the European Batteries and Accumulators Directive (Directive 2006/66/EC)**

#### **Introduction**

1.1 The Batteries and Accumulators Directive (Directive 2006/66/EC - 'the new Batteries Directive') is concerned with all types of batteries and accumulators throughout their life-cycle, i.e. from the production stage through to when they become spent and are subsequently discarded as waste. In order to protect and promote the environment it relates to all spent batteries and accumulators that are discarded as waste at the end of their life. In relation to protection and promotion of the European Internal (Single) Market it relates to all new batteries and accumulators placed on the European Market.

1.2 The Internal Market provisions of the new Batteries Directive are based on Article 95 of the Treaty establishing the European Community. They are concerned with the use of certain heavy metals in the production, and placing on the European market of new batteries and accumulators (Articles 4 and 6 of the new Directive), and the labelling of new batteries and accumulators (Article 21 of the new Directive). In addition, Article 11 of the new Batteries Directive is concerned with the removal of batteries and accumulators from appliances. This Article has implications for the Internal Market by its very nature.

1.3 The Internal Market provisions of the new Batteries Directive, and their implementation in the UK, are the subject of this final Impact Assessment (IA).

#### **Background**

1.4 The Batteries and Accumulators Directive (Directive 2006/66/EC - 'the new Batteries Directive') updates and replaces the previous Directive on Batteries (Directive 91/157/EEC) which was concerned only with batteries and accumulators containing certain hazardous substances, namely mercury, cadmium and lead, and appliances and equipment powered by such batteries and accumulators.

1.5 Though considered to have at least partially achieved its aims, the European Commission believed that an up-dating and revision of Directive 91/157/EEC applying to all battery types would increase clarity, provide greater protection and promotion of the European Internal Market, and reduce environmental detriment where waste batteries and accumulators are concerned.

1.6 Heavy metals, such as lead and cadmium are used widely in batteries and accumulators for industrial and automotive applications. The use of heavy metals is less widespread in the production of portable batteries and accumulators, which are generally, but not exclusively, used in non-commercial, consumer applications. It has thus been estimated that the previous Batteries Directive applied to somewhere in the region of only 7 per cent of consumer batteries and accumulators. To ensure that any heavy metal restrictions and labelling requirements on new batteries and accumulators are more uniform across the European market, so as to

facilitate and promote effective competition in the market for batteries and accumulators, the heavy metal and labelling requirements of the new Batteries Directive covers all types of batteries and accumulators, to include all portable, industrial, and automotive batteries and accumulators.

1.7 As importantly, and in accordance with the European Community's 6<sup>th</sup> Environment Action Programme (EAP), an up-dating and revision of Directive 91/157/EC was considered necessary to increase protection of the environment, and reduce risks to health and safety where batteries and accumulators are concerned.

1.8 This up-dating and revision of the previous Batteries Directive was also driven by the adoption and implementation across Europe of the End-of Life Vehicles (ELV), the Waste Electrical and Electronic (WEEE), and the Restriction on certain Hazardous Substances (RoHS) Directives, given that batteries are used in vehicles and in electrical and electronic equipment (EEE). The WEEE Directive explicitly called for an up-dating and revision to Directive 91/157/EC.

1.9 BERR, DEFRA, the Department for the Environment Northern Ireland (recently re-named as NIEA), the Scottish Government, and the Welsh Assembly Government, consulted on transposition of the Internal Market provisions of the new Batteries Directive as part of a consultation exercise on transposition of the whole of the new Batteries Directive between 20 December 2007 and 13 March 2008 (there was a slightly different timescale in Northern Ireland).

1.10 This consultation paper contained a separate chapter on the Internal Market provisions of the new Directive and the partial IA that supported the consultation also contained a separate chapter on the estimated costs and benefits of transposing these Internal Market provisions.

1.11 There were 115 responses to this consultation exercise, of which on average around 50 per cent responded to the various questions relating to transposition of the Internal Market provisions. These responses generally supported the proposals for transposition of these Internal Market provisions.

1.12 Following this consultation, BERR decided to separate the transposition of the Internal Market provisions of the new Batteries Directive from the environmental provisions. The Internal Market provisions of the new Batteries Directive are somewhat simpler to transpose than the environmental provisions. It was considered that a separate and self-contained Statutory Instrument for the Internal Market provisions of the new Directive should give UK businesses clarity, and sufficient lead time, to enable them to comply with the new Directive with as little disruption to current practices as possible, whilst enabling them to continue to operate effectively in the Internal Market.

1.13 BERR subsequently consulted on separate draft Regulations to transpose the Internal Market provisions of the new Batteries Directive between 12 May and 20 June 2008. This consultation exercise produced 24 responses of which 15 responded specifically on the partial IA which supported the draft Regulations. Seven responses broadly supported the estimated costs and benefits in the partial IA, while three responses did not. All of the responses are discussed in this final IA.

## **Purpose and Intended Effect of Measure**

1.14 The new Batteries Directive has two main aims. The primary objective is “..to minimise the negative impacts of batteries and accumulators and waste batteries and accumulators on the environment..” (Recital 1 of the new Directive). The second is to “..ensure the smooth



*functioning of the internal market and avoid distortion of competition within the Community.”* (Recital 1 of the new Directive).

1.15 The new Batteries Directive contains three specific Articles that have a legal basis of Article 95 of the Treaty establishing the Community. These ‘Internal Market’ Articles are Articles 4, 6 and 21. They introduce the following provisions:

- Article 4 of the new Directive introduces prohibitions on the placing of the European market of batteries and accumulators containing a certain amount of heavy metals. Specifically:
  - All batteries and accumulators containing more than 0.0005 per cent mercury by weight are prohibited, with the exception of button cells where the restriction is no more than 2 per cent of mercury by weight.
  - Portable batteries containing more than 0.0002 per cent cadmium by weight are prohibited, but with the following exceptions: batteries and accumulators used in emergency and alarm systems, including emergency lighting; batteries and accumulators used in medical equipment; and batteries and accumulators used in cordless power tools.
- Article 6 of the Directive requires member States not to impede or restrict batteries and accumulators being placed on the market in their territories where they meet the requirements of the new Directive. In addition, it requires member States to ensure that batteries and accumulators not meeting the requirements of the new Directive are withdrawn from the market within their territory.
- Article 21 of the new Directive requires member States to ensure that new batteries, battery packs, and accumulators are:
  - Marked with the crossed-out wheeled bin symbol. Under some circumstances and where the battery is small this symbol can be placed on the battery packaging.
  - Batteries and accumulators containing more than 0.0005 per cent mercury are marked with the symbol Hg.
  - Batteries and accumulators containing more than 0.002 per cent cadmium are marked with the symbol Cd.
  - Batteries and accumulators containing more than 0.004 per cent lead are marked with the symbol Pb.
  - By 26 September 2009, and following establishment of the requirements under European Committee procedure, portable and automotive batteries and accumulators should have their capacity shown on them.

1.16 In addition, Article 11 of the new Batteries Directive builds on Article 5 of the previous Batteries Directive by requiring member States to ensure that manufacturers design appliances in a way that spent batteries and accumulators can be readily removed. The previous Directive applied this requirement to appliances containing batteries which used hazardous substances, i.e. mercury, lead, or cadmium batteries. The new Batteries Directive applies this requirement to appliances using any type of battery or accumulator. However, this requirement is not to apply where for safety, performance, power supply, or data integrity reasons a permanent connection between the appliance and the battery or accumulator is required. By its very nature Article 11 of the new Directive has implications for the Internal Market.

## **The Markets for Portable, Industrial and Automotive Batteries in the UK**

1.17 There is no official data on the volume and type of portable, industrial or automotive batteries and accumulators that are placed on the market in the UK in any particular year. This is because there has been no specific need for this data to be collected in the past. One of the aims of the new Batteries Directive is to collect such data across all European member States

to obtain a clearer picture of the operations of the Internal Market where batteries and accumulators are concerned.

1.18 There are a number of estimates of the size and composition of the UK market for the different types of batteries and accumulators in use today.

1.19 Portable batteries and accumulators can be non-rechargeable (so called 'primary' batteries) or rechargeable (so-called accumulators or 'secondary' batteries). The majority of portable batteries and accumulators are used in households, but a significant number are also used in business, commercial and industrial premises.

1.20 The batteries and accumulators market is an innovative and dynamic market. The European Commission's Extended Impact Assessment (COM(2003)723 final), (EIA)) which supported the proposal to introduce the new Batteries Directive estimated that the consumer battery market in the then fifteen members of the European Union had grown by some 70 per cent, in terms of the number of units sold, between 1985 and 1995.

1.21 The European Commission appointed Bio Intelligence Service to produce a report to inform it of alternative policy options available for revision of the then existing Batteries Directive, and to support proposals for a new Batteries Directive. This report, *Impact Assessment on Selected Policy Options for Revision of the Battery Directive*, ('the Bio Report') was published in 2003.

1.22 The Bio Report estimated portable battery sales in the EU-15 in the region of 160,000 tonnes in 2002. If we assume that the sale and use of portable batteries across Europe is in proportion to the size of the economy of a member State, then with the UK making up around one-sixth of EU GDP, the Bio Report estimate would imply that around 27,000 tonnes of portable batteries were placed on the UK market in 2002.

1.23 In 2000, the then Department for Trade and Industry (DTI), commissioned ERM consultants to undertake a report on the potential impacts of a new Batteries Directive. ERM estimated that some 640 million units of portable batteries were sold in the UK in 1999, representing some 18,500 tonnes. In 2006, the Department of Environment, Food, and Rural Affairs (DEFRA) commissioned ERM to produce a life-cycle assessment for separately collecting and recycling portable batteries in the UK according to the requirements of the new Batteries Directive. This report used a figure of 24,850 tonnes of portable batteries placed on the UK market in 2003.

1.24 An estimate from industry suggests that in 2006, UK sales of portable primary batteries amounted to some 24,000 tonnes, and almost 1 billion units. 2006 UK sales of portable accumulators (rechargeable batteries) were estimated to amount to some 6,000 tonnes, equating to just over 110 million units. These figures imply that in 2006 in the UK, sales of portable batteries amounted to some 30,000 tonnes and over 1.1 billion units.

1.25 In terms of chemistry, it is estimated that the vast majority of portable batteries and accumulators sold in the UK are non-hazardous, in that they are largely Alkaline Manganese and Zinc Carbon batteries. There are a range of other chemistries including a small but increasing number of lithium portable batteries and accumulators. Button cells and rechargeable batteries (including Nickel-Cadmium (NiCd), Nickel Metal-Hydride (NiMH) and Lithium-ion (Li-ion)) make up the majority of remaining UK sales.

1.26 In terms of market trends, for portable primary batteries, alkaline manganese has been increasingly replacing zinc carbon as the main chemistry. For rechargeable batteries, recent years have seen strong growth in Lithium-ion (Li-ion) and Nickel Metal-Hydride (NiMH) technologies, generally at the expense of Nickel Cadmium (NiCd) technology.

1.27 In terms of industrial batteries and accumulators, the Bio Report estimated that some 200,000 tonnes of industrial batteries and accumulators were placed on the EU-15 market in 2002, of which 97 per cent were lead-acid (Pb) batteries and accumulators, and the remainder were generally Nickel-Cadmium (NiCd) batteries and accumulators.

1.28 If we assume that industrial batteries and accumulators are used across Europe in proportion to the size of the economy of different member States, this could imply that based on the Bio estimates, UK sales of industrial batteries in 2002 were some 33,000 tonnes.

1.29 In 2000, the then Department for Trade and Industry (DTI), commissioned ERM consultants to undertake a report on the potential impacts of a new Battery Directive. ERM estimated UK sales for industrial batteries and accumulators in the region of 51,000 tonnes in 1999. ERM also presented estimates of the future growth of the UK market for industrial batteries and accumulators, and forecast this to rise to just under 68,000 tonnes by the end of 2005. Some recent estimates from ERM suggest that around 69,000 tonnes and some 3.5 million units of industrial batteries were sold in the UK in 2006. Differing opinion about what is, and what is not, an industrial battery and accumulator makes consistent and accurate estimation difficult. One of the aims of the new Batteries Directive is to introduce a clearer definition of industrial batteries and accumulators.

1.30 In terms of automotive batteries, the Bio Report estimated that some 860,000 tonnes of automotive batteries were placed on the EU-15 market in 2002, which could imply UK sales of automotive batteries in 2002 in the region of 143,000 tonnes.

1.31 In 2000, the then Department for Trade and Industry (DTI), commissioned ERM consultants to undertake a report on the potential impacts of a new Battery Directive. ERM estimated UK sales for automotive batteries and accumulators in the region of 109,000 tonnes in 1999. ERM also presented estimates of the future growth of the UK market for automotive batteries and accumulators, and forecast this to rise to just under 115,000 tonnes by the end of 2005. Some recent estimates from ERM suggest that around 131,000 tonnes and some 9 million units of automotive batteries were sold in the UK in 2006.

### *Sectors and Groups Affected*

1.32 The Internal Market provisions of the new Batteries Directive impact on all those who place batteries and accumulators on the European market. Principally, this is manufacturers of batteries and accumulators, but also includes those who sell batteries and accumulators under their own brand name, those who professionally import batteries and accumulators, and those who place appliances and vehicles containing batteries and/or accumulators on to the European market.

1.33 It is difficult to estimate the exact number of businesses that may be affected by the Internal Market provisions of the new Batteries Directive, not least because the Directive definition of a producer covers those who place batteries and accumulators on the market, and those who place appliances and vehicles on the market which contain batteries and accumulators.

1.34 It is estimated that around 10 per cent of primary portable batteries sold in the UK are 'own brand' batteries sold by larger retail chains. Those selling 'own brand' batteries are considered to be producers under the new Batteries Directive. There are no UK manufacturers of 'standard-size, general-use' portable batteries. There are some UK manufacturers of button cell batteries. There are an estimated 18 major international producers of portable batteries, a number of which are members of the British Battery Manufacturers' Association (BBMA).

1.35 It is believed that there are three manufacturers of industrial batteries operating in the UK today, and at any one time, an estimated 50-100 suppliers of industrial (and automotive) batteries importing on a professional basis into the UK.

1.36 Estimates based on some collection trials undertaken in the UK suggest that there are in the region of 600-700 different brands of portable batteries arising in the UK waste stream at any one time. These, and some industry estimates, suggest that the new Batteries Directive may, through its definition of a producer, obligate in the region of 1,000 businesses in relation to its Internal (Single) Market provisions. However, this number could be higher because the new Directive defines a producer also as a person who places batteries or accumulators incorporated into appliances or vehicles on to the market.

## **Costs and Benefits**

1.37 It is not straightforward to estimate the costs and benefits from UK implementation of the Internal Market provisions of the new Batteries Directive. The reasons for this are as follows:

- As there is little firm data on the number, size, and type of batteries and accumulators placed on the UK market it is difficult to determine precisely how many batteries and accumulators are affected by the Internal Market provisions.
- Some batteries and accumulators are already marked or labelled with some, or all, of the requirements of Article 21 of the new Batteries Directive, as the previous Batteries Directive itself required certain marking and labelling. However, it is difficult to know what proportion of batteries and accumulators currently placed on the market meet some, or all, of the labelling requirements of the new Batteries Directive.
- Also in terms of the marking and labelling of batteries and accumulators, the new Batteries Directive gives some scope for the crossed-out wheeled bin to be placed on packaging and not on individual batteries and accumulators. This gives some scope to limit the costs of marking, but it is unclear exactly how many batteries and accumulators this will apply to.
- In terms of the prohibitions of Article 4 of the new Batteries Directive, the exemptions in the new Directive will limit costs, but may also reduce potential benefits. In practice, industry has increasingly been moving away, on a voluntary basis, from the use of cadmium and mercury in batteries and accumulators where this is technically feasible. It remains unclear the exact extent of the total volume of heavy metals used in batteries and accumulators currently, and this makes it difficult to estimate the additional burden of the prohibitions of the new Directive.
- Since Article 11 of the new Directive, concerning the removal of waste batteries and accumulators, is in part, at least, a requirement of the previous Directive, it is difficult to determine the extent to which there will be additional costs and benefits from this Article.

## **Costs**

### ***Regulation 4: Article 4 of the new Batteries Directive - Prohibitions***

1.38 Regulation 4 transposes Article 4 of the new Batteries Directive which introduces prohibitions on the placing on the market of new batteries and accumulators which contain levels of mercury and cadmium above certain thresholds. There are certain exemptions to this

prohibition depending on the battery or accumulator type, or application. In the case of mercury, this is for button cells, and in the case of cadmium, the use of portable batteries and accumulators in some applications.

1.39 Restrictions on the use of mercury in batteries and accumulators were introduced in the previous Batteries Directive. The use of mercury in batteries and accumulators has been declining for a number of years now as a consequence of the previous Directive, and as industry itself has sought to move away from using this metal where it is technically feasible to do so. The exemption for button cells is retained from the previous Batteries Directive for a range of reasons including the use of button cells in hearing aids and other medical equipment. The Bio Report (2003) itself said that *“Mercury containing batteries are no longer a significant concern..”*

140. One respondent to the partial IA questioned the extent to which mercury is no longer a significant concern in batteries and accumulators, and said *“..that some far eastern batteries have mercury levels of 155ppm of mercury..”*, and given that these are imported into the UK there is currently *“..an average mercury level..in the UK’s waste stream..10 times the current legal limit.”* The original Batteries Directive aimed to deal with the problem of mercury directly by restricting the use of mercury in batteries and accumulators. The UK, like all other member States, implemented the original Batteries Directive to prevent batteries and accumulators containing excessive levels of mercury being placed on its market. Recently BERR commissioned consultants to conduct testing of certain batteries imported from the Far East. First analysis of these tests suggests that mercury was not present in the examples under scrutiny.

1.41 In terms of cadmium, producers have also been voluntarily moving away from the use of cadmium in batteries and accumulators for a number of years now. This movement has been due to developments across industry, both in the UK and overseas, to use less hazardous substances in the production of a range of goods, including batteries and accumulators.

1.42 The exemptions in the new Batteries Directive for the use of portable batteries and accumulators containing cadmium are for specific applications. These are:

- Use in Medical equipment. Nickel Cadmium (NiCd) batteries and accumulators have historically been widely used in applications involving medical equipment. This has been the case because NiCds were seen as being a stable and reliable technology across a range of environments, most notably at extremes of temperature, and where relatively high amounts of power were required immediately and at short notice.
- Use in Emergency, emergency lighting and alarm systems. NiCd batteries and accumulators have historically been used in many applications involving emergency, emergency lighting and alarm systems. These include back-up systems for Air Traffic Control and back-up systems for rail safety. As for medical equipment, NiCds were seen as being a stable and reliable technology across a range of environments, at extremes of temperature, and where relatively high amounts of power were required immediately and at short notice.
- Use in cordless power tools (CPTs). Historically, NiCds have been the predominant battery chemistry used in cordless power tools (CPTs). This has been because of their reliability and simplicity. However, industry has developed Nickel Metal Hydride (NiMH) and Lithium-Ion (Li-ion) batteries as alternatives to NiCd batteries and accumulators in CPTs. NiMH and Li-ion powered CPTs have the advantages of lightness and smallness over NiCd powered CPTs, and recent developments have meant that Li-ion batteries can exceed the power and capacity of similar NiCd and NiMH technologies. However, Li-ion

powered CPTs generally incur a premium in terms of cost and currently are usually used by, and marketed at, the more professional-end of the CPT market.

1.43 The Bio Report (2003) estimated that the costs of a prohibition on the use of cadmium in portable batteries and accumulators in consumer applications, even excluding their use in CPTs, could be very large, with a cost to European consumers in the range of 825 to 1,995 million euro per annum. This was because the Bio Report estimated that the main alternative to NiCds technology at the time, Nickel Metal Hydride (NiMH) batteries and accumulators, were in the range of 10-30 per cent more expensive than NiCds, and that NiMH batteries and accumulators had a life expectancy (in terms of the number of cycles they could take during their lifetime) of between one-third and one-half of NiCds.

1.44 The European Council questioned the estimates in the Bio Report and produced a revised draft impact assessment on the prohibition of NiCd portable batteries and accumulators. This impact assessment questioned the relative performance of NiCd and NiMH technologies as outlined in the Bio Report, and said that the latest NiMH technologies had a capacity 1.5 to 4 times that of NiCds. This meant that despite the higher initial purchase price and fewer cycles, because NiMH batteries and accumulators could store more energy than NiCds the Council said that the cost estimates in the Bio Report “..*would not actually occur.*”

1.45 The Council Report itself was questioned in terms of how representative of the different technologies was the one example in its impact assessment, given that the comparison was between one NiMH accumulator and one NiCd accumulator for use in a specific application. It was also not clear from the Council Report what the relative cost was of the two accumulators being compared.

1.46 This uncertainty over the costs and benefits of a prohibition on the use of cadmium in portable batteries and accumulators, ultimately lead to the compromise text of the new Batteries Directive. The new Directive allows the use of cadmium in batteries and accumulators in CPTs to continue, but this is to be reviewed by the European Commission by 26 September 2010. The new Directive bans the use of cadmium in batteries and accumulators in non-CPT applications, such as in dustbusters, other small household equipment, and toys, from two years after it entered into force, i.e. from 26 September 2008.

1.47 To estimate the potential costs of a ban on the use of NiCd portable batteries and accumulators in domestic applications not including CPTs, a number of assumptions need to be made.

1.48 The Bio Report estimated that around 30 per cent of sales of NiCds in Europe were for use in household applications not involving CPTs. This amounted to an estimated 3,600 tonnes (for 1999), which if we assume the UK used one-sixth of these would be some 600 tonnes for the UK.

1.49 Most estimates suggest that the use of NiCd batteries and accumulators in a range of household appliances (excluding CPTs) has been falling. This has been driven by a switch to alternative technologies in equipment where lightness and smallness is important – such as phones, laptops, and other audio and visual equipment, and by developments in alternative technologies, most notably Nickel metal-hydride (Ni-MH) and more recently Lithium-ion (Li-ion). It is difficult to estimate the precise fall in the use of NiCds, but if we assume it is equal to the increase in the use of NiMHs this would imply an average fall of some 2 per cent per annum (based on estimates of the annual increase in the sale of NiMH batteries and accumulators). This fall may be an under-estimate given the rapid growth in recent years in Li-ion technology. However, in the following we assume that the Ni-Cd technology has been, and will continue to be, replaced largely by Ni-MH technology for the applications where the ban bites, given that Li-ion rechargeable batteries are currently still largely used in ‘higher-end’ and more ‘professional-type’ equipment, outside of mobile phones and laptops.

1.50 The Bio Report presented figures for Ni-Cd sales by application which implied the average weight of a NiCd portable cell used in household applications was almost 23 grammes. For tonnage estimates as calculated above (estimated to be in the region of just over 500 tonnes currently based on an annual fall of 2 per cent from 1999 levels), this would imply some 22-23 million NiCd portable cells sold in the UK last year (for household applications not including CPTs), which in the absence of the ban, and based on a continuing 2 per cent annual decline) would be estimated at just under 19 million cells in 2016.

1.51 The Bio Report quoted a figure of 4.2 euros per unit as the average cost of a NiCd cell in 2003. In today's prices this would imply a cost in the region of £3.10 per cell, assuming the cost of NiCd cells has risen in line with consumer prices generally.

1.52 In terms of the number of cycles and the capacity of NiCds compared to NiMH we assume that the estimated benefit for NiCds in terms of the additional number of cycles is offset by the potential additional capacity of NiMH batteries such that replacement over the lifetime of an appliance does not result in any additional cells being needed.

1.53 In terms of the differential in price between NiCds and NiMH, NiMH has fallen in price in comparison to NiCds as its use has become more widespread. We assume a differential of no more than 10 per cent in price on average, at the lower-end of the estimates in the Bio Report. In some instances, retailers are currently selling NiMH and NiCd batteries with a differential lower than 10 per cent, and more in the region of 5 per cent. In addition, this differential may fall further over time as NiMHs, and other technologies such as Li-ion, become more and more widespread.

1.54 All of the above enables an estimate to be made of the costs of Regulation 5 transposing Article 4 of the new Batteries Directive. This is for a cost estimated in the region of just under £7 million in 2009, and falling over time to just under £6 million by 2016, because we assume that the use of NiCds would have fallen over time in any case in the absence of the ban.

1.55 The above estimate is based on a number of assumptions. Implicit in this is that we assume that household equipment (excluding CPTs) does not need to be substantially modified to use an alternative to NiCd technology. However, we do know that NiCds are being used less and less in a range of household applications because of developments in other battery technologies independent of the new Batteries Directive. We also know that these technological developments have reduced the difference in performance between NiCds and other technologies. In addition, the cost of alternatives to NiCds has been falling over time, and the time-span offered by the new Directive before the use of NiCds in some household applications needs to cease, should have given industry time to adjust and help to reduce any costs of replacement.

1.56 But, there is still some uncertainty regarding the relative performance and cost of NiCds and alternative technologies in a range of household applications other than CPTs. To mitigate this somewhat, NiCds can still be used in a range of household applications other than CPTs, provided they are placed on the market prior to 26 September 2008. The average lifespan of a NiCd battery of some 5-7 years should also contribute to reducing any cost increases from the prohibitions of Article 4.

### ***Regulations 8–24: Article 6 of the new Batteries Directive – Placing on the market***

1.57 Regulations 8-24 propose an enforcement regime for the UK to transpose Article 6 of the new Batteries Directive which requires member States to ensure that batteries and accumulators which meet the requirements of the Directive are allowed to be placed on their market, whilst ensuring batteries that do not meet the requirements are removed from their market.

1.58 This monitoring and enforcement of the Internal Market aspects of the new Directive is expected to result in costs to the public sector, and potentially some costs to business in terms of the provision of information to the relevant enforcement body. It is difficult to estimate the costs of enforcing this Article of the Directive, but we can use estimates of enforcement regimes in other areas to obtain a range of costs that may be incurred following implementation of the Batteries Directive.

1.59 Costs for enforcing the Restriction on Hazardous Substances (RoHS) Regulations, which restrict the use of certain heavy metals in the production of new electrical and electronic equipment (EEE), are currently in the region of £350,000 per annum. These costs are expected to increase by possibly up to £100,000 per annum as the enforcement body, the National Weights and Measures Laboratory (NWML) increases its enforcement activities over the next few years. These costs are paid by BERR, which is the Department responsible for implementing the European RoHS Directive in the UK.

1.60 Costs for enforcing the heavy metals restrictions in the production of new vehicles under the End-of Life Vehicles (ELV) Regulations are currently in the region of £100,000 per annum. The enforcement body here is the Vehicle Certification Agency (VCA). These costs are paid by BERR, which is the Department responsible for implementing the European ELV Directive in the UK.

1.61 In terms of enforcing the Internal Market requirements of the new Batteries Directive it is not expected that the costs incurred for RoHS or ELVs will be replicated. This is because in the case of RoHS the enforcement is on a huge range of electrical and electronic equipment (EEE) which differs widely in terms of constitution, complexity and application, and in the case of vehicles, enforcement involves all components, for which there could be up to 10,000 in a single vehicle.

1.62 Batteries and accumulators, on the other hand, are relatively straightforward products, consisting of a main dominant chemistry, relatively few materials, and relatively few parts. Enforcement should thus be more straightforward than in the case of EEE or vehicles. An enforcement cost estimate in the region of 50 per cent that for the RoHS and ELV Regulations of between £50,000-£200,000 per annum may not be unreasonable. Three respondents to the partial IA said that enforcement costs would, or should, be greater than £200,000 per annum. BERR will consider the appropriate level of resources required to enforce the UK's Regulations in the light of these responses. However, it remains difficult at this stage to see why enforcement costs for batteries and accumulators should exceed those for more complex and diverse products such as vehicles and electrical and electronic equipment (EEE).

1.63 On top of these costs, will be costs to businesses from compiling and providing information to ensure that they can prove compliance with the Directive to the relevant enforcement body. Until the actual enforcement regime is determined it is difficult to estimate the potential costs to business, but a figure equivalent to that estimated to be incurred by the public sector may also not be unreasonable. However, these costs for business could be lower given that a number of requirements of the new Directive formed part of the previous Batteries Directive.

1.64 The above estimates imply costs from Regulations 9-23 transposing Article 6 of the new Batteries Directive in the region of £0.1 million - £0.4 million per annum. We retain this figure from the partial IA, because we compensate for possible lower costs to business with possible higher costs to the public sector.

### ***Regulations 5 and 6: Article 21 of the new Batteries Directive - Labelling***

1.65 Regulations 5 and 6 transpose Article 21 of the new Batteries Directive which introduces various marking and labelling requirements on batteries and accumulators.



1.66 Batteries and accumulators that contain certain amounts of mercury, cadmium, and lead need to be marked with the symbols, Hg, Cd, and Pb respectively. This marking requirement, for batteries and accumulators containing certain hazardous substances, was largely one that formed part of the previous Batteries Directive. This requirement is thus not expected to result in any significant additional costs.

1.67 Under the new Directive, all batteries, accumulators, and battery packs are to be marked with the crossed-out wheeled bin symbol. This symbol is to be shown on the side of the battery, unless the battery is small, where it can then be shown on the packaging.

1.68 It is difficult to estimate the costs of marking batteries and accumulators with the crossed-out wheeled bin because it is unclear how many batteries and accumulators will need to be marked individually, how many could be marked via their packaging, and how many are already marked.

1.69 The crossed-out wheeled bin symbol was a requirement of the previous Batteries Directive for batteries containing mercury, lead, and cadmium. Given that industrial and automotive batteries and accumulators largely consist of one or another of these chemistries, the requirement of the new Directive in this regard is not expected to result in any additional costs, as markings are already in place.

1.70 In terms of portable batteries and accumulators, the previous Directive requirements would have related to the 7 per cent of portable batteries and accumulators estimated to have contained hazardous substances at the time. A proportion of the remaining portable batteries and accumulators placed on the UK market have the crossed-out wheeled bin symbol on their packaging. To mark the batteries or accumulators themselves will result in additional costs.

1.71 Portable batteries and accumulators currently have a range of marks and labels and thus we do not expect the addition of an extra mark to entail significant extra costs per battery or accumulator. An estimate of the cost per battery or accumulator in the region of 10 per cent of 1 pence may not be an unreasonable estimate. This would imply total costs in the region of £1 million per annum for the estimated 1 billion portable batteries and accumulators currently sold in the UK. We assume these costs are also incurred in the period running up to introduction of the UK Regulations to transpose the new Batteries Directive as business adjusts to the new requirements.

1.72 Some of the costs of marking batteries and accumulators will be one-off costs in terms of design changes and adjustments to labelling runs. There will be some on-going costs in terms of the materials used for marking. It is difficult to estimate what proportion of costs will be one-off and what proportion on-going.

1.73 In as much as the specific requirements for batteries and accumulators to show their capacity are not to form part of the UK's Regulations to transpose the Internal Market provisions of the Batteries Directive, but will form part of amending Regulations once the capacity requirements have been agreed at European level in 2009, there will not be costs until the capacity requirements come into force. BERR will take an active part in European negotiations on capacity marking to ensure that any costs are proportionate to the benefits resulting from such marking.

#### ***Regulation 7: Article 11 of the new Batteries Directive – Removal of waste batteries and accumulators***

1.74 Article 11 of the new Batteries Directive requires manufacturers to design appliances such that waste batteries and accumulators can be removed easily. The previous Batteries Directive

contained this requirement for appliances using batteries and accumulators containing mercury, cadmium and lead

1.75 Equipment and appliances that use primary batteries are already designed such that the user can replace spent batteries with new batteries so as to enable continued use of such equipment and appliances. Thus the Article 11 requirement really only impacts on equipment and appliances using accumulators (rechargeable batteries). As some of these will be equipment and appliances using NiCd and Pb-acid accumulators the requirement is not new and so there will be no additional burden.

1.76 For equipment and appliances using other technologies, such as NiMH and Lithium-ion, the design requirements will also apply in the future, except where for safety, performance, medical or data integrity reasons a permanent connection between the appliance and the accumulator is required.

1.77 The European Commission has suggested that the requirements for battery or accumulator removal may be considered to apply to end-users or professionals. If the latter are interpreted as those who operate treatment facilities for waste electrical and electronic equipment (WEEE) then the implications for design costs will be different, and much lower, than if end-users are to remove batteries or accumulators.

1.78 The European Commission has also suggested that the instructions accompanying equipment and appliances should show who is best placed to remove batteries or accumulators. This should give manufacturers the flexibility they need to produce equipment and appliances such that batteries or accumulators can be removed in the most appropriate manner, and by the most appropriate person, depending on the type of equipment or appliance involved. This should also reduce any cost impacts.

## **Benefits**

### ***Regulation 4: Article 4 of the new Batteries Directive - Prohibitions***

1.79 The prohibitions on the placing on the market of batteries and accumulators which contain levels of mercury and cadmium above certain thresholds aim to reduce the risks to human health, animal health, and the environment from the use and disposal of mercury and cadmium.

1.80 In as much as the prohibitions, with their current exemptions, reduce the use of mercury and cadmium this will have a positive impact on human and animal health and on the environment. It is not straightforward to estimate the consequent benefits. However, we do expect there to be benefits because of the nature of these two metals.

1.81 Mercury is a volatile element, which may be transported over long distances by air. In terms of human exposure the main exposure pathways are via the inhalation of vapours and via ingestion in food. Mercury is toxic and possibly carcinogenic. In terms of animal health, mercury can have adverse impacts on the central nervous system and kidneys of birds and mammals, and negative impacts on the reproductive systems of fish.

1.82 Cadmium tends to bio-accumulate. The major route through which humans are exposed is via food (through agricultural crops where cadmium is in soil). The main risk to human health is kidney damage. In terms of animal health, cadmium can produce a wide variety of negative effects on birds and mammals, similar to those seen in humans.

1.83 The prohibition on the use of NiCds in household equipment (excluding CPTs) should result in a fall in the amount of cadmium being disposed of in the UK. For the estimated

tonnages of NiCd batteries that could have been used in the UK in the future (outlined in the Costs section) and given that cadmium forms around 14 per cent of a NiCd battery this fall is estimated to be in the region of 70 tonnes per annum in 2009. This reduction in the disposal of cadmium is estimated to fall to 60 tonnes by 2016 because we assume that the use of NiCd batteries would have fallen in any case in the absence of the ban. It is difficult to quantify the benefits from this reduction in cadmium, but cadmium is hazardous, and some research suggests that NiCd batteries account for almost one-fifth of all cadmium found in the municipal solid waste (MSW) stream.

#### ***Regulations 8-24: Article 6 of the new Batteries Directive – Placing on the market***

1.84 The ability for member States to withdraw new batteries and accumulators from their market that do not meet the requirements of the new Batteries Directive, and the requirement for member States not to impede or restrict new batteries and accumulators that meet the requirements of the new Directive, will have the benefit of protecting and promoting the European Internal Market in batteries and accumulators.

1.85 This should bring benefits in the form of greater competition in the market for batteries and accumulators as a result of a more level-playing field for all manufacturers and producers of batteries and accumulators. Both UK producers and consumers will benefit from this, in terms of potentially improved access to markets, and in terms of potentially higher quality, and safer types of batteries and accumulators. However, whilst UK businesses will benefit from greater protection and promotion of the Internal Market, these benefits, and any benefits to UK consumers, are very difficult to quantify.

#### ***Regulations 5 and 6: Article 21 of the new Batteries Directive - Labelling***

1.86 The appropriate marking and labelling of batteries and accumulators will aid the separate collection of portable batteries and accumulators at the end of their life, so enabling their future treatment and recycling. In terms of industrial and automotive batteries, appropriate marking will reinforce the prohibition on the disposal (via landfill or incineration) of these spent batteries as whole, as required by the new Directive.

1.87 It is difficult to quantify these benefits, but the marking and labelling of batteries and accumulators will play an important part in providing information to, and raising awareness amongst, end-users in relation to batteries and accumulators and spent batteries and accumulators. In particular, there should be environmental benefits in terms of spent batteries and accumulators being discarded in a more appropriate manner in the future. Marking and labelling is thus one of the pre-cursors to the successful treatment and recycling of spent batteries and accumulators.

#### ***Regulation 7: Article 11 of the new Batteries Directive – Removal of waste batteries and accumulators***

1.88 The requirements with respect to the removal of batteries and accumulators should have a positive impact on reducing the costs of treating and recycling WEEE in the future. However, it is difficult to quantify these benefits not least because it is unclear how many appliances containing batteries and accumulators will be separately collected in the future. However, where appliances are separately collected, Regulation 7 should have a positive impact on reducing the costs of treating and recycling spent batteries and accumulators in the future.

#### **Small Firms Impact Test**

1.89 The Internal Market provisions of the new Batteries Directive are intended to apply to all batteries and accumulators placed on the European market. Impacts on businesses are thus expected to be largely in proportion to the volume and type of batteries and accumulators they

place on the market. It is thus not expected that there will be any disproportionate impacts on small firms from UK implementation of the Internal Market provisions of the new Batteries Directive.

## **Competition Assessment**

1.90 UK implementation of the Internal Market provisions of the new Batteries Directive is not expected to have a detrimental impact on competition in the market for batteries and accumulators. Indeed, the main aim of the Regulations is to promote and enhance competition by establishing a more level-playing field for those who place batteries and accumulators on the European market.

## **Enforcement and Sanctions**

1.91 The Internal Market provisions of the new Batteries Directive will be enforced in the UK by BERR. Such enforcement may be contracted out to a third party. Sanctions are expected to be similar to those that exist in the UK's RoHS and ELV Regulations with regard to the Internal Market aspects of the Directives these Regulations implement in the UK.

## **Summary and Conclusions**

1.92 The UK is required to transpose into UK law the Internal Market provisions of the new Batteries Directive, so it plays its part in protecting and promoting the European Internal Market, by 26 September 2008. Given the legal basis of these provisions the UK has little discretion when implementing these provisions.

1.93 The European Commission's Extended Impact Assessment (EIA) for the new Batteries Directive acknowledged that it was very difficult to quantify the costs and benefits across Europe of the Internal Market provisions of the new Batteries Directive. This has also been the case for UK implementation, and this is also acknowledged in this final IA as it was in the partial IA.

1.94 Having said this, this final IA estimates total costs from the heavy metal restrictions, from marking and labelling batteries and accumulators, and from complying with the UK's enforcement regime, to be in the region of £7-£8 million per annum to 2017.

1.95 It is particularly difficult to quantify the benefits that will result from increased protection and promotion of the Internal Market, and greater protection of the environment, human health, and animal health as a consequence of the UK's Regulations. However, these benefits do exist. In terms of the environment and human and animal health they include: a reduction in hazardous substances entering the environment; a reduction in exposure to hazardous substances for humans and animals; and positive contributions to reducing any costs of treating and recycling spent batteries and accumulators in the future. In terms of the Internal Market they include: a more level playing field for businesses to operate in the Internal Market, including the removal of non-compliant batteries and accumulators; which should have positive impacts on competition and on trade. Table 1 below summarises the main estimates of this final IA.

**Table 1: Internal Market Provisions of new Batteries Directive: Summary of Estimates of Costs and Benefits (£ million)**

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Costs</b>										
Prohibitions	1.7	6.7	6.6	6.5	6.3	6.2	6.1	6.0	5.8	5.7
Placing on Market	0-0.1	0.1-0.4	0.1-0.4	0.1-0.4	0.1-0.4	0.1-0.4	0.1-0.4	0.1-0.4	0.1-0.4	0.1-0.4
Labelling	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.4
Removability	Not quantified. Not expected to be significant.									
<b>Total Costs</b>	2.9–3.0	8.0–8.3	7.9–8.2	7.8–8.1	7.7–8.0	7.6–7.9	7.5–7.8	7.4–7.7	7.3–7.6	7.2–7.5
<b>Present Value (PV) of Total Costs</b>	2.9–3.0	7.7–8.0	7.4–7.6	7.0–7.3	6.7–7.0	6.4–6.6	6.1–6.3	5.8–6.0	5.5–5.8	5.3–5.5
<b>Sum of PV of Total Costs (10 years)</b>	60.7–63.0									
<b>Benefits</b>	Not Quantified.									
Prohibitions	Positive contributions to protection of the environment. Positive contributions to human health and animal health.									
Placing on Market	Positive contributions to functioning of the Internal Market from improvement in free movement of goods. Positive competitions from enhanced competition.									
Labelling	Positive contributions to separate collection, and subsequent treatment and recycling of spent batteries. Positive contributions to raising awareness of waste and waste issues more generally.									
Removability	Positive contributions to reducing costs of treating and recycling of spent batteries. Positive contributions to reducing waste appliances as spent batteries can be more readily replaced in appliances.									

## Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

**Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.**

Type of testing undertaken	<i>Results in Evidence Base?</i>	<i>Results annexed?</i>
Competition Assessment	Yes	No
Small Firms Impact Test	Yes	No
Legal Aid	No	Yes
Sustainable Development	Yes	No
Carbon Assessment	Yes	No
Other Environment	Yes	No
Health Impact Assessment	Yes	No
Race Equality	No	Yes
Disability Equality	No	Yes
Gender Equality	No	Yes
Human Rights	No	Yes
Rural Proofing	No	Yes

## SPECIFIC IMPACT TESTS

### Legal Aid

It is not clear to what extent those who would be subject to the SI transposing the Internal Market provisions of the new Batteries Directive are eligible for legal aid, but given the nature of the SI there is not expected to be any significant impact on Legal Aid.

### Race Equality Assessment

The SI does not have race equality explicitly, or implicitly, as one its aims.

### Disability Equality

The SI does not have disability equality explicitly, or implicitly, as one of its aims.

### Gender Impact Assessment

The SI impacts on all those producing, selling and using batteries and accumulators. It is not aimed at overcoming gender inequalities or eliminating barriers to inequality explicitly, or implicitly.

### Human Rights

The SI is not expected to impact on the rights and freedoms of individuals as set out in the Human Rights Act 1998.

### Rural Proofing

The SI is not expected to have a significant impact on rural areas or circumstances specifically.

## TRANSPOSITION NOTE

### ***Directive 2006/66/EC of the European Parliament and Council on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC (“the Directive”)***

These Regulations partially implement the Directive by transposing Article 4, 6(2), 11 and 21(1), (3), (4), (5) and (6) of the Directive. These articles prohibit the placing on the market of batteries and accumulators containing more than permitted levels of mercury and cadmium, provide that new batteries and accumulators containing up to permitted levels of mercury, cadmium and lead must be labelled with the appropriate chemical symbol, require all batteries and accumulators to display a symbol encouraging separate collection, and introduce design requirements for certain appliances so that waste batteries and accumulators are easily removable. These Regulations also revoke the Batteries and Accumulators (Containing Dangerous Substances) Regulations 1994 (S.I. 1994/232) (and amending instruments S.I. 2000/3097 and 2001/2551); and the Batteries and Accumulators (Containing Dangerous Substances) Regulations (Northern Ireland) 1995 (S.R. 1995/122) (and amending instrument S.R. 2002/300) which transposed Directive 91/157/EEC on batteries and accumulators containing certain dangerous substances.

These Regulations do what is necessary to implement the above-mentioned Articles of the Directive, including making consequential changes to domestic legislation to ensure its coherence in the area to which they apply. Separate legislation will be brought forward to implement the remaining provisions of the Directive.

<b>Article of the Directive</b>	<b>Objectives</b>	<b>Implementation in the Regulations</b>	<b>Responsibility</b>
Article 4	Prohibitions relating to the use of mercury and cadmium in batteries and accumulators placed on the market from 26 September 2008.	Regulation 4	Department for Business, Enterprise and Regulatory Reform (BERR)
Article 5	Encouraging increased environmental performance of batteries and accumulators.	Not relevant to these Regulations; to be implemented through separate legislation.	BERR
Article 6	Requirement for non-compliant goods to be withdrawn from the market.	Regulations 13 and 14	BERR
Article 7 to 10	Sets out the overarching objective for collection of waste batteries, together with provisions relating to design of collection schemes, collection targets and possible use of economic instruments.	Not relevant to these Regulations; to be implemented through separate legislation.	BERR, in relation to industrial and automotive batteries and accumulators, and the Department for the Environment, Food and Rural Affairs (Defra), in relation to portable batteries.
Article 11	Removal of waste batteries and accumulators.	Regulation 7	BERR



Article 12	Provisions that set out certain minimum treatment requirements and recycling efficiency requirements.	Not relevant to these Regulations; to be implemented by separate legislation.	BERR, in relation to industrial and automotive batteries and accumulators, and the Department for the Environment, Food and Rural Affairs (Defra), in relation to portable batteries. In addition, certain amendments to existing treatment and recycling regimes may be made by separate legislation made on a devolved basis.
Article 13	Encouraging the development of new treatment technology.	Not relevant to these Regulations; to be implemented by separate legislation.	BERR
Article 14	Prohibiting the disposal in landfill or by incineration of waste industrial and automotive batteries.	Not relevant to these Regulations; to be implemented by separate legislation.	BERR. In addition, certain amendments to existing landfill and incineration regimes may be made by separate legislation made on a devolved basis.
Articles 15	This provision permits the treatment and recycling of waste batteries and accumulators outside of the Community market subject to meeting the treatment and recycling requirements of the Directive and other relevant Directives regarding the handling and movement of hazardous waste.	Not relevant to these Regulations; to be implemented by separate legislation.	BERR. In addition, certain amendments to existing treatment and recycling regimes may be made by separate legislation made on a devolved basis.
Article 16 to 18	Provisions setting out the responsibilities of all producers of batteries and accumulators to register with the relevant authority as a producer, and to finance the net cost of collection, treatment and recycling of waste batteries and accumulators..	Not relevant to these Regulations; to be transposed by a separate legislation.	BERR, in relation to industrial and automotive batteries and accumulators, and the Department for the Environment, Food and Rural Affairs (Defra), in relation to portable batteries.

Article 19	Ensuring that all economic operators may be involved in the collection, treatment and recycling of waste batteries and accumulators.	Not relevant to these Regulations; to be implemented by a separate legislation.	BERR, in relation to industrial and automotive batteries and accumulators, and the Department for the Environment, Food and Rural Affairs (Defra), in relation to portable batteries.
Article 20	This provision ensures that end-users are made aware of the overarching objectives of the aims of the Directive through information campaigns.	Not relevant to these Regulations; to be implemented by separate legislation.	BERR, in relation to industrial and automotive batteries and accumulators, and the Department for the Environment, Food and Rural Affairs (Defra), in relation to portable batteries.
Article 21 (1) and (3) to (6)	Labelling of batteries and accumulators with recycling and chemical symbols	Regulations 5 and 6 and Schedule 1.	BERR
Article 21(2)	Labelling of batteries and accumulators with their capacity.	Not relevant to these Regulations; to be implemented by separate legislation. Awaiting detailed rules of procedure to be laid down by the Commission in accordance with Article 24(2) of the Directive no later than 26 <sup>th</sup> March 2009.	BERR
Article 25	To place an obligation on Member States to determine penalties applicable to the breach of the national provisions that implements the requirements of the Directive.	Regulation 16 in relation to contraventions of Article 4, 11 and 21(2), (3), (4), (5) and (6).	BERR
Article 27	Subject to meeting the requirements of the Directive, voluntary agreements may be utilised for meeting the requirements of Articles 8, 15 and 20.	Not relevant to these Regulations; may be implemented by separate legislation.	BERR, in relation to industrial and automotive batteries and accumulators, and the department for the Environment, Food and Rural Affairs (Defra), in relation to portable batteries.
Annex I	Methodology for monitoring portable battery collection rates in compliance with the targets set in Article 10 of the Directive.	Not relevant to these Regulations; to be implemented by separate legislation.	The Department for the Environment, Food and Rural Affairs (Defra)

Annex II	Symbol for batteries, accumulators and battery packs to encourage separate collection.	Regulation 5 and Schedule 1	BERR
Annex III	Sets out the minimum requirements for the treatment and recycling of waste batteries and accumulators as required in Article 12 of the Directive.	Not relevant to these Regulations; to be implemented by separate legislation.	BERR, in relation to industrial and automotive batteries and accumulators, and the Department for the Environment, Food and Rural Affairs (Defra), in relation to portable batteries. In addition, certain amendments to existing treatment and recycling regimes may be made by separate legislation made on a devolved basis.

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