

EXPLANATORY MEMORANDUM TO
THE WASTE BATTERIES AND ACCUMULATORS REGULATIONS 2009

2009 No. 890

1. This explanatory memorandum has been prepared by the Department for Business, Enterprise and Regulatory Reform in conjunction with the Department for Environment, Food and Rural Affairs and is laid before Parliament by Command of Her Majesty.

2. **Purpose of the instrument**

These Regulations partially implement Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators and repealing Council Directive 91/157/EEC on batteries and accumulators containing certain dangerous substances (“the Directive”). These Regulations establish the scope of ‘producer responsibility’, requiring producers of batteries and accumulators to take responsibility for separately collecting and recycling batteries and accumulators once they become waste.

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

None.

4. **Legislative Context**

4.1 The Directive aims at minimising the negative impacts of batteries and accumulators on the environment and also harmonising requirements for the smooth functioning of the internal market. The Directive establishes: (i) rules regarding the placing on the market of batteries and accumulators and (ii) specific rules for the collection, treatment, recycling and disposal of waste batteries to promote a high level of collection.

4.2 The provisions of the Directive which relate to the placing of batteries on the market were (with one exception noted in paragraph 4.4 below) implemented by the Batteries and Accumulators (Placing on the Market) Regulations (S.I. 2008/2164). These Regulations implement the provisions of the Directive concerning waste batteries and accumulators.

4.3 Certain of the waste provisions of the Directive are also being transposed in whole or in part by separate legislation on a devolved basis. The Waste Batteries and Accumulators (Charges) Regulations (Northern Ireland) 2009 (S.R. 2009/157) make provision in Northern Ireland for appropriate authorities to charge battery compliance schemes, small producers, treatment facilities and exporters of waste batteries. In addition, it is intended that Regulations will be made shortly making provision implementing Articles 8(1), 12(2) and 14 in Northern Ireland and Scotland.

4.4 Separate legislation will be brought forward to implement Article 21(2) of the Directive following adoption of the Commission Decision referred to in the Article.

4.5 Article 17 of the Directive requires registration of producers to be subject to harmonised procedural requirements. The Commission Decision specifying these requirements is expected to be adopted shortly. The registration requirements in these Regulations reflect the latest draft of the Decision.

4.6 In transposing the Directive it was decided to take advantage of the exemption for small producers permitted by Article 18. A proposed exemption was notified to the European Commission on 8 September 2008 and six months have elapsed without an express decision from the Commission. The proposal is therefore deemed to have been approved under Article 18(3).

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

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

4.9 Explanatory Memorandum on Council Document 15494/03 "Proposal for a Directive of the European Parliament and Council on batteries, accumulators and spent batteries and accumulators" was submitted by the Department of Trade and Industry 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 and cleared it. The House of Lords Select Committee on the EU referred it to Sub-Committee D and cleared it at their meeting on 28/4/04 (Progress of Scrutiny 7/5/04, Session 03/04).

4.10 Explanatory Memorandum on Council Document: 7292/07 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" was submitted by the Department of Trade and Industry on 11 April 2007. The Commons European Scrutiny Committee 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).

4.11 Explanatory Memorandum on Council Document: 8576/08 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" was submitted by the Department for Business, Enterprise and Regulatory Reform on 12 May 2008. The Commons European Scrutiny Committee cleared it (Report 23, Session 07/08). The Lords Select Committee on the EU referred it to Sub-Committee B and cleared it by letter to the minister on 15 July 2008 (Progress of Scrutiny, 22/7/08, Session 07-08).

5. Territorial Extent and Application

5.1 With the exception of regulation 56 which does not extend to Scotland, this instrument applies to all of the United Kingdom.

6. European Convention on Human Rights

The Minister for Trade and Investment has made the following statement regarding human rights.

In my view the provisions of the Waste Batteries and Accumulators Regulations 2009 are compatible with the Convention rights.

7. Policy background

7.1 Batteries are divided into three categories by the Directive: portable, industrial and automotive. The Directive deals with both non rechargeable batteries and accumulators (rechargeable). Both are referred to in this memorandum and in the Regulations as batteries.

7.2 The Directive aims to ensure that the cost of separately collecting, treating and recycling waste batteries is borne by battery producers, and that collection and recycling rates are improved. In the UK approximately 30,000 tonnes of portable batteries are placed on the market annually, of which approximately 3% are sent for recycling. The Directive aims to increase the level of waste portable battery recycling by requiring Member States to collect at least 25% of waste portable batteries by 2012 for recycling, increasing to 45% by 2016. In contrast, the UK currently achieves a recycling rate of 90-95% of the approximately 200,000 tonnes of industrial and automotive batteries that are placed on the market annually. Waste portable batteries are not normally classified as hazardous waste (unless mixed), but industrial and automotive batteries are. Consequently, the Directive establishes a ban on the disposal of waste industrial and automotive batteries by landfill or incineration. In effect, creating a 100% separate collection and recycling target for these types of waste batteries

7.3 The Regulations introduce the system of producer responsibility for the separate collection, treatment and recycling of waste industrial and waste automotive batteries in the UK. The Regulations underpin and build upon current activity in order to achieve compliance with the Directive's prohibition on the disposal of these types of untreated waste batteries. Producers of industrial and automotive batteries will be required to arrange (where necessary) for the separate collection, treatment and recycling of waste industrial batteries from end-users, and waste automotive batteries from 'final holders' respectively. In both cases, producers must ensure that waste batteries for which they have taken responsibility are treated and recycled by an approved facility or sent for treatment or recycling by an approved exporter.

7.4 The Regulations also sets up a system of producer responsibility for the separate collection, treatment and recycling of waste portable batteries. Most producers of portable batteries will finance collection and recycling of waste portable batteries by joining a Battery Compliance Scheme (BCS). The BCS will take on responsibility for meeting the Directive's targets on behalf of its members. Distributors of portable batteries are required to collect waste portable batteries in-store and have a right to call on BCSs to ensure pick up of those batteries. BCSs will also carry out publicity aimed at end-users on how they can return waste portable

batteries for recycling. BCSs will also be required to accept waste batteries for recycling from competent public authorities and economic operators. Small producers and distributors have exemptions from some or all of the regulations requirements. Finally, the instrument provides that the treatment and recycling of waste batteries meet standards set out in the Directive.

7.5 A wide range of stakeholders have expressed an interest in the development of this policy. Media interest has focused predominantly on the development of portable battery policy because these are the batteries most familiar to the public, and because of the challenging collection targets set by the Directive.

8. Consultation outcome

8.1 BERR, Defra and the Devolved Administrations have been in regular contact with the main stakeholders on an informal and formal basis both during negotiation of the Directive and since its adoption.

8.2 In conjunction with Defra (who have responsibility for implementing the portable batteries provisions of the Directive), and the Devolved Administrations, BERR initiated a three month public consultation on options for implementing the Directive (URN 07/1701) between December 2007 and March 2008. The consultation attracted 113 responses from a wide range of interested parties. Producers favoured adopting a multiple-scheme based approach to enable them to meet the obligations of the Directive. Respondents with an interest in industrial and automotive batteries favoured an approach that complemented the established highly successful commercial activity in this area.

8.3 BERR, Defra, the Devolved Administrations and the Environment Agencies of the UK initiated a further, eight-week public consultation (URN 08/1488) between December 2008 and February 2009 which included draft Regulations transposing the remaining provisions of the Directive. About three quarters of the 128 responses raised issues relating to portable batteries. The principal points raised have been addressed by changing the thresholds for small producers and small distributors, adopting a one-stage approval process, reducing charges on schemes and removing barriers to BCSs trading evidence of collection, treatment and recycling among themselves in 2010 and 2011.

8.4 Responses to the proposals for implementing the waste industrial and automotive provisions were generally very favourable. There were concerns raised that producers of industrial batteries may be asked to take back more waste batteries than their market share. BERR believes this residual risk is minor and is a consequence of the 'light-touch' approach it has taken to ensure that producers bridge the gap to meet the Directive's 100% recycling target. Certain stakeholders also raised concerns about the practicalities of data reporting requirements – sales data and tonnages of waste batteries recycled. The collection of basic information is unavoidable. BERR will be required to report this information to the European Commission. It is important that the information is available to assess whether the 'light-touch' approach is an adequate means of meeting the Directive's objectives. There were no significant concerns on the proposals for waste automotive batteries.

8.5 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.

8.6 The Government published a formal response to the first two public consultations. A formal response to the most recent public consultation will be published alongside the laying these Regulations.

9. Guidance

9.1 BERR is publishing Guidance alongside the Regulations. Copies can be obtained at:

<http://www.berr.gov.uk/whatwedo/sectors/sustainability/batteries/page30610.html>

9.2 The European Commission has also produced a '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>.

10. Impact

10.1 The impact on business, charities or voluntary bodies is estimated to be in the region of £10 million to £17 million per annum to cover the obligations under these Regulations. All of the benefits from the Regulations cannot be valued at this stage, but those that can are expected to be in the region of £2 million to £3 million per annum.

10.2 The impact on the public sector is estimated to be in the region of £0.7 million per annum to cover the costs of enforcing these Regulations.

10.3 An Impact Assessment is attached to this memorandum at Annex 2.

11. Regulating small business

11.1 The legislation applies to small business.

11.2 To minimise the impact of the requirements on firms employing up to 20 people, the approach taken is to take advantage of a provision in the Directive which allows us to exempt small producers of portable batteries provided such producers have a very small share of the UK market.

11.3 The basis for the final decision on what action to take to assist small business is to exempt producers that place less than 1 tonne per year of portable batteries on the UK market. Although the exemption will mostly benefit small companies it will also apply to large companies for whom batteries are a very small share of their output. In addition, the Government believes that there is a case on environmental grounds to exclude small distributors that sell less than 32kg (i.e. about 1400 AA batteries) per year from the in-store take back requirements.

12. Monitoring & review

12.1 BERR will be responsible for monitoring the implementation of the waste industrial and automotive provisions of the Regulations. Defra will be responsible for monitoring implementation of the waste portable provisions of the Regulations.

12.2 In particular, the collection rates of waste batteries will be closely monitored. There will be an internal review of policy at the end of 2010 (following completion of the first compliance period), and the legislation may be amended accordingly. Defra recognises that better data will enable early review of the exemptions for small producers and distributors.

13. Contact

Marc Jay and Peter Cottrell at the Department for Business, Enterprise and Regulatory Reform Tel: 020 7215 6539 and 020 7215 1330 or email: marc.jay@berr.gsi.gov.uk and peter.cottrell@berr.gsi.gov.uk can answer any queries regarding the instrument in relation to waste industrial and automotive batteries.

Alessandra Scoleri at the Department for Environment, Food and Rural Affairs Tel: 020 7238 3322 or email: alessandra.scoleri@defra.gsi.gov.uk can answer any queries regarding the instrument in relation to waste portable batteries.

Summary: Intervention & Options

Department /Agency:
BERR

Title:
Impact Assessment of The Waste Batteries and Accumulators Regulations 2009

Stage: Final

Version: One

Date: 6 April 2009

Related Publications: Consultation Document URN:08/1488 on Implementation of Batteries Directive - Waste Battery Provisions (BERR, Defra, Scottish Gov, Welsh Assembly Gov, DOENI)

Available to view or download at:

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

Contact for enquiries: Trevor Reid

Telephone: 0207 215 5843

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

The current levels of disposal of waste portable, industrial and automotive batteries and accumulators can result in negative externalities in terms of CO2 impacts, adverse effects on human health and animal health, environmental detriment, and unsustainable use of natural resources. Government intervention is necessary to internalise these externalities such that the full social costs from discarding waste batteries are taken into consideration in the future.

What are the policy objectives and the intended effects?

The policy objectives are to achieve and maintain increased levels of separate collection and recycling of waste portable, industrial and automotive batteries and accumulators. In terms of waste portable batteries the intended effects are that users of portable batteries have accessible places to discard waste portable batteries and following this, that producers finance the recycling of these batteries. In terms of waste industrial and automotive batteries the intended effect is to ensure that all such batteries enter a recycling process, and that producers finance net costs from this.

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

For waste portable batteries two main options were considered. The first was that producers would join a single compliance scheme. The second allowed multiple compliance schemes. The second option is preferred because competition between schemes should lead to a more efficient and cost-effective UK system. For waste industrial and automotive batteries two main options were considered. The first was allowing current practices to operate but introducing a producer 'safety net'. The second was a much fuller producer responsibility regime. The first option is preferred on cost grounds.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects? The policy will be reviewed in at Uk level in 2011.

Ministerial Sign-off For final proposal/implementation 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:

Mervyn Davies

..... Date: 7th April 2009

Summary: Analysis & Evidence

Policy Option: Op 2 Portables, Op 1 Ind /Auto

Description: Multiple compliance scheme approach for waste portable batteries, Producer 'Safety Net' for waste industrial and automotive batteries

COSTS	ANNUAL COSTS		Description and scale of key monetised costs by 'main affected groups' Producers of batteries: Collection, treatment and recycling of waste portable, industrial, and automotive batteries; Consumer publicity; Registration, information and data reporting. Distributors of batteries: Collection of waste portable batteries from consumers.	
	One-off (Transition)	Yrs		
	£ 1.4m-5.7m	1		
	Average Annual Cost (excluding one-off)			
	£ 10.2m-17.2m		Total Cost (PV)	£ 78.9m-132.9m
Other key non-monetised costs by 'main affected groups' None expected.				

BENEFITS	ANNUAL BENEFITS		Description and scale of key monetised benefits by 'main affected groups' Human health: Benefits from avoided disposal of waste portable, industrial and automotive batteries. Climate change: Benefits from reductions in CO2 emissions as result of greater recycling. Resource savings: From reduction in landfill/incineration.	
	One-off	Yrs		
	£ 0			
	Average Annual Benefit (excluding one-off)			
	£ 2.1m-2.8m		Total Benefit (PV)	£ 16.6m-22.6mn
Other key non-monetised benefits by 'main affected groups' Positive contribution to sustainable development and more sustainable use of natural resources. Positive contribution to maintenance of eco-systems and bio-diversity. Positive contribution to raising awareness of waste.				

Key Assumptions/Sensitivities/Risks Key Assumptions in relation to future battery sales, waste arisings, and the costs of collecting and recycling waste batteries. It is possible that benefits from economies of scale and 'learning by doing' could lead to average costs falling over time but there is always a risk that these benefits may not be realised fully.

Price Base Year 2009	Time Period Years 11	Net Benefit Range (NPV) £ -62.3m-(-)110.3m	NET BENEFIT (NPV Best estimate) £ -86.3mn
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What is the geographic coverage of the policy/option?	UK
On what date will the policy be implemented?	1 January 2010
Which organisation(s) will enforce the policy?	env.agencies/BER
What is the total annual cost of enforcement for these	£ 0.7 million pa
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?	£ 0

What is the value of changes in greenhouse gas emissions?		£ 1.2-1.5 m (2019)		
Will the proposal have a significant impact on competition?		No		
Annual cost (£-£) per organisation (excluding one-off)	Micro	Small	Medium	Large
Are any of these organisations exempt?	Yes	Yes	N/A	N/A
Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)		
Increase	£ 1.5-2.9 m	Decrease	£ 0 m	Net £ 1.5-2.9 m

Key:

Annual costs and benefits: Constant Prices

(Net) Present Value

[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.]

Summary of Impact Assessment (IA)

1. The European Parliament and Council *Directive on batteries and accumulators and waste batteries and accumulators (Directive 2006/66/EC)* deals with all batteries and accumulators put on the European market, and all waste batteries and accumulators arising within Europe. It has a dual legal basis. Its provisions in relation to batteries and accumulators placed on the market are aimed at protecting and promoting the European 'Internal Market' (and are thus based on Article 95 of the Treaty establishing the Community). Its waste provisions are aimed at environmental protection (and are thus based on Article 175 of the Treaty establishing the Community).
2. The 'Internal Market' provisions of the Directive concerning new batteries and accumulators placed on the market by UK producers were transposed into UK law by BERR through the *Batteries and Accumulators (Placing on the Market) Regulations (Statutory Instrument No.2008/2164)*. These Regulations were supported by a final Impact Assessment (IA) when laid in Parliament on 15 August 2008.
3. This final Impact Assessment (IA) presents estimates of the potential costs and benefits to the UK of the Waste Batteries and Accumulators Regulations 2009, which implement the waste batteries provisions of Directive 2006/66/EC to complete transposition of the Directive.
4. This final IA is in three sections. The first section is this summary. The second section is a self-contained IA which presents estimates of the potential costs and benefits of the UK separately collecting and recycling waste portable batteries and accumulators to the targets of the Directive. The third section is a self-contained IA which presents estimates of the potential costs and benefits of the UK achieving the ban on disposal of whole and untreated waste industrial and automotive batteries and accumulators as required by the Directive.
5. Implementation of the waste provisions of the Batteries Directive presents specific challenges with respect to waste portable batteries and accumulators and waste industrial and automotive batteries and accumulators. The current situation in the UK for waste portables compared to waste industrial and automotives is very different. The UK, currently and historically, has undertaken very limited separate collection and recycling of waste portable batteries. The situation for waste industrial and automotive batteries is opposite to this where historically the UK, like most other countries, has recycled these batteries and accumulators to high levels due to the content and value of the metals they contain

Section Two of IA: Waste Portable Batteries and Accumulators IA

6. The Department for Food, Environment and Rural Affairs (DEFRA) has the policy lead on waste portable batteries and accumulators in the UK. DEFRA have thus produced a final IA for implementation of the waste portable battery provisions of the Batteries Directive.

7. This IA provides estimates of the potential costs and benefits to the UK of achieving the targets of the Directive with respect to waste portable batteries and accumulators (these targets are (broadly) for collection and recycling of 25 per cent of sales by the end of 2012, rising to 45 per cent of sales by the end of 2016) for two main policy options – Option 1, a single compliance scheme approach, and Option 2, a multiple compliance schemes approach. The preferred policy approach, Option 2, is justified on the grounds that it will achieve the targets of the Directive at lower cost than Option 1.

Section Three of IA: Waste Industrial and Automotive Batteries and Accumulators IA

8. BERR leads on policy in relation to waste industrial and automotive batteries and accumulators, and BERR has thus produced a final IA for implementation of these provisions of the Batteries Directive.

9. This IA provides estimates of the potential costs and benefits to the UK of achieving the Directive requirement of a complete ban on the disposal of whole and untreated waste industrial and automotive batteries and accumulators, for two main policy options – Option 1, a producer 'safety net' approach, and Option 2, more 'full-scale' producer responsibility. Option 1 is justified on the grounds that it will achieve the ban required by the Directive at lower cost than Option 2.

Conclusion

10. This summary consolidates the main objectives and intended effects, and estimates of the costs and benefits of implementing the waste provisions of the Batteries Directive contained in the separate IAs on waste portable batteries and accumulators and waste industrial and automotive batteries and accumulators.

11. The summary sheets above provide consolidated figures for estimates of the potential costs and benefits of the preferred policy options of the Government and the Devolved Administrations and reflected in the single Statutory Instrument (SI) which implements the waste provisions of the Batteries Directive.

12. It is difficult to estimate precisely the costs and benefits to the UK of implementing the waste provisions of the Batteries Directive. There is uncertainty about how many batteries and accumulators are placed on the UK market and how many arise as waste in any particular year.

There is also uncertainty surrounding the costs of separately collecting, treating, and recycling waste batteries arising in the UK now and in the future. This is particularly so for waste portable batteries where the UK has no experience of doing this to the level of volumes required by the Directive. UK policy is to be reviewed in 2011, and part of this review will be to obtain improved estimates of costs and benefits to inform future policy development.

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

Annexes

1. The results of the Specific Impact Tests are contained in each of the self-contained IAs on waste portable batteries and accumulators and on waste industrial and automotive batteries and accumulators.

Summary: Intervention & Options

Department /Agency: BERR	Title: Impact Assessment of regulations for waste Industrial and Automotive Batteries and Accumulators	
Stage: Final	Version: One	Date: 6 April 2009
Related Publications: Consultation Document URN:08/1488 on Implementation of Batteries Directive - Waste Battery Provisions (BERR, Defra, Scottish Gov, Welsh Assembly Gov, DOENI)		

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 landfilling of waste industrial and automotive batteries and accumulators can result in negative externalities in terms of CO2 impacts and adverse effects on human health and animal health. Intervention is necessary to internalise these externalities, such that the full social and environmental costs from discarding waste industrial and automotive batteries and accumulators are taken into consideration in the future.

What are the policy objectives and the intended effects?

The policy objectives are to ban the disposal of whole and untreated waste industrial and automotive batteries and accumulators, and to ensure that all such waste batteries and accumulators are treated and recycled to specific efficiency targets in the future. These are recycling of 65% by weight of lead-acid batteries, 75% by weight of nickel-cadmium batteries, and 50% by weight of 'other' batteries.

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

Two main policy options have been considered. Option 1 is a continuation of current practices with a producer responsibility 'safety net'. Option 2 is a much fuller producer responsibility system. Option 1 is the Government's preferred option given that it is expected to achieve the aims of the Batteries Directive at lower cost than Option 2. Option 1 was supported (in broad terms at least) by the majority of consultees who responded to the December 2008 public consultation on implementing the Batteries Directive in the UK.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects? The policy is planned to be reviewed at UK level in 2011.

Ministerial Sign-off For final proposal/implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) the benefits justify the costs.

Signed by the responsible Minister:

Mervyn Davies

.....Date: 7 April 2009

Summary: Analysis & Evidence

Policy Option: 1	Description: Current Practices with Producer Responsibility 'Safety Net'
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COSTS	ANNUAL COSTS	Description and scale of key monetised costs by 'main affected groups' Costs of separate collection, treatment and recycling of the proportion of waste industrial and automotive batteries and accumulators currently landfilled whole; Information, registration and reporting costs.
	One-off (Transition) Yrs	
	£ 0	
	Average Annual Cost (excluding one-off)	
	£ 0.8-2.5 million	Total Cost (PV) £ 7-21 million
Other key non-monetised costs by 'main affected groups' None expected.		

BENEFITS	ANNUAL BENEFITS	Description and scale of key monetised benefits by 'main affected groups' Benefits from CO2 savings (at Shadow Price of Carbon); Health Benefits; Resource savings from Landfill Avoided.
	One-off Yrs	
	£ 0	
	Average Annual Benefit (excluding one-off)	
	£ 0.7-1.4 million	Total Benefit (PV) £ 6-12 million
Other key non-monetised benefits by 'main affected groups' Positive contribution to sustainable development and more sustainable use of natural resources; Positive contribution to protection of eco-system and to bio-diversity.		

Key Assumptions/Sensitivities/Risks Estimates of waste arisings; Estimates of costs of collection, treatment and recycling.

Price Base Year 2009	Time Period Years 11	Net Benefit Range (NPV) £ -1-(-)9 million	NET BENEFIT (NPV Best estimate) £ -5 million
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What is the geographic coverage of the policy/option?	UK				
On what date will the policy be implemented?	1 January 2010				
Which organisation(s) will enforce the policy?	BERR				
What is the total annual cost of enforcement for these organisations?	£ 60,000				
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?	£ 0				
What is the value of changes in greenhouse gas emissions?	£ 16-43k by 2019				
Will the proposal have a significant impact on competition?	No				
Annual cost (£-£) per organisation (excluding one-off)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Micro N/A</td> <td style="width: 25%; text-align: center;">Small N/A</td> <td style="width: 25%; text-align: center;">Medium N/A</td> <td style="width: 25%; text-align: center;">Large N/A</td> </tr> </table>	Micro N/A	Small N/A	Medium N/A	Large N/A
Micro N/A	Small N/A	Medium N/A	Large N/A		
Are any of these organisations exempt?	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">No</td> <td style="width: 25%; text-align: center;">No</td> <td style="width: 25%; text-align: center;">N/A</td> <td style="width: 25%; text-align: center;">N/A</td> </tr> </table>	No	No	N/A	N/A
No	No	N/A	N/A		

Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)
Increase of £ 0.2 mn	Decrease of £	Net Impact £ 0.2 mn

Key: Annual costs and benefits: Constant Prices

Summary: Analysis & Evidence

Policy Option: 2

Description: Full -scale Producer Responsibility

COSTS	ANNUAL COSTS		Description and scale of key monetised costs by 'main affected groups' Costs of separate collection, treatment and recycling of the proportion of waste industrial and automotive batteries and accumulators currently landfilled whole; Information, registration and reporting costs.
	One-off (Transition)	Yrs	
	£		
	Average Annual Cost (excluding one-off)		
	£ 2-3.7 million		Total Cost (PV) £ 17-31 million
Other key non-monetised costs by 'main affected groups'			

BENEFITS	ANNUAL BENEFITS		Description and scale of key monetised benefits by 'main affected groups' Benefits from CO2 savings (at Shadow Price of Carbon); Health Benefits; Resource savings from Landfill Avoided.
	One-off	Yrs	
	£		
	Average Annual Benefit (excluding one-off)		
	£ 0.7-1.4 million		Total Benefit (PV) £ 6-12 million
Other key non-monetised benefits by 'main affected groups' Positive contribution to sustainable development and more sustainable use of natural resources; Positive contribution to protection of eco-system and to bio-diversity.			

Key Assumptions/Sensitivities/Risks Estimates of waste arisings; Estimates of costs of collection, treatment and recycling.

Price Base Year 2009	Time Period Years 11	Net Benefit Range (NPV) £ -11-(-)19 million	NET BENEFIT (NPV Best estimate) £ -15 million
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What is the geographic coverage of the policy/option?			UK	
On what date will the policy be implemented?			1 January 2010	
Which organisation(s) will enforce the policy?			BERR	
What is the total annual cost of enforcement for these organisations?			£ 60,000	
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?			£ 0	
What is the value of changes in greenhouse gas emissions?			£ 16-43k by 2019	
Will the proposal have a significant impact on competition?			No	
Annual cost (£-£) per organisation (excluding one-off)	Micro	Small	Medium	Large
Are any of these organisations exempt?	No	No	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices)			(Increase - Decrease)	
Increase of	£ 0.9 mn	Decrease of	£	Net Impact £ 0.9 mn

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

[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.]

Implementation of the Waste Industrial and Automotive Batteries and Accumulators Provisions of the European Batteries Directive (Directive 2006/66/EC) in the UK

Introduction

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

2. The Internal Market provisions of the new Batteries Directive in relation to new portable, industrial, and automotive batteries placed on the UK market were transposed into UK law by BERR through the Batteries and Accumulators (Placing on the Market) Regulations (Statutory Instrument No.2008/2164). These Regulations were supported by a final Impact Assessment (IA) when laid in Parliament on 15 August 2008.

3. The environmental provisions of the new Batteries Directive with respect to waste industrial and waste automotive batteries and accumulators arising in the UK are the subject of this final IA. Whilst waste industrial and automotive batteries and accumulators are dealt with together in the same Directive, there are different provisions relating to the different battery and accumulator types. The markets for industrial and automotive batteries and accumulators are also different, as are their life-cycles and in some case chemistries. This adds to the complexity of implementation.

Background

4. 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 or accumulators.

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 and provide greater protection and promotion of the European Internal Market.

6. As importantly, and in accordance with the European Community's 6th 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 in relation to waste batteries and accumulators.

7. 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 Equipment (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.

8. BERR, DEFRA, the Department for the Environment Northern Ireland, the Scottish Government, and the Welsh Assembly Government, consulted on draft Regulations to transpose the provisions of the new Batteries Directive with respect to waste industrial and automotive batteries between 22 December 2008 and 13 February 2009. This consultation presented two main alternative options for implementation. Option 1 can be considered as a business-as-usual option coupled with a 'producer safety-net' mechanism. Option 2 was more of a 'full-scale 'producer responsibility' system. The consultation document asked for responses on four specific questions in relation to industrial batteries, and three questions in relation to automotive batteries.

9. There were 128 responses to this consultation exercise. Of a total of 63 responses to the question of implementing Option 1 or not for industrial batteries, 34 supported (at least in broad terms) Option 1 and 11 expressed some level of disagreement. Of a total of 60 responses to the question of implementing Option 1 or not for automotive batteries, 43 supported (at least in broad terms) Option 1 and none expressed significant disagreement.

10. 38 respondents answered the specific question on the partial IAs presented in the consultation document to support the draft Regulations. 19 responses generally agreed with the partial IAs and 19 disagreed. Most of these responses concerned the partial IA for waste portable batteries as opposed to the partial IA for waste industrial and automotive batteries. Following the consultation BERR has held a formal stakeholder workshop on waste industrial and automotive batteries, and has held a series of formal and informal meetings with parties who will be affected by implementation.

Purpose and Intended Effect of Measure

11. The new Batteries Directive has two main aims, and thus has a dual legal basis in European law. It is an 'Internal Market Directive' (as some provisions are based on Article 95 of the Treaty establishing the Community) with the aim of protecting and promoting the European Internal Market in batteries and accumulators. It is also an 'Environmental Directive' (as the remaining provisions are based on Article 175 of the Treaty) with the aim being to *"..prevent waste batteries and accumulators from being discarded in such a way as to pollute the environment, and to avoid end-user confusion about the different waste management requirements for different batteries and accumulators.."* (Recital 6 of the new Directive). This second aim is the subject of this final IA with respect to waste industrial and automotive batteries and accumulators.

12. The new Batteries Directive defines an industrial battery or accumulator “..as one designed for exclusively industrial or professional uses or used in any type of electric vehicle..” (Article 3 of the Directive).

13. Recital 9 of the new Batteries Directive gives examples of the types of batteries and accumulators the Directive considers to be industrial and provides the following non-exhaustive list of industrial battery and accumulator uses:

- Emergency or back-up power supply in hospitals, airports, or offices;
- Trains or aircraft;
- Off-shore oil rigs or in lighthouses;
- Hand-held payment terminals in shops and restaurants, and bar code readers in shops;
- Professional video equipment for TV channels and professional studios;
- Miners’ lamps and diving lamps attached to helmets;
- Electric doors;
- Instrumentation and measurement equipment;
- Solar panel, photo-voltaic, and other renewable energy applications;
- Electric vehicles;

14. The new Batteries Directive also defines an automotive battery or accumulator as “..any battery or accumulator used for automotive starter, lighting or ignition power.” (Article 3 of the Directive).

15. Automotive batteries used in standard vehicles are generally lead-acid batteries. Batteries used in electric vehicles have generally been Nickel-Cadmium, but there has been some growth in Nickel Metal Hydride technology in recent years. However, batteries used in electric vehicles are defined as industrial batteries under the new Batteries Directive.

16. The new Batteries Directive introduces the following main provisions in relation to spent industrial and automotive batteries (we use the term ‘batteries’ to cover both primary batteries(‘batteries’) and rechargeable batteries (‘accumulators’) from here onwards:

- Article 8.3 of the new Directive requires producers of industrial batteries, or third parties acting on their behalf, to accept spent industrial batteries from end-users regardless of chemical composition or origin. Independent third parties may also collect industrial batteries.
- Article 8.4 of the Directive requires producers of automotive batteries, or third parties, to set up schemes for the collection of waste automotive batteries from end-users, or from an accessible collection point in their vicinity, where collection does not take place under the End of Life Vehicles Directive. Article 8.4 also says that end-users of spent automotive batteries from private, non-commercial vehicles should not incur any charge when discarding a spent automotive battery nor have an obligation to buy a new automotive battery.
- Article 14 of the new Directive requires member States to prohibit the disposal (via landfill or incineration) of spent industrial and automotive batteries which have not been treated and recycled. Residues following treatment and recycling (under Article 12 of the Directive) can be landfilled or incinerated
- Article 12 requires that, no later than 26 September 2009, spent industrial and automotive batteries collected under Article 8.3 undergo subsequent treatment and

recycling. Producers of industrial and automotive batteries, or third parties, are to set up schemes to ensure treatment and recycling.

- Article 12 also says that no later than 26 September 2011 batteries need to be recycled to the efficiencies outlined in Annex 3 of the Directive – which for spent industrial batteries is 65 per cent by average weight where they are lead-acid batteries, 75 per cent by average weight where they are nickel-cadmium batteries, and 50 per cent by average weight for other chemistries. For spent automotive batteries this is 65 per cent by average weight for lead-acid batteries.
- Article 16.1 requires producers of industrial and automotive batteries, or third parties acting on their behalf, to finance any net costs of collection, treatment and recycling of waste industrial and automotive batteries collected under Article 8.3 and Article 8.4. Article 16.5 allows producers and users of industrial and automotive batteries to conclude alternative financial arrangements to Article 16.1.
- Article 17 of the new Directive requires member States to register each producer of industrial and automotive batteries. Such producers are any persons, irrespective of selling technique, who place industrial or automotive batteries, including those incorporated into appliances or vehicles on the market for the first time within the territory of that member State on a professional basis.

Risk Assessment

17. Spent industrial and automotive batteries can pose a risk to the environment and to human health and animal health if they are disposed of incorrectly at the end of their life. The landfilling and incineration of spent industrial and automotive batteries can also result in risks to the environment from the possible leaching of materials (though these are reduced by laws on landfilling and incineration), and a loss of resources which in the case of metals at least, could have been recycled, resulting in less energy use and fewer CO₂ emissions than from virgin metal production.

18. The new Batteries Directive bans the disposal of whole and untreated spent industrial and automotive batteries. It requires all spent industrial and automotive batteries to be treated and recycled, and only following this can the residues be landfilled or incinerated.

19. It is widely accepted that the vast majority of industrial and automotive batteries legally discarded in the UK are already recycled, to some extent, at the end of their life because of the value of the metals contained in them. However, given the total ban on the disposal of whole and untreated waste industrial and automotive batteries, and the fact that it is unclear exactly how many industrial and automotive batteries arise as waste in the UK each year, there will always be a risk that implementation of the new Batteries Directive could lead to some increase in the fly-tipping of spent industrial and automotive batteries which are currently disposed of whole in landfill or via incineration. UK implementation aims to provide a low cost, simple and accessible means by which end-users can discard their waste industrial and automotive batteries from other forms of waste in the future to mitigate such a risk.

The Market for Industrial and Automotive Batteries and Accumulators in the UK

20. There is no official data on the volume and type of industrial and automotive batteries that are placed on the market in the UK in any particular year or arise as waste in any particular year. This is because there has been no specific need for this data to be collected in the past.

21. There are some estimates of the size and composition of the UK markets for industrial and automotive batteries. 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, and formed the basis of the European Commission's Extended Impact Assessment (COM(2003)723 final), (EIA)) supporting the proposal to introduce the new Batteries Directive

22. The Bio Report estimated that some 200,000 tonnes of industrial batteries were placed on the EU-15 market in 2002, of which an estimated 97 per cent were lead-acid (Pb) batteries, and the remainder were generally Nickel-Cadmium (NiCd) batteries. If we assume that industrial batteries are used across Europe in proportion to the size of the economy of different member States, this would imply that based on the Bio estimates, UK sales of industrial batteries and accumulators in 2002 almost 34,000 tonnes.

23. The Bio Report also estimated that in 2002 some 860,000 tonnes of automotive batteries were placed on the market of the then fifteen members of the European Union. If we assume that the sale and use of automotive batteries is in proportion to the size of the economy of a member State, then with the UK making up around one-sixth of (then) EU-15 GDP, the EIA estimate would imply some 143,000 tonnes of automotive batteries were placed on the UK market in 2002.

24. 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 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 forecast this to rise to just under 68,000 tonnes by the end of 2005. In 2008, ERM provided BERR with some updated estimates that suggested around 69,000 tonnes and some 3.5 million units of industrial batteries were sold in the UK in 2006. The original ERM Report forecast future growth for industrial batteries based on an estimate of past trends of an annual increase in the region of 5 per cent in tonnage terms.

25. In its original report, ERM also estimated UK sales for automotive batteries 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 forecast this to rise to just under 115,000 tonnes in 2005. The 2008 estimates from ERM suggested that around 131,000 tonnes and some 9 million units of automotive batteries were placed on the UK market in 2006. The original ERM Report forecast for future growth for automotive batteries was for an annual increase of 0.4 per cent per annum in tonnage terms.

26. Any forecasting of industrial and automotive batteries is fraught with difficulty. Batteries are used in industrial applications and automotives as a consequence of industrial activity and as a consequence of the sale and use of automotives. Batteries are also used in a wider range of

applications, or become obsolete in some applications, because of changes in technology across the industrial and automotive sectors. Also, changes in chemistry composition and other developments in battery technology itself affect the volume, size, weight and composition of new batteries. It is not straightforward to predict how all of this will affect battery volumes placed on the UK market in the future.

27. However, projecting forward the 2008 ERM estimates and the estimates derived from the Bio Report, and applying forecasts for future growth based on the original ERM Report gives a range of estimates of the possible size of the current UK industrial and automotive battery and accumulators markets. This is outlined in Table 1 below. Using an average weight of 13 kilogrammes for an automotive battery, and based on ERM estimates of an average weight of 20 kilogrammes for an industrial battery implies some 10-12 million automotive batteries will be put on the UK market every year from 2010, and 2.5-4 million industrial batteries in 2010 rising to in the region of 4-6.5 million in 2019. These estimates should, however, only be seen as being indicative.

28. The estimates in Table 1 are for industrial and automotive batteries that may be placed on the UK market in the future. They are not estimates of waste arisings. However, estimates for possible waste arisings can be gleaned from these estimates.

29. Such waste estimates are based on the premise that industrial and automotive batteries are placed on the market and/or arise as waste under three circumstances only. These circumstances are as follows:

- i. New batteries replace existing spent batteries (so called 'new for old' replacement). This can be seen as the 'mature' market for batteries, which for the UK may represent the vast majority of sales and waste arisings. Such 'new for old' replacement can also be considered as representing the vast majority of automotive batteries arising in end of life vehicles (ELVs).
- ii. New batteries are purchased by a user. This can be seen as the 'growing' market, where new activity is taking place. This may represent a relatively small proportion of total UK sales and activity in an average year. Any waste arisings from this activity would only occur after a number of years, presuming that the batteries run their full expected life.
- iii. Existing spent batteries are discarded by the last holder. This can be seen as the 'declining' market, where activity is decreasing, and may represent a relatively small proportion of UK activity in an average year.

Table 1: Estimates of Future Size of UK Industrial and Automotive Battery and Accumulator Markets ('000 tonnes)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Industrial										
<i>High</i>	83.9	88.1	92.5	97.1	101.9	107.0	112.4	118.0	123.9	130.0
<i>Low</i>	49.9	52.3	55.0	57.7	60.6	63.6	66.8	70.2	73.7	77.3
Automotive										
<i>High</i>	147.6	148.2	148.8	149.4	150.0	150.6	151.2	151.8	152.4	153.0

Low	132.8	133.3	133.9	134.4	134.9	135.5	136.0	136.6	137.1	137.7
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30. These circumstances could mean that of the total volume of waste industrial and automotive batteries arising in the UK, a significant proportion could be related to the volume of sales of new batteries. However, in any particular year there will be new sales where no waste is created, and there will be waste where no new sale takes place.

Sectors and Groups Affected

31. The waste industrial and automotive battery provisions of the new Batteries Directive impact on all those who place industrial and automotive batteries on the European market. Principally, this is manufacturers of industrial and automotive batteries, but also includes those who sell industrial and automotive batteries under their own brand name, those who professionally import industrial and automotive batteries, and those who place appliances and vehicles containing industrial or automotive batteries on to the European market.

32. It is difficult to estimate the exact number of businesses that may be affected by the waste industrial and automotive battery provisions of the new Batteries Directive, not least because the Directive definition of a producer covers those who place industrial and automotive batteries on the market, and those who place appliances and vehicles on the market which contain industrial or automotive batteries.

33. For automotive batteries, 42 vehicle manufacturers are registered with BERR under BERR's ELV Regulations. There are 2 UK producers of automotive batteries, and an estimated 50-60 importers. For industrial batteries, there are 3 UK manufacturers, an estimated 20-30 importers, and perhaps 100-200 importers. This gives a current estimate of producers in total in the range of 250-350.

Options for Implementation of the new Batteries Directive in relation to spent Industrial and Automotive Batteries and Accumulators

34. BERR, DEFRA, the Department for the Environment Northern Ireland, the Scottish Government, and the Welsh Assembly Government, consulted on draft Regulations to transpose the waste provisions of the new Batteries Directive between 22 December 2008 and 13 February 2009. This consultation presented two main options ('Option 1' and 'Option 2') for implementing the new Directive's provisions with respect to waste industrial and automotive batteries arising in the UK.

35. Option 1 of the public consultation can be summarised as a business-as-usual option coupled with a 'producer safety-net' mechanism. In summary, and under this system, legitimate independent battery collectors would continue to operate as they are at present. Producers would be required to set-up systems to accept from end-users and final holders, waste industrial or automotive batteries that they wished to discard but which independent battery collectors did not wish to collect.

36. Option 2 of the public consultation can be summarised as a much fuller 'producer responsibility' system. Building on the UK's B2B WEEE system it proposed 'extending' producer responsibility to spent industrial and automotive batteries in relation to the sales of

new batteries made by a producer. Producers, operating within a Producer Compliance Scheme (PCS) framework, would be responsible for spent batteries arising as a consequence of a new sale. End-users who were solely discarding spent batteries would be able to return these to a producer under the PCS framework.

37. As outlined in the 'Background' section of this final IA the majority of respondents supported Option 1, in broad terms at least, because it would implement the waste industrial and automotive provisions of the new Batteries Directive whilst allowing as much current legitimate activity to continue as possible. The 'producer safety net' of Option 1 allows independent battery collectors to operate, maintaining competition in this market which historically has been successful in recycling batteries for economic reasons. Producer responsibility is limited to situations where end-users or final holders of waste industrial or automotive batteries cannot find a commercial outlet for their batteries. Producers, in total, can control any costs they may face by making suitable arrangements for collection and/or takeback from end-users or final holders. By these means the additional costs from implementing the new Directive can be minimised for obtaining the environmental benefits from the ban on disposal of whole and untreated waste industrial and automotive batteries.

38. It is important in determining the costs and benefits of implementation to distinguish between transfers of resources across affected parties as a consequence of implementation, and additional resources that will either be saved or will need to be employed by one party or another. In this context, Table 2 below outlines a stylised model which can be seen as the 'welfare impacts' of implementation.

39. In Table 2, the stylised version of current UK practice is that the value from discarded spent industrial and automotive batteries accrues to independent third parties, such as professional battery collectors and reprocessors. These parties operate to obtain the value of the secondary metals contained in spent industrial and automotive batteries (this is A(ITP) in the Table). The cost of disposing of spent batteries not entering a recycling process is seen as falling on the end-user currently (E(U) in the Table). As a consequence of end-users financing this disposal cost there is a risk of fly-tipping (F in the Table). There is also a risk currently of illegal operators acting in the market given that there is no need to record and collect data on who deals with waste industrial and automotive batteries at present specifically (this is G in the table).

40. Under Option 1, independent third parties would continue as under current UK practice, but the introduction of specific UK Regulations with respect to waste industrial and automotive batteries would be expected to reduce the risk of illegal operators. End-users would be entitled to collection and/or take-back of their spent batteries to a producer, and so the costs of discarding any non-economic spent batteries, would in the future move from the end-user to producers (E(P)) in the Table). Producers would need to establish a 'safety net' to capture all spent batteries currently disposed of whole, and any such similar batteries that become 'uneconomic' in the future (B(P) in the Table). The right of end-users to collection and /or takeback would be expected to reduce the current level of risks in relation to fly-tipping. Option 1 would not provide producers with a 'design for recycling' incentive in relation to the batteries they manufacture.

41. Under Option 2, producers would effectively take over the current operations of independent third parties (though they would possibly use such parties to enable them to discharge their producer obligations). This is represented by A(P) in the Table. Producers would be required to establish producer compliance schemes (PCSs) to discharge their obligations, at a cost of C(P) in the table. As in Option 1 spent batteries that are currently disposed of whole would fall

to producers to treat and recycle (E(P) in the Table). The risks of fly-tipping and illegal activity, as under Option 1, would be expected to decrease following the introduction of the Regulations. Under Option 2, producers would benefit from design for recycling benefits in relation to the manufacture of batteries (D(P) in the Table), but would incur costs of entering into, or amending contracts with end-users.

42. The Regulations require producers to offer end-users free takeback of their industrial waste batteries that arise as the consequence of them purchasing new industrial batteries to replace the spent ones (this is an 'old for new' obligation and is irrespective of the chemistry and volume of the new batteries being sold and the waste batteries arising as a consequence of the sale.) However, it is only an obligation for a producer to offer this free takeback because it is acknowledged that in many circumstances an end-user may prefer to deal with an ITP to deal with his waste batteries as he/she does at present. However, the closer relationship between the producer and end-user that is expected to result from implementation may dilute somewhat the operation of ITPs and hence any value from waste industrial and automotive batteries is expected to accrue to both producers and ITPs in the future (this is shown as A(ITP+P) in the table under Option 1.)

43. In terms of waste batteries that do not arise as a consequence of a sale and are purely being discarded by end-users, producers are to provide a means of free takeback for end-users, within a reasonable time period. The end-user is to contact a producer who places on the market the same chemistry of battery to that which is being discarded. (This is E(P) in the Table). Where there is no producer of a chemistry of a battery being discarded the end-user is to contact any producer.

44. The rationale for adopting the proposed implementation route (Option 1) can be summarised as follows:

- (i) The current collection systems for spent industrial and automotive batteries are quite successful and dynamic, and to allow these systems to continue to operate (which Option 2 does not) is expected to contribute to minimising any additional costs from implementation, and so provide a benefit for Option 1 over Option 2.
- (ii) In relation to this Option 1 should preserve competition in this sector of the waste industry, and encourage future innovation with respect to collection, treatment and recycling in this competitive framework.
- (iii) Option 1 will minimise 'red tape' burdens to business, and minimise administrative burdens to business in respect of implementation. Option 1 is a 'light touch' regulatory approach to implementation of the waste industrial and automotive provisions of the Batteries Directive, whilst achieving its environmental aims.
- (iv) The benefits from design for recycling are not expected to be huge in relation to industrial and automotive batteries so losing some of these may not be significant (from Option 1 compared to Option 2). In any case, these benefits only materialise significantly where under Option 2 there is a specific own marque/own brand obligation, and the Directive itself does not introduce this.

Table 2: Waste Industrial and Automotive Batteries and Accumulators: Stylised Version of Current Practice compared to Implementation Options

	Current Practice	Option 1	Option 2
Discard Value	<i>A (ITP)</i>	<i>A (ITP+P)</i>	<i>A (P)</i>
Discard Cost	<i>E (U)</i>	<i>E (P)</i>	<i>E (P)</i>
Safety Net		<i>B (P)</i>	
PCSs			<i>C (P)</i>
Contract Change Cost			<i>H (P)</i>
Fly-tipping	<i>F</i>	<i>F-x</i>	<i>F-x</i>
Illegal collectors	<i>G</i>	<i>G-x</i>	<i>G-x</i>
Design for Recycling lost benefit			<i>D (P)</i>
Disruption to operation of independents			<i>J</i>
Totals	<i>A+E+F+G</i>	<i>A+E+B+(F-x)+(G-x)</i>	<i>A+E+C+H+D+J+(F-x)+(G-x)</i>
Differences		<i>B+(F-x)+(G-x)</i>	<i>C+H+D+J+(F-x)+(G-x)</i>

Key

A (ITP) = Value obtained by Independent Third Parties

A (P) = Value obtained by Producers

B (P) = Cost of Producer Safety Net

C (P) = Cost of Producer Compliance Schemes

D (P) = Design for recycling benefit

E (U) = Discard cost to End-users

E (P) = Discard cost to Producers

F = Costs of fly-tipping

(F-x) = Costs of fly tipping after Regulations. Expected to be less than current practice.

G = Costs of illegal collection.

(G-x) = Costs of illegal collection after Regulations. Expected to be less than current practice.

H (P) = Costs of producers amending contracts with end-users.

J = Costs of restricting competition and disruption from overhaul of current practices

Costs and Benefits

45. It is difficult to quantify the costs and benefits from UK implementation of the new Batteries Directive with respect to spent industrial and automotive batteries. It is also difficult to quantify the costs and benefits in relation to alternative options for implementation. The reasons for this are as follows:

- It remains unclear exactly how many waste industrial and automotive batteries arise in the UK currently. There is no official data on all of these waste arisings specifically, so we have to employ a range of estimates of possible arisings.
- Arisings of waste industrial and automotive batteries will vary year by year as the use and sale of industrial and automotive batteries vary year by year. Given that batteries are only used to support activity, the extent to which they are used and replaced will depend on the level of activity across industrial sectors and across the automobile market. This makes realistic estimates of future annual waste arisings very problematic.
- The industrial and automotive battery market is dynamic with developments in technology and performance taking place constantly. This makes it difficult to estimate the number of batteries which will reach the end of their life in any particular year, and the potential cost or benefit from recycling these batteries. The volume of waste arisings is also dependent on how the user maintains, operates and services the batteries he/she employs.
- The secondary metal market is an international market where values change on a daily basis. Predicting the future values of secondary metals (which influence the costs of recycling) is fraught with difficulty. On top of this the waste industry itself is quite a dynamic industry and new methods and technologies for collection, treatment and recycling make accurate estimates of future costs in this area difficult.

46. In terms of the two options for implementation, the benefits under both options are expected to be the same given that the new Directive bans the landfilling of whole waste industrial and automotive batteries, and requires the recycling of these waste batteries. The costs of the two options are expected to be different, mainly as a result of administrative differences between the options. In the following sections we attempt to quantify these costs and benefits where we can.

Costs

(a) Separate collection and recycling costs (Article 8.3, Article 8.4, Article 14, Article 12, Article 16.1.b and Article 16.5 of Batteries Directive)

47. Estimates of the size of the UK markets for industrial and automotive batteries were outlined in Table 1, with an explanation of why these estimates may provide reasonable first estimates of total waste arisings in an 'average' year.

48. The relatively large quantities of metals in industrial and automotive batteries (compared, for example, to portable batteries), and the existence of a global secondary metals market has meant that waste industrial and automotive batteries have been recycled virtually since they were first invented. However, not all waste industrial and automotive batteries are economic to recycle. The economics of this industry like many other parts of the waste industry are influenced by, apart from secondary metals prices, the volume of materials involved and the particular circumstances under which the waste arises. How the waste arises specifically, for example in terms of location and volume, are also important factors.

49. Information we have from industry, and other anecdotal evidence, suggests that an estimated 95-97 per cent of the weight of waste industrial batteries arising in the UK are currently separately collected to enter a recycling process. For waste automotive batteries this estimate rises to around 99 per cent. This information is consistent with the European Commission's own Extended Impact Assessment (EIA), which says that *"The recycling of spent automotive and industrial batteries generally has net economic benefits. It is estimated that in the current situation 90-100% of the collected automotive and industrial batteries and accumulators are sent to recycling plants."* (Page 39).

50. Table 3 below provides an estimate of the volumes of industrial and automotive batteries which may need to be separately collected and sent for recycling in the UK in the future over current practice.

Table 3: Estimated Tonnages of Additional Waste Industrial and Automotive Batteries Needing to be Separately Collected and Recycled in the UK following Implementation (tonnes)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Industrial										
<i>High</i>	4,193	4,402	4,623	4,854	5,096	5,351	5,619	5,900	6,195	6,504
<i>Low</i>	1,496	1,570	1,649	1,731	1,818	1,909	2,004	2,105	2,210	2,320
Automotive										
<i>High</i>	1,476	1,482	1,488	1,494	1,500	1,506	1,512	1,518	1,524	1,530
<i>Low</i>	1,328	1,333	1,339	1,344	1,349	1,355	1,360	1,366	1,371	1,377

51. In the following sections, we assume that the reason 100 per cent of waste industrial and automotive batteries do not enter a recycling process at the moment is because of the relatively large collection costs of small volumes of batteries. Once these batteries are collected it is assumed that they will be economic to recycle, in accordance with the evidence we have for those that already enter a recycling process, and that the additional benefits from recycling will equal the additional costs of recycling for these relatively small additional volumes of batteries. The additional costs of implementation over business as usual (BAU) are thus seen as those generally relating to separate collection.

Spent Automotive Batteries

52. An average weight for an individual automotive battery is some 13 kilogrammes. For the estimated total sales in the UK this means that in the region of 10-12 million automotive batteries are put on the UK market every year, and could arise as waste every year.

53. An estimated 1.5-1.8 million of these spent batteries are expected to arise in an 'average' year in end of life vehicles (ELVs). These batteries are recycled under the ELV Directive which is transposed into UK law by the UK's ELV Regulations. The new Batteries Directive says that where waste automotive batteries arise in ELVs under the ELV Directive, the ELV Directive should not be prejudiced.

54. Of the remaining estimated 8.5-10 million automotive batteries arising as waste in an 'average' year in the UK, the vast majority of these are believed to arise as replacement of new for old at professional fitters or garages for both private vehicles and for commercial vehicles. A smaller proportion of this total will arise as a consequence of individual private replacement of old batteries. In these instances, individuals usually discard their spent batteries at their local Civic Amenity (CA) site.

55. In all of these circumstance there is likely to be a sufficient volume of waste batteries separately collected to enable the recycling of these batteries to be economic. This is why a collection and recycling market (utilising in some cases reverse logistics) has existed for many years independently of any specific legislation in this area, even in cases where the secondary price for lead-acid batteries has been in the region of £10 per tonne.

56. If the vast majority of spent automotive batteries are relatively easy to collect then this would imply that as long as the secondary price of metals remains positive the vast majority of spent automotive batteries will enter a recycling process. But there will be instances where there are very small volumes arising, across a range of locations, which mean that the costs of collecting these in sufficient volumes is likely to exceed the return from recycling the metals, even when secondary metal prices are high. Hence, these small volumes are likely to end up being disposed of rather than being sent for recycling.

57. Data from LetsRecycle and Materials Recycling Weekly suggest that over the last nine years the average price paid by reprocessors for a tonne of lead-acid batteries has been around £50 per tonne. In the last two years the average has been closer to £150 per tonne. This implies that for waste automotive batteries, collection costs for the estimated 1 per cent of arisings are at least £150 per tonne, because this 1 per cent does not enter a recycling process currently. It is difficult to estimate what the maximum collection costs could be for this tonnage, because it is unclear how and where this waste arises, but an upper estimate of £300 per tonne might not be an unreasonable estimate (and this has not been met with significant disagreement during consultation), to produce a range of collection cost of £150-300 per tonne. These costs are largely made-up of labour costs and transport costs. To reflect possible increases in these costs in real terms over time we use an estimate of a real increase of 2 per cent per annum to reflect average growth in real earnings. Applying these estimates to the additional tonnages of spent automotive batteries that will need to be separately collected in the UK following implementation gives cost estimates of £0.2-£0.5 million in 2010 rising to £0.3-£0.6 million in 2019.

Spent Industrial Batteries

58. Unlike automotive batteries industrial batteries are less uniform in weight. However, an average figure of 20 kilogrammes per head was estimated by ERM, which would imply some 2.5-4 million units currently, rising to 3.5-6 million units by 2018, of industrial batteries being placed on the UK market.

59. Of the estimated tonnages that will need to be separately collected in the future (outlined in Table 4), the available evidence (from Bio and ERM) is that an estimated 97 per cent of these are lead-acid batteries and the remaining 3 per cent other chemistries, most notably Nickel Cadmium (NiCd).

60. We assume the same costs of collection of £150-£300 per tonne for lead-acid batteries as for spent automotive batteries as outlined above. For NiCd batteries a recent estimate from industry is that the costs of collecting NiCd batteries in the UK are in the region of £120 per tonne on average. But the actual cost depends on volumes and location of arisings, and to reflect this we double the £120 per tonne figure to £240 per tonne to represent an upper range estimate (and again this has not met with significant disagreement in consultation). As for automotive batteries we use an estimate of a real increase of 2 per cent per annum to reflect average growth in real earnings.

61. Applying these estimates to the additional tonnages of lead-acid and NiCd spent industrial batteries that will need to be separately collected in the UK following implementation gives total cost estimates of £0.2-£1.3 million in 2010 rising to £0.4-£2.4 million in 2019.

(b) Registration: Article 17 of Batteries Directive

62. The Regulations follow the new Batteries Directive in requiring producers of industrial and automotive batteries to register. This registration is a one-off registration to be undertaken in the UK in 2009. Under Option 1 the proposal is that BERR register producers of industrial and automotive batteries in a similar way in which BERR registers producers under the UK's ELV Regulations. This registration is free at point of service to producers. The synergies with the ELV Regulations should help to minimise regulatory costs here. For the estimated number of producers needing to be registered, and based on time estimates under the ELV Regulations of one hour per producer gives a cost estimate of some £5,000-£6,000 for producers and costs to BERR in the region of £5,000 per annum.

63. Under Option 2, producers would be required to join a producer compliance scheme (PCS), and in addition to this independent third parties (ITPs) would be required to register to operate alongside these PCSs. Estimates from the Environment Agency (EA) are that to assess applications for PCS approval, costs could be in the region of £300,000 in the first year (2009), and in the region of £200,000 each year thereafter. In addition to this, ITPs, represented by an estimated 60-80 independent battery collectors would be required to register, which if this cost in the region of £500 per ITP would represent an annual cost in the region of £40,000 per annum. These estimates represent C(P) in Option 2 of Table 2.

(c) Information and Reporting: Articles 20 and 22 of Batteries Directive

64 Under Option 1, producers are required to discharge their obligations with respect to their take-back obligations by providing end-users with information on what services are available to them, rather than having to provide a physical take-back network of facilities throughout the UK. The latter system would likely to be more costly than the former given that producers would need to set-up physical locations to separately take-back batteries across the whole of the UK. These points would stand idle for the majority of the time.

65. There will, however, be a cost attached to the provision of information. It is difficult to put an accurate figure on what this cost will be, as it will vary by producer according to the type and number of batteries it produces and the number of customers it sells to.

66. Under the UK's implementation of the Internal Market provisions of the new Batteries Directive it was estimated in the IA for these Regulations that requirements in respect of providing information to end-users of portable batteries would be in the region of 1 pence per battery. Industry, generally did not disagree with this estimate. If we apply a similar estimate to the estimates of the volume of industrial and automotive batteries placed on the UK market this gives an estimate of information costs in the region of £150,000 in 2010 and rising to £180,000 in 2018. This estimate represents B(P) under Option 1 in Table 2.

67. Under Option 2, all producers would need to amend their contracts (represented by H(P) in Table 2). Given the wide range of users of automotive and industrial batteries, we could expect such 'menu costs' to exceed £150,000. Though it is difficult to put a figure on this a cost in the region of £1 million in the year prior to implementation, and a cost of 25 per cent of this for future years to reflect changes to future contracts (compared to what would have happened under 'business as usual') may not be unreasonable. In addition to this there will also be costs of information provision when waste batteries arise outside of contractual arrangements. These could be expected to be less than under Option 1 because of the greater role producer's would play under Option 2. An estimate of one-third of the cost under Option 1 may not be unreasonable. However, the estimates outlined above can only be seen as being indicative at this stage.

68. The new Batteries Directive requires the UK to report on its progress of implementation. Under Option 1 this will be largely achieved through returns from those reprocessing waste batteries in the UK or exporting waste batteries for reprocessing overseas. There are 2 reprocessors of waste industrial and automotive batteries in the UK currently. It is estimated that there may be up to 10 exporters of waste batteries. If each of these facilities provided an annual return to Government and this took each 1 day to complete then costs would be in the region of £2,000 per annum (calculated as 12 returns at 8 hours each multiplied by average hourly costs for an employee).

69. For Option 2, producers and independent third parties would need to provide data returns. DEFRA's partial IA for implementation of the waste portable battery provisions of the Directive estimates 'data submission' costs for producers to schemes to be in the region of £1,800 per annum. For the estimates 250-350 producers under the waste industrial and automotive provisions this would imply costs in the region of £650,000 per annum.

(d) Approval of Reprocessors and Exporters of Waste Batteries

70. To ensure treatment and recycling of waste industrial and automotive batteries is to the requirements of the new Batteries Directive, the Environment Agency (EA) propose to approve reprocessors and exporters of waste batteries. The EA are currently estimating this to cost some £14,600 per annum. This applies equally to Options 1 and 2.

Benefits

(a) Separate collection and recycling costs (Article 8.3, Article 8.4, Article 14, Article 12, Article 16.1.b and Article 16.5 of Batteries Directive)

71. The costs section of this final IA outlined possible additional costs to the UK that could be incurred as a consequence of the draft Regulations transposing the waste industrial and automotive provisions of the new Batteries Directive. These costs need to be considered against the benefits of separately collecting and recycling these waste automotive and industrial batteries.

(i) Landfill avoided and CO2 benefits

Spent automotive batteries

72. One benefit from separately collecting the estimated 1 per cent of spent automotive batteries which are currently disposed of as whole, is the avoided cost of resources that would be employed to dispose of these batteries. Given that the vast majority of these batteries are likely to be disposed of via landfill these resource costs are reflected in the gate fees at landfill sites and the negative externalities from landfill.

73. Recent research from WRAP suggests that current levels of landfill gate fees are in the range of £11-£40 per tonne. As waste automotive batteries are classified as hazardous waste it appears more reasonable to use the top of this range as a value for the gate fee. The Landfill Tax is currently on an escalator and stands at £32 per tonne, to rise to £48 per tonne in 2011. It is not clear that this escalator specifically reflects the externalities from landfill, but in the case of waste automotive batteries, which are hazardous waste, the escalator may more closely reflect the potential externalities from disposing of this waste given the potential damage from any leaching of these materials.

74. Of course, not 100 per cent of the additional waste automotive batteries that need to be separately collected in the future will be recycled. The Directive's recycling target for lead-acid batteries is 65 per cent, which means that a maximum of 35 per cent of this waste will still be landfilled following implementation, and so we apply the estimates of the resource costs avoided only to the Directive's recycling targets of the estimate tonnages outlined in Table 4 (though we are aware that some reproprocessors currently send for recycling some acids and some polypropylene cases). These estimates imply benefits in the range of £70,000-£80,000 in 2010 and rising to £80,000-£90,000 in 2019 in today's prices.

75. Another benefit of separate collection and recycling is the avoided externalities from producing primary metals that result as a consequence of using recycled metals. These externalities are largely in terms of emissions of CO₂ from using energy to extract primary metals. Assuming that the cost of these CO₂ emissions are not reflected in the price of primary metals currently means that there will be CO₂ benefits from using recycled metals from waste automotive batteries.

76. A report by ERM for DEFRA in relation to the recycling of portable batteries (*Battery Waste Management Life Cycle Assessment* – ERM, 18 October 2006) estimated that CO₂ equivalent savings from recycling a tonne of portable batteries could be in the region of 198–248 kilogrammes of CO₂ equivalents per tonne of batteries recycled. Automotive batteries contain more metals than portable batteries, but if we use this range as a lower estimate, this implies savings of in the range of 170-250 tonnes of CO₂ equivalent emissions from separately collecting the estimated 1 per cent of automotive batteries currently disposed of whole. Applying the Government's current Shadow Price of Carbon (SPC) figure to these tonnages gives an estimate of the benefit of £5,000-£6,500 in 2010 and rising to £6,000-£8,000 in 2019.

Spent industrial batteries

77. As for automotive batteries there are benefits in the form of resource savings from the avoided landfill of 3-5 per cent of spent industrial batteries in the future. Again, however, these savings apply only to the Directive's recycling targets which are 65 per cent for lead-acid and 75 per cent for NiCd batteries. Savings in landfill gate fees and externalities from landfill are estimated in the region of £80,000-£220,000 in 2010 rising to £130,000-£370,000 in 2019.

78. There are also CO₂ benefits from recycling the materials from spent industrial batteries over producing virgin materials. Based on the same calculations as for spent automotive batteries gives an estimate for these benefits of £5,000-£19,000 in 2010 rising to £10,000-£35,000 in 2019.

(ii) Health Benefits

Spent automotive and industrial batteries

79. There are also health benefits from the avoidance of the landfilling of whole automotive and industrial batteries. The ERM Report (undertaken on behalf of DEFRA) on the recycling of portable batteries estimated a range of health benefits from the avoidance of landfilling portable batteries. These benefits are valued in DEFRA's final IA for recycling portable batteries in the region of £200 per tonne for levels of portable battery recycling similar in tonnage terms to that for spent industrial and automotive batteries we estimate may need to be separately collected and recycled following implementation.

80. Generally, automotive and industrial batteries contain more metals than portable batteries, so the health benefits from avoiding the landfill of these batteries may be greater than those from portables batteries. However, we apply the DEFRA estimates to the tonnages of automotive and industrial batteries avoided from landfill following implementation gives health benefit estimates in the range of £400,000-£800,000 in 2010 rising to £600,000-£1.3 million in 2019.

Small Firms Impact Test

81. Article 18 of the new Batteries Directive allows member States to exempt producers who place *"...very small quantities of batteries and accumulators on the national market.."* from the financing requirements of the Directive, provided this does not impeded the proper functioning of collection and recycling schemes. However, the Directive requires all producers to register irrespective of size. Given that the majority of industrial and automotive batteries are thought to be placed on the market by larger producers, and that there are unlikely to be many producers who place *"...very small quantities.."* of these batteries on the market it is not clear if there would be any significant benefit from exempting small producers of industrial and automotive batteries.

82. In addition to this, attempting to apply exemptions raises the issues of: the appropriate level of any exemption; of equity and fairness amongst all producers; the encouragement of behaviour purely to obtain an exemption; and questions surrounding practical monitoring and enforcement. The responses to the Government's second consultation on implementation of the new Batteries Directive supported these views as 22 of 24 respondents said that small producers should not be exempted from financing obligations.

83. The Batteries Directive requires all waste industrial and automotive batteries to enter a recycling process in the future. To achieve this aim it appears difficult to exempt 'small producers', when the separate collection target is implicitly 100 per cent. Moreover, 'small producers' of batteries are not necessarily small and medium sized enterprises (SMEs). However, BERR will monitor the impact of the Regulations in relation to industrial and automotive batteries on SMEs with the aim of ensuring that there are no disproportionate impacts on SMEs. Following implementation BERR will hold discussions with industry to determine whether there is a case for making changes to the policy in this area.

Competition Assessment

84. UK implementation of the new Batteries Directive with respect to spent industrial and automotive batteries is not expected to have a detrimental impact on competition in the markets for industrial and automotive batteries. The implementation option, Option 1, attempts to implement the new Batteries Directive in the UK with as little disruption to current business practices as possible.

Enforcement and Sanctions

85. The final IA produced by DEFRA for the waste portable provisions of the new Batteries Directive suggests that the enforcement activities of the Environment Agencies would cost in the region of £300,000 per annum. If this was split across producers of portable and industrial and automotive batteries, this would imply around 20 per cent of these costs would be used to enforce industrial and automotive batteries. Under Option 1 BERR is to enforce the waste industrial and automotive battery provisions of the Directive, and it is expected that these costs will be in a region of £60,000 per annum.

Summary and Conclusions

86. Given that the evidence we have is that the vast majority of industrial and automotive batteries are recycled in the UK currently when they arise as waste, we do not expect significant additional costs or benefits in the future from implementing the new Batteries Directive with respect to spent industrial and automotive batteries. In addition, where spent industrial and automotive batteries are sent for recycling currently the treatment and recycling levels achieved are estimated to be broadly equivalent to those required by the new Batteries Directive. Additional costs are expected in terms of the separate collection of those spent industrial and automotive batteries estimated not to currently enter a recycling process. These estimated costs need to be considered against estimated benefits in terms of resource savings from avoided disposal, CO₂ benefits, and health benefits.

87. Two alternative options have been considered for implementation, Option 1 and Option 2. The estimates in this partial IA suggest that Option 1 is to be preferred because it involved less 'red tape' and administrative burden than Option 2, and because it enables implementation of the Directive with as little disruption to current practices as possible, whilst preserving the competitive nature of the market for industrial and automotive batteries and the section of the waste management industry involved with industrial and automotive batteries. However, it remains difficult to estimate potential costs and benefits with any precision, not least because a range of assumptions need to be made, and because it is very difficult to quantify the benefits that will result from greater protection of human health, animal health, and the environment. Table 4 overleaf summarises the main estimates of this final Impact Assessment.

Table 4: Spent Industrial and Automotive Battery and Accumulator Provisions of new Batteries Directive: Summary of Estimates of Costs and Benefits (£ million)*

OPTION 1	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Costs											
<i>Low</i>	0.02	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.9	1.0
<i>High</i>	0.02	2.0	2.1	2.2	2.3	2.5	2.6	2.7	2.9	3.1	3.2
Benefits											
<i>Low</i>		0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8
<i>High</i>		1.1	1.2	1.2	1.3	1.4	1.5	1.5	1.6	1.7	1.8
Net Benefits	-0.02	-0.1- (-)0.9	-0.1- (-)0.9	-0.1- (-)1.0	-0.1- (-)1.0	-0.1- (-)1.1	-0.1- (-)1.1	-0.1- (-)1.2	-0.1- (-)1.3	-0.1- (-)1.4	-0.1- (-)1.4
Present Value of Net Benefit	-0.02	-0.13- (-)0.88	-0.11- (-)0.86	-0.11- (-)0.88	-0.11- (-)0.9	-0.1- (-)0.91	-0.1- (-)0.93	-0.1- (-)0.95	-0.09- (-)0.97	-0.09- (-)1.0	-0.09- (-)1.0
Total NPV	-1.1- (-)9.3										
Present Value of Net Benefit in 2019	-0.09- (-)1.0										

* Numbers may not add due to rounding

OPTION 2	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Costs											
<i>Low</i>	1.4	1.7	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.0	2.0
<i>High</i>	1.4	3.0	3.1	3.2	3.4	3.5	3.7	3.8	4.0	4.2	4.3
Benefits											

Low		0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8
High		1.1	1.2	1.2	1.3	1.4	1.5	1.5	1.6	1.7	1.8
Net Benefits	-1.4	-1.1- (-1.9)	-1.1- (-1.9)	-1.1- (-2.0)	-1.1- (-2.0)	-1.2- (-2.1)	-1.2- (-2.2)	-1.2- (-2.3)	-1.2- (-2.4)	-1.2- (-2.4)	-1.2- (-2.5)
Present Value of Net Benefit	-1.4	-1.09- (-1.84)	-1.05- (-1.8)	1.03- (-1.8)	-1.0- (-1.79)	-0.98- (-1.79)	-0.95- (-1.79)	-0.93- (-1.79)	-0.91- (-1.79)	-0.89- (-1.79)	-0.87- (-1.8)
Total NPV	-11.1- (-19.4)										
Present Value of Net Benefit in 2019	-0.87- (-1.8)										

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 Batteries and Accumulators Directive are eligible for legal aid, but as implementation of the Directive is not expected to have any material effect on the criminal or civil liability of those who are subject to the obligations of the Directive, it should not have any impact on legal aid in the UK.

Race Equality Assessment

The Batteries and Accumulators Directive does not have as one of its aims race equality explicitly. However, one of the aims of implementation of the Directive is to provide equal, and high, levels of environmental and health protection across the UK, irrespective of race.

Disability Equality

The Batteries and Accumulators Directive does not have disability equality as one of its aims explicitly, and it is not believed that implementation of the Directive will have a significant impact in this area.

Gender Impact Assessment

The Batteries and Accumulators Directive is not aimed at overcoming gender inequalities or eliminating barriers to inequality, and it is not believed that implementation of the Directive will have a significant impact in this area.

Human Rights

Implementation of the Batteries and Accumulators Directive is not expected to impact on the rights and freedoms of individuals as set out in the Human Rights Act 1998.

Rural Proofing

Implementation of the Batteries and Accumulators Directive is not expected to have any significant impacts on rural areas or circumstances because it applies to all batteries and spent batteries wherever they are used or are discarded as waste.

Department /Agency: Defra	Title: Impact Assessment of Implementation of European Batteries and Accumulators Directive (2006/66/EC) in the UK	
Stage: Full	Version: Two	Date: [18] March 2009
Related Publications: Consultation Document on Implementation of EU Batteries and Accumulators Directive (2006/66/EC) in the UK		

Available to view or download at:

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

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

The problem under consideration is the appropriate level of environmental protection when spent batteries are discarded at the end of their life. Government intervention is needed because the full social costs of spent batteries are estimated to exceed the private costs leading to inefficiently low environmental protection.

What are the policy objectives and the intended effects?

The policy objective is to transpose the European Batteries and Accumulators Directive (2006/66) to provide the appropriate level of environmental protection where spent batteries are concerned. The intended effect is that manufacturers, professional importers and distributors take financial responsibility for treating and recycling separately collected spent batteries at the end of their life.

What policy options have been considered? Please justify the preferred option

We considered two main options. The first was that all producers of portable batteries would need to join a single compliance scheme which would carry out some or all of their obligations under the Directive. The second option would allow a number of compliance schemes to operate on behalf of producers. The second option is the preferred one because we believe that competition between schemes will lead to lower costs to producers. In addition, we considered the potential cost savings of delaying implementation against the risk of infraction charges – this showed that our preferred option of interim targets remains the most cost-effective method of meeting our obligations. Furthermore, the likely costs of infraction are large enough to justify implementing the measure compared with ‘do nothing’.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

Implementation of the policy will produce new data before the main costs are incurred – the first Directive target applies in 2012. We will review the policy in the first half of 2011 to gain firmer information about costs and benefits. This will enable us to consider ways in which the costs can be further reduced.

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:

Jane Kennedy.....

Date: 31/03/2009

Summary: Analysis & Evidence

Policy Option: 1 (Single Scheme)	Description: Single Scheme Portable Batteries, 'Full Producer Responsibility' Industrial and Automotive Batteries, Internal Market
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COSTS	ANNUAL COSTS		Description and scale of key monetised costs by 'main affected groups'
	One-off (Transition)	Yrs	
	£ 1.3m to 5.4m	9	As a producer responsibility directive, the costs of the collection and treatment of batteries should fall on those who put batteries on to the market in the UK. Costs include collecting, sorting and treating batteries (rising to £9m-11.9m pa by 2016), initial communication & scheme setup costs (£1.3m-5.4m) ongoing monitoring, communication and administration costs (£2.5m-4.4m). Cost savings may arise following review of the Batteries Regulations. In light of data for collection and treatment/recycling provided by producers upon registration and quarterly sales data, it will be possible to re-assess our current estimates and the levels of the de-minimis provisions which apply for distributors and producers.
	Average Annual Cost (excluding one-off)		
£ 6.5m-9.9m		Total Cost (PV)	£ 49.8-79.6m
Other key non-monetised costs by 'main affected groups'			

BENEFITS	ANNUAL BENEFITS		Description and scale of key monetised benefits by 'main affected groups'
	One-off	Yrs	
	£ 0		The benefits accrue to society as a whole and are related to small reduced climate change impacts (£100k pa) and some human health benefits related to the reduced impact of battery disposal.
	Average Annual Benefit (excluding one-off)		
£ 0.85		Total Benefit (PV)	£ 6.4m to 6.5m
Other key non-monetised benefits by 'main affected groups'			
The impacts of reduced disposal on ecosystem health were not quantified or valued, nor were any non-market benefits of reduced natural resource extraction for primary battery production.			

Key Assumptions/Sensitivities/Risks

No growth in disposable battery waste was assumed in the central case, however sensitivity analysis was carried out (see annex). Risks of infraction if targets are not met are not included above but could lead to costs of £8m per year to the tax payer. Infraction risk is also discussed in the annex.

Price Base Year 2007	Time Period Years 9	Net Benefit Range (NPV) £ -73.1m to -43.4m	NET BENEFIT (NPV Best estimate) £ -73.1m
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What is the geographic coverage of the policy/option?	UK
On what date will the policy be implemented?	1 January 2010
Which organisation(s) will enforce the policy?	Environment Agency
What is the total annual cost of enforcement for these organisations?	£ 0.6m
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?	£

What is the value of changes in greenhouse gas emissions?			£ 0.1m by 2016	
Will the proposal have a significant impact on competition?			No	
Annual cost (£-£) per organisation (excluding one-off)	Micro	Small	Medium	Large
Are any of these organisations exempt?	Yes	Yes	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices)				(Increase - Decrease)
Increase of	£ 1.3m-2.7m	Decrease of	£	Net Impact £ 1.3m-2.7m

Key:

Annual costs and benefits: Constant

(Net) Present Value

Summary: Analysis & Evidence

Policy Option: 2 (Preferred Option)	Description: Multiple Scheme for collection, sorting and treatment on portable batteries
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COSTS	ANNUAL COSTS		<p>Description and scale of key monetised costs by 'main affected groups'</p> <p>As a producer responsibility directive the costs of the collection and treatment of batteries should fall on those who put batteries on to the market in the UK. Costs include; collecting, sorting and treating batteries (rising to £9m-£11.9m pa by 2016), initial communication & scheme setup costs (£1.3m-5.4m) ongoing monitoring, communication and administration costs (£2.5m-4.4m). Cost savings may arise following review of the Batteries Regulations. In light of data for collection and treatment/recycling provided by producers upon registration and quarterly sales data, it will be possible to re-assess our current estimates and the levels of the de-minimis provisions which apply for distributors and producers.</p>
	One-off (Transition)	Yrs	
	£ 1.3m to 5.4m	1	
	Average Annual Cost (excluding one-off)		
	£ 6.5m to 9.9m		<p>Total Cost (PV) £ 49.8-79.6m</p>
Other key non-monetised costs by 'main affected groups':			

BENEFITS	ANNUAL BENEFITS		<p>Description and scale of key monetised benefits by 'main affected groups'</p> <p>The benefits accrue to society as a whole and are related to small reduced climate change impacts (£100k pa) and some human health benefits related to the reduced impact of battery disposal.</p>
	One-off	Yrs	
	£	n/a	
	Average Annual Benefit (excl. one-off)		
	£ 0.85m		<p>Total Benefit (PV) £ 6.4m to 6.5m</p>
Other key non-monetised benefits by 'main affected groups'			
The impacts of reduced disposal on ecosystem health were not quantified or valued, nor were any non-market benefits of reduced natural resource extraction for primary battery production.			

Key Assumptions/Sensitivities/Risks

No growth in disposable battery waste was assumed in the central case, however sensitivity analysis was carried out (see annex). Risks of infraction if targets are not met are not included above but could lead to costs of £8m per year to the tax payer. Infraction risk is also discussed in the annex.

Price Base Year 2007	Time Period Years 9	Net Benefit Range (NPV) £ -73.1m to -43.4m	NET BENEFIT (NPV Best estimate) £ -43.4m
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What is the geographic coverage of the policy/option?	UK
On what date will the policy be implemented?	1 January 2010
Which organisation(s) will enforce the policy?	Environment Agency
What is the total annual cost of enforcement for these organisations?	£0.6m
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?	£
What is the value of changes in greenhouse gas emissions?	£0.1m by 2016

Will the proposal have a significant impact on competition?			No	
Annual cost (£-£) per organisation (excluding one-off)	Micro	Small	Medium	Large
Are any of these organisations exempt?	Yes	Yes	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices)			(Increase - Decrease)	
Increase of	£1.3m-2.7m	Decrease of	£	Net Impact £ 1.3m-2.7m

A) RATIONALE FOR GOVERNMENT INTERVENTION

1. Making and disposing of portable batteries and accumulators can have negative impacts on the environment and on public and animal health. Some batteries contain hazardous substances such as cadmium, mercury and lead. Cadmium, for example, can be toxic to aquatic invertebrates and can bio-accumulate and damage ecosystems. Batteries disposed of incorrectly can lead to such heavy metals leaking into the ground, causing soil and water pollution and endangering wildlife. Further impacts may arise indirectly from the disposal of batteries, as they contain a range of metals that can be re-used as a secondary raw material, so disposal means that alternative primary resources have to be used in the production of goods or energy. However, none of these effects are currently reflected in the market price for batteries.

2. Previous Community legislation on batteries (Directive 91/157/EEC) required Member States to set up collection schemes for those batteries covered by the Directive and required collected batteries to be recovered or disposed of. However, the Directive only applied to batteries containing more than specified amounts of mercury, cadmium or lead. Since these represent only about 7% of portable batteries placed on the market, the Directive did little to promote portable battery collection. As a consequence:

- Most portable batteries are still going for final disposal to landfill or incineration. In the UK, only about 2-3% of waste portable batteries are collected for recycling. Other countries are achieving much higher rates (based on 2002 figures) of between 14% in Spain and 59% in Belgium.
- Producers do not pay for the environmental costs arising from the disposal of waste batteries.
- There is a lack of publicity for battery collection points and, in some areas, a complete absence of collection facilities. This is probably because of the high costs of sorting and recycling mixed portable batteries. With sorting and recycling costs of around £1000 a tonne (excluding VAT) there has been little incentive for local authorities or others to collect batteries for recycling.

3. The EC Directive on Batteries and Accumulators 2006/66/EC came into effect on 26 September 2006. The UK's timetable for transposing the Directive's requirements into national law has been delayed by the complexity of the issues to be resolved and by the need for full stakeholder consultation. We expect to lay regulations in early 2009 with the first compliance period running from 1st January 2010 to 31 December 2010. Compliance periods will run from January – December thereafter.

4 The Directive aims to reduce the number of waste batteries going to landfill and increase the recovery and recycling of the material they contain. The Directive applies, with minor exceptions, to all types of portable batteries irrespective of their shape, weight, composition or use. Industry estimates that between 25,000 and 30,000 tonnes of portable batteries are currently placed on the UK market each year. Given the current collection rate of around 3%, this means raising the quantity of portable batteries collected from an estimated 600 tonnes to about 6,250- 7,500 tonnes to achieve the 2012 collection target.

5. The Directive sets out a number of requirements for spent portable batteries:-

- Producers will pay for the collection, treatment and recycling of waste portable batteries.
- A minimum collection rate of 25% for portable batteries must be achieved by 2012, increasing to 45% by 2016. The Directive defines 'collection rate' as *"The percentage obtained by dividing the weight of waste portable batteries and accumulators collected...in that calendar year by the average weight of portable batteries and accumulators that producers either sell directly to end-users or deliver to third parties in order to sell them to end-users...during that calendar year and the preceding two calendar years"*.
- The Directive requires that collection schemes for the return of waste batteries are established and that accessible collection facilities are set up.
- When supplying batteries to end-users, distributors must take back waste portable batteries free of charge, unless an assessment shows that alternative existing schemes are at least as effective in attaining the environmental aims of the Directive. Distributors are defined in the Directive as *"Any person that provides batteries and accumulators on a professional basis to an end-user"*, and therefore includes retailers.
- Member States may exempt small producers from the provisions on the financing of collection, treatment and recycling of waste batteries (Article 18). The producers that may be exempted are *"producers which, relative to the size of the national market, place very small quantities of batteries or accumulators on the national market"*.
- Recycling efficiencies will need to be met for all types of batteries.

B) BACKGROUND

I) Costs of meeting the Directive targets

6. This impact assessment draws on a report by ERM Consulting who were employed by Defra to analyse the costs and benefits of meeting the Batteries Directive. Their report was published in October 2006 as "Battery Waste Management Life Cycle Assessment"¹.

7. The ERM report estimated the costs and benefits over the period 2006 to 2030 of meeting the Directive targets for consumer portable batteries in 2012 and 2016.

8. The report looked at different ways of collecting batteries and some scenarios about how these may develop in the future. ERM looked at nine scenarios. The scenarios were a mix of different types of collection ('mostly kerbside collection', 'mostly Civic Amenity site', 'mostly collection in places like business and schools') and different types of recycling (UK provision, EU/UK provision, EU only). The report found little difference between the 9 scenarios in the total costs of separate collection, sorting and treatment of batteries.

Costs of collection, sorting and treatment

9. ERM argued that producer responsibility would drive down sorting costs so that these costs could be halved. ERM's assessment of treatment and recycling costs were based on a charge per tonne which varied by battery type and took into account the value of the

¹Available online at: <http://www.defra.gov.uk/environment/waste/topics/batteries/pdf/erm-lcareport0610.pdf>

products extracted in the recycling process. For some types of battery, the value of products extracted in recycling could be greater than the costs of treatment and recycling. The report also took into account possible economies of scale.²

10. To estimate the costs and benefits of implementing the Directive, we compared these costs and benefits against a baseline scenario where the current very low levels of collection and recycling continue into the future. Table 1 shows the estimated collection, treatment and recycling costs of meeting the Directive against this baseline (where most batteries are simply disposed of).

11. The costs in Table 1 are based on those in the ERM report but with some differences. ERM assumed that battery collection would start to increase from 2006. This has not happened to any significant degree. We have, therefore, updated their figures to take into account the delay in increasing battery collection. This means that collection must increase more rapidly if we are to meet the collection targets for 2012 and 2016. This in turns means that costs increase more rapidly too. Disposal costs are adjusted for the increased landfill tax announced in the Budget 2007 and updated Defra figures on disposal costs (2007 prices). Numbers of batteries collected are slightly different to those in the previous partial impact assessment as a non-linear increase in battery collection was chosen to reduce the burden on interim targets early on. ERM's collection, sorting and treatment estimates are inflated to 2007 prices. Present values are based on a discount rate of 3.5%.

Costs of running the scheme

12. In addition to the costs of collection, sorting and recycling there are costs of running the scheme (administrative, publicity and monitoring/enforcement costs) which fall to producers. These are discussed further in the "Policy Options" part of this Chapter.

Table 1: Estimated total costs to producers (with interim targets)

Year	Tonnes of batteries placed on market	Tonnes collected	Proportion collected	Collection, sorting and treatment costs (£m)		Cost of running scheme (£m)		Alternative cost of disposing of batteries (£m)
				Low	High	Low	High	
2008	24850	497	2%	1.5	1.7	3.8	9.8	1.4
2009	24850	497	2%	1.5	1.7	2.5	4.4	1.5
2010	24850	2485	10%	3.3	3.9	2.5	4.4	1.7
2011	24850	4473	18%	5.1	6.2	2.5	4.4	1.8
2012	24850	6213	25%	6.6	8.2	2.5	4.4	1.8
2013	24850	7455	30%	7.4	9.3	2.5	4.4	1.8
2014	24850	8698	35%	8.0	10.2	2.5	4.4	1.8
2015	24850	9940	40%	8.6	11.1	2.5	4.4	1.8
2016	24850	11183	45%	9.0	11.9	2.5	4.4	1.8
Discounted total costs to present day (£m)				42.8	53.5	20.7	39.7	13.6
Discounted total costs above the alternative (baseline) cost of disposing of batteries (£m)				High	79.6			
				Low	49.8			

Notes:

(1) Year 2008 includes start-up costs of £1.3m and £5.4m in the low and high cost scenarios, as shown in Table 7.

(2) The net costs of the low and high scenarios above the alternative (baseline) cost of disposing of the batteries is obtained as £53.5m + £39.7m - £13.6m = 79.6m.

Environmental benefits

13. The ERM report also quantifies and puts a value on some environmental impacts. The report estimates that, for every tonne of batteries treated, we could reduce global carbon dioxide emissions by between 198kg and 248kg. (This benefit arises as materials recovered

² Full details of the cost analysis are shown in chapter 6, pages 116 to 122 of the ERM report.

in the recycling process can be used as a substitute for primary materials which tend in this case to take more energy to process.) Using this range, Table 2 applies Defra's recommended shadow price of carbon to the tonnages of batteries that ERM estimate will need to be collected to meet the Directive³. This assumes that the money value of carbon impacts increases by 2% per annum in real terms. Present values as before are based on a discount rate of 3.5%, and environmental values in from the ERM report have been inflated to 2007 prices.

14. The coverage of other environmental impacts is less complete, with (mainly) the health impacts of a few pollutants (NO_x, PM₁₀, SO₂ and VOCs) valued in monetary terms. The impacts of other pollutants on human health, and all pollutants on ecosystem health, aquatic toxicity, acidification and eutrophication have not been included. The non-carbon values in Table 2 should be viewed, therefore, as the minimum values for wider environmental benefits⁴.

Table 2: Partial assessment of the environmental benefits of increased treatment

Year	Benefits of collecting, sorting and treating batteries (over and above disposal)				
	Carbon (tonnes CO2 saved)		Carbon (valued at Defra Shadow Price of Carbon - £m)		Money value of non-carbon
	Low	High	Low	High	
2008	98	123	0.00	0.00	0.1
2009	98	123	0.00	0.00	0.1
2010	492	616	0.01	0.02	0.4
2011	886	1109	0.02	0.03	0.7
2012	1230	1541	0.03	0.04	0.9
2013	1476	1849	0.04	0.05	1.1
2014	1722	2157	0.05	0.06	1.3
2015	1968	2465	0.06	0.07	1.4
2016	2214	2773	0.07	0.08	1.6
Discounted benefits to present day (£m)			0.2	0.3	6.2
Discounted benefits (£m)			High	6.5	
			Low	6.4	

xx) Benefits of mitigating the risk of infraction charges

xx. Though the net cost of the best alternative exceeds the benefits by £43.4m (£49.8 in costs less £6.4m in benefits), we are committed to keeping costs down – and we will review at the earliest opportunity in 2011 the initial costs in the implementation of the schemes.

xx. Also, as shown in the annex, we have considered the costs of a “just in time” scenario, meeting our 2012 and 2016 obligations without interim targets. Though these may reduce costs by a maximum of £15.4m (see Table 12), it does so at the higher risk of infraction charges, which could amount to some £16m (see Table 13) in addition to damage to the UK's reputation. Though there is much uncertainty around these particular figures, the costs of delaying implementation does not outweigh our preferred option interim targets. A view supported by respondents to our consultation.

xx. Finally, the risk of infraction costs of £8m per annum from the period 2012 to 2016 and beyond are large enough to justify implementing the measure as opposed to ‘do nothing’.

³ The central assumption in the ERM report is that battery arisings will remain constant; some sensitivity analysis was carried out around this in the life cycle assessment work, but not the cost estimates. The impact on costs of increasing battery growth at 2.5% per year is included in the annex to this evidence base.

⁴ More details of the environmental impact valued can be found on page 127 of the ERM report.

II) Desired outcomes of the proposals

15. The desired outcome is that the regulations will introduce a producer responsibility system which will place obligations on producers to finance the collection, treatment and recycling of waste portable batteries and enable the UK to comply with the Batteries Directive. The intention is to achieve the environmental benefits of the Directive at least cost to businesses and without damaging UK competitiveness. To do this, the system will need to a) minimise costs for producers and for consumers; b) achieve a high level of compliance by producers (with non-compliance resulting in appropriate action being taken); and c) include a registration and data management system robust enough to provide timely and accurate reporting data to producers, the competent authorities, Government, and the European Commission.

16. The proposals will also need to ensure that the system develops a UK-wide battery collection infrastructure capable of achieving the collection targets and meeting the requirements of the Directive. The collection framework should be accessible to consumers, taking into consideration population density. The existing civic amenity infrastructure could contribute to the collection network but, on their own, would not be enough to achieve the Directive's collection targets. Other types of collection facility will need to be established. This will include shops through the requirement for shops to take back batteries and the collection systems which Batteries Compliance Schemes will need to establish in order to meet their targets.

17. The proposals also aim to achieve a high level of participation by consumers to maximise the separate collection of spent portable batteries and minimise co-disposal with other household and municipal waste in the future.

III) Who will be affected?

18. Under the Directive, 'producer' is defined as any person in a Member State that, irrespective of the selling technique used, including by means of distance communication, places batteries or accumulators, including those incorporated into appliances or vehicles, on the market for the first time within the territory of the Member State on a professional basis, and are likely to include:

- Battery manufacturers
- Retailers of own label brands *only if importing the labelled batteries and putting them on the UK market for the first time*
- Importers of batteries
- Domestic Original Equipment Manufacturers (OEM) - *if placing batteries on the UK market for the first time*
- Pack assemblers - *only if the assembler places the batteries on the UK market for the first time*
- Importers of electrical equipment containing batteries when sold
- Distance sellers - *only if in other respects they fall within the definition of the directive*

19. A company will only be a producer if they are registered as a business in the UK and if they put batteries on to market for the first time in the UK. Battery manufacturers are, of course, the very first step in the production to consumer chain. However, in the UK, there are few, if any, domestic portable battery manufacturers and therefore many importers will be "producers" within the scope of this Directive.

20. Retailers and other distributors of batteries also have obligations under the regulations – the impact on them is considered later. Others groups will also have an interest in whatever arrangements are introduced. These include, for example:

- Consumers/end-users – both individuals and businesses
- Local authorities
- The waste management Industry including waste collectors

21. In addition to the industry stakeholders referred to above, implementation of the Batteries Directive involves a range of Government stakeholders:

- Department for Business, Enterprise and Regulatory Reform (BERR – formerly DTI) – are co-ordinating implementation of the Batteries Directive and leading on automotive/industrial batteries. Defra is leading on the portable battery provisions.
- Devolved Administrations – the Directive has to be transposed across the UK.

The Welsh Assembly and Northern Ireland Ministers have agreed that the provisions applying in their jurisdictions can be included in composite UK Regulations. In Northern Ireland there will be specific regulations to set up the fees and ensuring that the Directive is fully transposed. In Scotland, Scottish Ministers have agreed that the producer responsibility provisions should be transposed in UK Regulations. The Scottish Parliament will transpose the provisions of Articles 12 and 14 that are not dependent on producer responsibility by its own Regulations.

- Environment Agency – EA will be responsible for the monitoring and enforcement of the Regulations with regard to Producer Responsibility in England and Wales, and may be responsible for some other aspects (e.g. registration and audit). The Scottish Environment Protection Agency and the Northern Ireland Environment Agency is expected to carry out this role within their jurisdictions.
- Another body – to be appointed – will be responsible for the monitoring and enforcement of the Regulations with regard to the distributors take back across the UK.

IV) The UK consumer battery market

22. The consumer battery market comprises portable primary and secondary (rechargeable) batteries (also referred to in the Directive as “Accumulators”). The retail battery market (i.e. excluding batteries in products) has been estimated to have a value of £417m in 2007. According to International Market Research TNS, six battery brands share 72% of the consumer market by volume. The remaining 28% market share is held by ‘own label’ retail brands, and imported brands. A recent study by WRAP (Waste & Resources Action Programme, 2007) identified over 700 different brands of batteries arising in a sample waste stream of its kerbside collection trial. Most portable primary batteries are used by consumers and an estimated breakdown is given below.

Table 3: UK Consumer Battery Market – share by value and weight

Battery Sector	2000 share by value(%)	2003 share by weight (t)
Primary	97	19,662
-Alkaline Manganese (AlMn)	76	14,899
-Zinc Carbon (ZnC)	17	4,628
-Button Cells	4	28
-Other	n/a	110
Secondary	3	5,187
Total	100	24,850

Source: ERM report

23. Current UK sales data for portable primary batteries, recorded by the British Batteries Manufacturers Association (BBMA), classifies battery sales according to consumer (retail,

wholesale and commercial) and non-consumer (industrial, government, Original Equipment Manufacture (OEMs) and military) shipments. About 90% of sales are thought to be to the consumer market. Of this, 88% consist of general purpose batteries (AlMn & ZnC). A larger relative proportion of sales of lithium batteries and other primary chemistry were to the non-consumer market, owing to their more specialist applications.

V) Battery collection, treatment and recycling

24. About 2-3% of waste portable batteries are thought to be recycled. The rate of recycling of rechargeable batteries is unknown. We do not know how many local authorities recycle batteries but a survey in 2005 found that 37 (14% of the 258 authorities who responded) collected batteries (WRAP, May 2005). A small number of these collect household batteries from the home. A few retailers have set up schemes and Lancashire County Council set up a battery collection scheme involving 258 participating schools with plans to extend this to 500 schools.

25. A number of waste management companies collect portable batteries in the UK, including G&P Batteries, Cleanaway, ECT Recycling and Loddon Holdings. Of these, G&P Batteries are the largest, collecting, sorting and recycling 500-600 tonnes of portable batteries per year with the majority coming from commercial sources.

26. WRAP, on behalf of Defra and the Devolved Administrations, trialled a number of different collection schemes to identify the best way to develop a UK battery collection infrastructure. The schemes were run in partnership with a selection of local authorities and not for profit organisations that already operated recycling collection services. The kerbside collection trials covered over 482,000 households in a mixture of high-rise, urban and rural situations across England, Scotland, Wales and Northern Ireland. The trials were extended to include methods of collection such retailer take back at a selection of large stores (PC World, Homebase, Argos, Tesco and B&Q), community ‘drop off’ sites and postal returns schemes.

27. The kerbside collection trials were launched in April/May 2006, the retailer take back schemes were launched between October 2006 and March 2007 and the postal trial was launched in June 2007. The results up until March 2008 are shown below. Cost data is also shown but WRAP thinks these over-estimate the costs that producers will face because the trials had high start up costs and limited economies of scale by up to 40-50%. The WRAP trials provide evidence that producers should be able to save costs over time. The second year costs shown in Table 4 are much less than the first year ones.

Table 4: WRAP Trial Results (based on batteries collected and sorted by chemistry)

	Kerbside	Retailer	Community Drop-off	Postal
Total households served	482,000	201,000	219,000	38,000
Estimated population served	1,169,000	477,000	465,000	81,000
Total number of collections	110	829	8	5
Total weight of batteries collected (tonnes)	95	10.4	5.7	2.7
Cost per kg (year 2 trials)	£4*	£10	£10	£16

* Local authority costs. Collection by Community schemes was more expensive.

28. The ERM report – carried out before the WRAP trials – included an estimate of the potential scale of collection infrastructure that may be needed to meet the Directive targets:

Potential Collection Infrastructure									
The potential infrastructure that has been identified in the UK is outlined below and includes (ERM 2006):									
<ul style="list-style-type: none"> - 197 coordinating waste authorities each of which could potentially introduce a kerbside collection of batteries; and 1065 CA sites that could collect waste batteries; - An estimated 69,500 institutional points (retail outlets, schools etc.) that could operate as a battery collection point; - 73 postal depots that could act as consolidation points for postal collection systems; and - An estimated 50 lighting maintenance companies, each is likely to recover NiCd batteries through emergency lighting maintenance and provide for their consolidation and collection. 									
The number of collection points required to meet the Directive Targets have been determined based on a number of collection scenarios including:									
<ul style="list-style-type: none"> - Collection Scenario 1 where kerbside collection schemes are favoured; - Collection Scenario 2 where CA site collection schemes are favoured; and - Collection Scenario 3 where bring receptacle collection schemes, located in institutional premises (business/school/public/WEEE dismantlers etc.), are favoured. 									
Table 2.1: Number of Collection Points Required to Meet Directive Targets over Study									
Scenario	No. Kerbside collection points			No. CA Collection Points			No. Institutional Collection Points		
	1	2	3	1	2	3	1	2	3
Year									
2012	101	18	49	95	543	95	18,517	18,517	35,459
2016	181	32	89	171	978	171	33,331	33,331	63,827

VI) Battery treatment and recycling

29. There is only one UK treatment plant for household alkaline and zinc carbon batteries which has the capacity to treat between 500-1500 tonnes of batteries per year.

30. There are plans to build the UK's first specialist reprocessing plant for lithium ion batteries (used in mobile phones, AV equipment). Once operational it would be capable of handling 150 tonnes of waste lithium ion batteries per year, which is around a third of current UK annual usage.

31. There are two facilities for reprocessing mercury in button cells and one main facility reprocessing spent silver oxide batteries.

32. There are no UK facilities for recycling nickel cadmium (NiCd) batteries (used in power tools, emergency lighting), so those collected are generally exported to France for recycling.

33. The Directive and UK transposing Regulations may stimulate the further development of the UK's own reprocessing facilities for waste batteries.

VII) Developing policy in partnership with stakeholders

34. A process of informal consultation with stakeholders took place between January and October 2007 and again between July and October 2008. This involved a series of stakeholder workshops supported by a website resource including papers and summaries of comments as well as targeted one to one meetings with sector and cross-sector stakeholder groups including battery producers, retailers and local authorities, and conference talks to provide regular updates on the implementation process. A formal public consultation ran from December 2007 to March 2008 on options for implementing the requirements of the Directive, with a Government response published in July 2008. Feedback received during both the informal and formal consultation process was used to develop and refine policy options. The Government also held meetings in August and September 2008 with retailers, producers, local authority representatives, the waste management industry and prospective producer compliance schemes. These helped in the preparation of detailed regulations.

The Scottish Executive and the Department of the Environment in Northern Ireland have been responsible for consulting local stakeholders in parallel to the consultations by the project team in England and Wales.

35. The Government and devolved administrations carried out a second consultation between 22 December 2008 and 13 February 2009 on detailed regulations to transpose the waste provisions of the Batteries Directive. 128 responses were received from a wide range of stakeholders including battery producers, potential compliance schemes, retailers, local authorities, recyclers and others. This IA reflects changes made to the regulations in the light of those responses.

36. We have considered the impact tests on race, disability and gender equality and human rights. We have concluded that the policy proposals under consideration will not have any significant impact in these areas.

C) POLICY OPTIONS

37. The Government's first consultation paper on implementing the Batteries Directive set out two broad options - a single compliance scheme which all producers would have to join or multiple schemes. After studying the responses to this consultation, the Government announced in July 2008 that we had decided to choose the option of allowing multiple compliance schemes. This section presents the analysis supporting that decision.

Option 1: A Single Compliance Scheme

38. Under this option, producers (i.e. any person who places batteries on the UK market for the first time on a professional basis), would have been required to discharge their obligations by joining a single Scheme which would:

- set up and maintain a register of producers;
- set up an infrastructure to collect portable batteries;
- ensure that the collection targets set in the Regulations were achieved;
- establish and run a publicity campaign to raise consumer awareness of the need to recycle batteries;
- collate the data, which producers are required to provide by the Directive, and report on this as necessary;
- arrange the necessary battery collection, treatment and recycling as required by the Directive, and channel producer funding to finance this in accordance with producers' market shares.

39. A potential advantage of having a single compliance scheme was that it could combine the functions key to achieving the objectives of the Directive. These include a planned approach to collection, communications and data handling. This option assumed that collectors and treatment and recycling facilities would compete to provide services to the scheme; and that producers might arrange their own collection, treatment and recycling in some circumstances.

40. The Scheme would have paid a fee to the environment agencies to cover the cost of producer data audit and registration.

41. The Scheme would have charged producers a cost recovery registration fee. This would be an administration fee to recover cost of the Scheme set-up and ongoing costs and a fee for publicity, both of which would be charged in accordance with market share. A compliance fee for collection, treatment and recycling would also be charged per weight of batteries to members (except to those members making their own collection, treatment and recycling arrangements).

42. The Scheme would have submitted an operational plan for approval by the Secretary of State demonstrating how it intended to discharge the obligations of its members.

Economic impact

Benefits to stakeholders – producers

43. The possible benefits to producers were:

1) *Standardisation of consumer information and higher consumer participation* - A single national campaign should lead to more consumers returning batteries for recycling. A single communications campaign should also cost less than separate campaigns by a number of schemes.

2) *Standardisation of data collection and management* – would result in simplicity and clarity for producers and the monitoring body. This might have led to time savings in monitoring the data and therefore reduce administrative costs.

3) *Managed approach to collection infrastructure* – The Single Scheme would have ensured that there was a UK-wide approach to developing the collection infrastructure. This could have avoided schemes and battery collectors competing for easy collection networks only. Planning logistics centrally could also avoid duplication of effort. Also, having only one administrator offering terms and conditions to collectors might increase the likelihood that certain ‘potential collectors’ will be willing to enter into collection contracts with the scheme. If there are a number of schemes offering a range of different contracts, this may result in certain establishments, e.g. schools, local authorities, not participating due to confusion around which scheme to choose.

4) *Competition amongst collectors, and treatment and recyclers* – The scheme would have let contracts by competitive tender to collectors, treatment/ facilities and recyclers. Provided there are enough collectors/recyclers this might have minimised costs through competition between these firms.

Costs to stakeholders – producers

Compliance cost: Collection, sorting and recycling

44. The background section of this IA includes ERM’s 2006 estimates of the costs of collection, sorting and recycling which we have updated to present values. Current collection, sorting and recycling costs for 1 tonne of mixed portable batteries are estimated to be in the range £1000 to £1300 per tonne and are projected to decrease to between £650 and £950 per tonne by 2016 when the volumes of batteries and recycling efficiencies reach Directive target levels. These are averaged values and are based on a typical mix of batteries that would be expected to arise at, for example, the kerbside, and collecting many small quantities of batteries from different types of collection sites, with the assumption that the transport logistics would be reasonably efficient.

45. As discussed under option 2, we think that a single scheme would be more likely than multiple schemes to lead to costs at the higher end of the projected range. Our estimate of the costs for a single scheme to collect, sort, treat and recycle batteries is, therefore, the higher estimate in Table 1 (e.g. £8.2m in 2012).

46. By way of comparison, the total operational costs for other Member States, based on 9 countries, range between £592-£2222 per tonne (median £688 per tonne).

Compliance cost: communication

47. Costs for a national publicity campaign are considered in more detail under Option 2. The estimated cost of a coordinated communications campaign would be £1-5 million. However, if consumer participation started to wane and thus impacted on achieving targets, renewed communications efforts would be required, possibly on an annual basis with a cost of £0.5-1m.

Administrative costs

48. Producers will be required to provide sales data for batteries sold in the relevant year and the previous two years. The estimate below is based on figures provided by an existing compliance scheme on sales data submitted by WEEE producers in 2007. The large ranges can be attributed to the fact that some companies find reporting straight forward whilst

others, who may need to rely on a number of parties in order to collate data spanning 3 years, may need longer. It is assumed that as battery producers become more familiar with the reporting process these costs will reduce over time.

49. One estimate is that, on average, it takes 8 days (1 day = 8 hours) for producers to complete one data submission to a scheme. Given a current wage rate of £10.69 (reference – Annual Survey of Hours and Earnings 2005), this gives a cost of £684 per data submission. In addition, producers indicate that they spend on average £1200 on each data submission on other unspecified activities (understood to be IT systems or use of external consultants). These estimates (totalling £1884) do not include the time taken for general research into the regulations or into different producer schemes available, which again can vary significantly between producers.

50 The total administrative cost to producers for data submission is an estimated £2.8 million (based on 1,500 producers and a cost of £1884 per submission). As with sorting costs in the ERM study, it is in producers’ interests to reduce administrative burdens of data collection. We, therefore, have assumed that this figure could be halved.

Scheme set-up and administrative costs

51. Scheme set up and administrative costs are discussed in detail under Option 2. While a single scheme is likely to be able to benefit from economies of scale and not having to duplicate administrative functions, competition among multiple schemes is likely to bear down on administrative costs. We have, therefore, assumed that there would be no difference in the total administrative costs between multiple and single schemes.

Table 5: Estimated total costs to producers of meeting the Directive requirements under a single scheme (compared to baseline)

Year	Tonnes of batteries placed on market	Tonnes collected	Proportion collected	Collection, sorting and treatment costs (£m)	Costs of running scheme (£m)	Alternative cost of disposing of batteries (£m)
2008	24850	497	2%	1.7	9.8	1.4
2009	24850	497	2%	1.7	4.4	1.5
2010	24850	2485	10%	3.9	4.4	1.7
2011	24850	4473	18%	6.2	4.4	1.8
2012	24850	6213	25%	8.2	4.4	1.8
2013	24850	7455	30%	9.3	4.4	1.8
2014	24850	8698	35%	10.2	4.4	1.8
2015	24850	9940	40%	11.1	4.4	1.8
2016	24850	11183	45%	11.9	4.4	1.8
Discounted total costs to present day (£m)				53.5	39.7	13.6

Meeting accessibility requirements

52. Providing an accessible collection infrastructure to end-users, as required by the Directive, is likely to be easier under a single Scheme.

Environmental impact

53. A balance is needed between ensuring that there are sufficient collection points to achieve the targets and that these are accessible for the local population, whilst managing the negative environmental impact of multiple collection points. The Scheme would be able

to ensure that collection logistic networks are fully optimised nationally thus managing the negative impact to the environment from additional CO₂ emissions.

Social impact

54. This policy option takes account of rural proofing. Under the Directive the provision of accessible collection points must be proportionate to the population density of an area.

Option 2: Multiple Compliance Schemes

55. Each scheme will be responsible for:-

- Setting up a collection infrastructure to meet the requirements of their members under the Batteries Directive, in particular the collection targets;
- Running a publicity campaign to raise consumer awareness of the collection infrastructure that the scheme has set up;
- Registering producers and reporting these to the Environment Agency;
- Collating data that producers are required to provide and reporting this information to the Environment Agency;
- Arranging the necessary battery collection, treatment and recycling as required by the Directive, and channelling producer funding to finance this in accordance with producers' market share.

56.

There will be an approval process for compliance schemes. Each scheme will be required to submit an operational plan. This will form the basis of approval of schemes by the Secretary of State. The plan will set out how a scheme intends to discharge the obligations of its members for a period of three years. Once the plan is approved, the scheme will register with the Environment Agency. The scheme will submit an update to its operational plan annually.

57. Each scheme will pay a fee to the Agency to cover producer registration, data management and compliance monitoring of their members.

Economic impact

Benefits to stakeholders – producers

Potentially lower compliance cost – multiple schemes should deliver low cost compliance for producers as they will have the option of choosing one from a selection of schemes who are likely to take different approaches to fulfilling their members' obligations.

Potentially greater competition amongst collectors and treatment & recyclers – multiple compliance schemes will compete for collectors and treatment and recyclers and this will encourage price competition and market development in these sectors which will help keep costs down. Again, this will depend on the extent to which there is competition between collectors/ firms that treat and recycle batteries.

Recognised model – the multiple scheme approach is in line with previous producer responsibility systems such as those for waste electrical and electronic equipment and for packaging.

Costs to stakeholders – producers

58. Our assessment of collecting, treatment, and recycling, communication, administration, set up and monitoring and enforcement costs were shown in the assessment of option 1. In general terms these are also valid for the multiple schemes options but with some differences. These differences are explained in the paragraphs that follow.

Compliance cost: collection, sorting and recycling

59. We expect collection, sorting and recycling costs to be significantly lower under the multiple scheme approach. This judgement is supported by experience under the Waste Electrical and Electronic Equipment (WEEE) regulations. Information from one compliance scheme suggests for example that transport costs for rural local authorities collecting fridges have halved and that treatment costs for TVs and monitors have been reduced by the same amount. Costs do vary between schemes and between different categories of WEEE but there seems to be a strong case that competition is bearing down on costs (and improving treatment standards) and that these trends will continue.

60. For batteries, there was even under a single scheme, some potential for competition among treatment facilities and recyclers to provide services to the scheme. However, there would only have been in at least one of the scenarios one buyer of services. This meant that producers would have had little choice even if the single scheme was inefficient. Multiple schemes will drive schemes to act efficiently in purchasing transport, sorting treatment and recycling services (or risk losing members to other schemes). We, therefore, expect multiple schemes to lead to costs at the lower end of the projected costs shown in Table 1. In 2012, for example, we estimate that the collection, treatment and recycling costs will be £6.6m. The figures in Table 1 suggest that for the period 2010-2016 the multiple schemes approach could save producers £13.0m.

Compliance cost: communication

61. The Government will carry out some publicity in advance of the first compliance period. However, schemes will need as required by the Directive to fund publicity for consumers. We estimated – under the single scheme obligations – the cost of a one-off campaign as being between £1-5 million. If consumer participation started to wane and thus impacted on achieving targets, renewed communications efforts would be required, possibly on an annual basis with a cost of £0.5-1m. Schemes will need to carry out marketing to inform consumers about the collections that the scheme provides. This cost will vary depending on the type of collections that a scheme undertakes but we expect it for example to cover providing branded material for stores, working with local authorities on material for householders etc.

62. Costs would be incurred under the following areas:

- Marketing which includes the cost of preparing the collection devices (labelling of boxes/bags), leaflets, posters, etc, and distributing these to householders;
- Public Relations which covers activities such as photography, press releases, articles in the trade and local press, radio and TV interviews, promotions, promotional staff. In broad terms the figures would be: less than £1 million for a non-broadcast campaign (i.e. excluding TV or radio); £1 million to £3 million for a radio and other media (excluding TV) campaign, which would increase to between £3 million and £5 million to include TV advertising.

Administrative cost

63. The administrative costs per producer in supplying data should be no different to that under the single scheme. Our estimate, therefore, is that it will cost £684 per data submission with - assuming that there are 1,500 battery producers – a total administrative cost to producers of £2.8 million. We assume – as per Option 1 - that battery producers will become more familiar with the reporting process and these costs will reduce over time. We, therefore, assume that this figure could be halved.

Scheme set-up costs

64. Scheme set-up costs will vary depending on a number of factors including:

- Size of proposed scheme
- Whether it is part of an existing infrastructure (e.g. existing Civic Amenities; IT database systems)
- Whether it is an extension of any other business such as collectors or recyclers
- Geographic coverage

65. The costs for a medium to large scheme operating over a period of a year prior to the implementation date are estimated to be between £300k and £400k. This cost is based on the expansion of a scheme to cover batteries that is already in existence. These costs include legal, web sites & IT, marketing and member recruitment, member training seminars, collection and recycling contract set up, and overheads. This also includes the compliance member administrative cost (contact centre and telephone services) of around £50k. The registration fee would be additional to this estimate. Equivalent costs for a smaller scheme with fewer members would be more in the region of around £100k. The scheme would also require nationwide transport related marketing activities, including transport containers.

Scheme administration costs

67. Schemes will be charged an application fee of £17,000. We assume that there will be three schemes so that the total application fee will be £51,000.

The Environment Agencies have calculated that they need to recover costs of £490k from schemes in relation to the costs of regulating schemes. The agencies' working assumption is that there may be three schemes. The charges therefore can be broken down as follows:

- a) The Agency's proposed standing annual charge for portable batteries schemes is £118k. Costs recovered = £118k * three schemes = £354k. Specific activities include:
 - Registration of Members
 - Scrutiny of the operational plan and monitoring of performance against it
 - Receipt and processing of data
 - Assessment of compliance
 - Development of IT system and guidance
- b) In addition, producers above the de-minimis exemptions for small producers will be individually monitored. There will be an additional annual charge on schemes of £680 for each producer member of a scheme. Our best guess is that there may be about 200 such producers in the UK. This estimate is very uncertain because of the lack of comprehensive sales data. We estimate therefore that the costs recovered in respect of the per producer charge on schemes will be £680 * 200 = £136k.

As explained in the separate section on small producers, these estimated 1,300 producers will pay an annual fee of £30 (i.e. a total of £39,000 a year).

Table 6: The overall regulatory costs (UK)

		2009/10	2010/11	2011/12	2012/13
Applications	Portable	£51,000	£0	£0	£0
Scheme monitoring	Portable	£490,000	£490,000	£490,000	£490,000
Small producer	Portable	39,000	39,000	39,000	39,000
Reprocessor / exporter approval/ monitoring	Portable	£29,235	£29,235	£29,235	£29,235
Totals	Portable	£609,235	£558,235	£558,235	£558,235

Table 7: Summary of the annual and one off costs

	Estimated range (£m)	
	Low	High
Initial Costs - 1 year only		
Start-up Communication	1	5
Scheme setup costs	0.3	0.4
Total set-up costs	1.3	5.4
Annual Costs		
Monitoring & enforcement	0.6	0.6
Communications	0.5	1
Administration	1.4	2.8
Total on-going costs	2.5	4.4

Table 8: Estimated total costs of meeting the Directive requirements (compared to baseline)

Year	Tonnes of batteries placed on market	Tonnes collected	Proportion collected	Collection, sorting and treatment costs (£m)	Costs of running scheme (£m)	Alternative cost of disposing of batteries (£m)
2008	24850	497	2%	1.5	3.8	1.4
2009	24850	497	2%	1.5	2.5	1.5
2010	24850	2485	10%	3.3	2.5	1.7
2011	24850	4473	18%	5.1	2.5	1.8
2012	24850	6213	25%	6.6	2.5	1.8
2013	24850	7455	30%	7.4	2.5	1.8
2014	24850	8698	35%	8.0	2.5	1.8
2015	24850	9940	40%	8.6	2.5	1.8
2016	24850	11183	45%	9.0	2.5	1.8
Discounted total costs to present day (£m)				42.8	20.7	13.6

Unintended consequences

- Schemes may not be willing to set up accessible collection points in remote areas. Also, once a scheme has achieved its collection targets it may be unwilling to service collection points that do exist in difficult to access or remote regions, leaving these sites uncleared.
- Co-operation between schemes may be difficult to achieve with multiple schemes; particularly in the areas of managing collection sites and communications.
- In seeking out the most cost-efficient compliance scheme, producers may neglect to focus on the main requirement of the Directive which is to meet the targets.
- A multiple scheme approach may result in small schemes being established that may not be viable in the long term. While, the market may eventually correct itself leaving only the more cost effective schemes, this could, depending on the length of time this process takes, increase the risk of not meeting the targets. In addition, too many small schemes may limit effective co-operation between schemes.

Environmental impact

68. Co-operation between Schemes will be needed to ensure that the environmental impact of transport to collect batteries is kept to a minimum.

69. Publicity campaigns will need to be joined-up to ensure higher consumer participation in battery collection and the reduction of batteries going directly to landfill.

Social impact

70. Enabling schemes to compete for collection sites may result in limited availability of accessible collection points for end users. Less productive or remote collection points may be considered less desirable to schemes wanting to minimise on costs and maximise quantities of batteries collected. However, again, this may be avoided with more cooperation between schemes.

Costs to Government

71. The environment agencies will be responsible for ensuring that batteries producers who should register, do so. There is no difference between the single and multiple schemes options in estimated costs which we expect to be an annual cost of about 130k for England

and Wales, £13K in Scotland and £6.5k in Northern Ireland. This will be met by Government not by producers. Specific activities include: the identification of unregistered producers; checking the business and regulatory status of potential non-compliance; checking businesses through site visits and inspections by Area staff; and taking appropriate enforcement action against businesses which fail to comply.

Conclusion on multiple and single scheme options

72. The analysis above suggests that the bulk of producer costs will be for collection, sorting, treatment and recycling of batteries. We expect multiple schemes to lead to lower costs in this area because of the element of competition between schemes.

D) SMALL PRODUCERS

73. Under the provisions of the Directive, all producers are required to register with a compliance scheme. However, Article 18 of the Directive gives Member States discretion to exempt small producers from meeting the collection, treatment and recycling costs, provided that this does not impede the proper functioning of collection and recycling schemes. The UK proposes to take advantage of this exemption.

The approach

74. The proposal is to exempt small producers from financing collection, treatment and recycling. The Government proposes to exempt producers who put less than 1 tonne of batteries on the UK market. These producers would still need to join a scheme and to report their sales.

Economic impact

Benefits to stakeholders – producers

75. This proposal aims to avoid a disproportionate impact on small producers. Costs of enforcement, monitoring and administration will be potentially lower as a result of the exclusion of all small producers.

Costs to stakeholders – producers

76. The proposal could place another financial burden on other producers. The UK batteries market is estimated to be in the range of 25-30,000 tonnes per year (we have used the existing estimates of 24,849 tonnes for the purposes of this Impact Assessment). The market is dominated by a small number of large producers with a large number of smaller companies supplying niche markets.

77. A producer of 1 tonne of batteries would have an obligation to collect, treat and recycle 0.25 tonnes of batteries (25%) in 2012. The estimate in this IA is that, under the multiple schemes approach, sorting, treatment and recycling costs in 2012 will be £800 per tonne.

78. Industry figures suggest that 99.9% of the batteries market is supplied by large producers. If this is the case, the extra collection, treatment and recycling that producers would have to fund (and the costs of doing so) would be negligible. However, data from Belgium and the Netherlands suggests that 1 tonne exemption might – if replicated in the UK - cover 1-2% of the market. If so, the extra costs would be shared among the large producers in line with their market share. If we assume there are 200 or so large producers, the average extra cost for such a producer in 2012 to deal with the batteries that would otherwise have been dealt with by small producers would be £250-£600.

79. However, there is great uncertainty about the number of UK batteries producers and the number of small producers. The batteries regulations do not, therefore, increase the obligations on larger producers to take into account the small producers' exemption. We will need to review this when we receive actual sales data from producers, large and small.

Unintended consequences

Producers may try to 'split' up their companies to qualify for the small producer 'threshold'.

Environmental impact

80. No change – the same volume of batteries will be collected, treated and recycled.

E) INTERIM TARGETS

81. There must be a huge increase in the amount of batteries collected if we are to meet the targets in the Directive. Some stakeholders have argued that interim targets would be useful to assess progress towards the Directive's targets. The Government agrees.

The approach

82. We propose to set interim targets that schemes should collect 10% of their members' market share in 2010 and 18% in 2011. We discussed different targets with stakeholders at a workshop last year. The consensus was that a linear progression as proposed was

sensible. We also consulted on the interim targets as part of the consultation on draft regulations at the beginning of 2009. No alternative targets were proposed.

The fact that, from 1 January 2010, producers are required to accept batteries collected by distributors argues against too low a target in 2010. The targets are soft ones to help schemes and Government assess progress. If the schemes could exceed the interim targets simply by accepting batteries from distributors, producers would not get the information they need to judge what they need to do to meet the Directive targets which will apply to them from 2012 onwards.

Schemes will be assessed against these targets. If the scheme is failing badly, its approval could be withdrawn. However, the main purpose of the interim targets is to assess whether schemes are on target and to identify action they might take if it looks like the 2012 or 2016 target will not be met. The targets for 2013, 2014 and 2015 will be 30%, 35% and 40% respectively.

Economic impact

Benefits to stakeholders – producers

83. Reduces high risk of non-compliance, allows schemes and producers to identify where action needs to be taken

Costs to stakeholders – producers

84. We expect that producers and schemes will start putting in place collection measures to ensure that they can meet the 2012 targets. In theory, producers and schemes could do little or nothing to increase collection until 2012 and then not increase collection again until 2016.

85. We do not believe that it is realistic to move from the current very low rate of collection to meeting the Directive's targets in a single year. However, if it were possible to do without interim targets, then schemes could save money in the years 2009-2011 and 2013-2015 by not increasing battery collection in these years. This is illustrated in the following table:

Table 9 – Financial Impact of no interim targets

Year	Tonnes of batteries placed on market	Tonnes collected	Proportion collected	Cost of collection, sorting and treatment (£m)		Cost of running scheme (£m)		Alternative cost of disposing of batteries (£m)
				High	Low	High	Low	
2008	24850	0	0%	1.4	1.4	0.0	0.0	1.4
2009	24850	0	0%	1.5	1.5	0.0	0.0	1.5
2010	24850	0	0%	1.7	1.7	0.0	0.0	1.7
2011	24850	0	0%	1.8	1.8	0.0	0.0	1.8
2012	24850	6,213	25%	8.2	6.6	9.8	3.8	1.8
2013	24850	6,213	25%	8.2	6.6	4.4	2.5	1.8
2014	24850	6,213	25%	8.2	6.6	4.4	2.5	1.8
2015	24850	6,213	25%	8.2	6.6	4.4	2.5	1.8
2016	24850	11,183	45%	11.9	9.0	4.4	2.5	1.8
NPV				42.3	34.9	22.5	11.2	13.6
Discounted total increase in cost relative to baseline disposal (£m)				High	51.1			
				Low	32.4			
Discounted total reduction in cost relative to interim targets scenario (£m)				High	28.5			
				Low	17.4			

*See also Table 1.

Unintended consequences

86. If schemes do not collect until 2011 there is a higher risk of the UK not meeting its overall collection targets. Not using interim targets therefore carries a higher risk of infraction which is likely to be at least £8 million (i.e. charge from the European Commission for infraction to a Member State). This is explained in more detail in the Annex.

Environmental impact

87. Since schemes will collect from 2009 rather than 2011 under the interim targets, there will be an additional environmental benefit. The following tables display this, showing a net increase in partial environmental benefits valued worth £2.1m in present value terms.

Table 10: Partial environmental impact with interim targets



Table 11: Partial environmental impact of without interim targets

* A non-exhaustive range of environmental benefits were valued in the ERM report - these focused mainly on human health impacts, but did not consider wider impacts on ecosystems or biodiversity.

F) DISTRIBUTOR REQUIREMENTS

The approach

88. Retailers supplying new portable batteries will be required to take back any type of waste portable batteries free of charge and to inform consumers that they take back batteries. However, shops will not have to take back batteries if they sell less than 64 kilogrammes of batteries per year.

89. We estimated that the CO₂ emissions saved by recycling 4kg of portable batteries is equal to the emissions of a vehicle travelling 5 kilometres. Therefore, in order for it to be worthwhile for a store to collect batteries we need to take into account how far the batteries will need to be transported to a collection hub as well as the volume of batteries collected. To calculate the de-minimis, we have assumed that there will be quarterly collections from retail premises. Distributors are unlikely to receive the same number of batteries back that they sell. The exemption assumes that a typical shop might receive back about a quarter of the amount they sell.

90. In the first consultation, we considered requiring distributors to take batteries to consolidation points. However, the requirements of other waste legislation and the adverse environmental

impacts of many retailers transporting small quantities of batteries has led us to decide that the collection of batteries from distributors should be funded by producers and organised by compliance schemes.

Economic Impact

Benefits to stakeholder - Distributors

91. Distributor take-back will not impact significantly on distributors, since the only cost to be borne is the space in the shop front for a waste portable batteries container. Furthermore, the exemption for small retailers aims to avoid a disproportionate impact on small shops who have a limited floor area and only sell small quantities of batteries a year.

Benefits to stakeholder - producers

92. Battery collection by retailers will help producer schemes to achieve their targets. Retailers provide a convenient and accessible way for consumers to return batteries. The small distributor exemption will mean that compliance schemes will be able to direct their resources to the most effective means/types of battery collection, rather than having to collect from many small shops collecting only a few batteries each.

Costs to stakeholders – distributors

93. The approach could lead to a disparity between retailers (distributors) in the meeting the costs of the regulations. For example, some producers (i.e. distance sellers) who are also distributors may not have commercial premises to offer take back. In these instances alternatives take back routes such as postal service could be offered to customers, at a different cost than for a distributor that is able to offer in-store take back. Similarly, some distributors may receive a greater proportion of customers using in-store take back and this could result in higher cost to the business compared to quieter less frequented stores.

Costs to stakeholders – producers

94. The requirement to collect from distributors above the exemption limits to some extent the freedom of schemes to choose the collection methods that are most cost-effective or otherwise suit them best.

Unintended consequences

- Distributors who sell only a small quantity of batteries may consider that the requirements of the obligation outweigh the benefits of selling batteries and decide not to sell batteries.
- The exemption for small distributors could lead to less coverage of remote areas. However, the larger distributors and local authority Civic Amenity sites should still provide an accessible network (taking into account population density).

Environmental impact

95. Larger retailers are likely to use back-haul facilities to their distribution centres and collection points funded by the scheme can be incorporated into the overall collection network, so it is likely that this proposal will result in a more efficient collection network and fewer transport emissions than if all retailers had to take back batteries.

96. Requiring all retailers to take back batteries could lead to more road movements involving small quantities of batteries and a significant increase in emissions from road

transport. This implies that a very large number of deposit points would be required for small retailers in order to prevent net environmental cost.

97. Assuming that a collector from a small retailer had to travel 5km to reach a consolidation point, it would have to deposit between 140 to 230 AA batteries in order to ensure that the benefits of recycling are not offset by the carbon emissions from transport. Many small retailers are unlikely to collect this number of batteries, therefore net environmental costs would be incurred.

Social impact

98. Distributors provide a convenient way for people in remote areas or people who cannot drive to recycle batteries. The exemption for small retailers will lead to some decrease in the coverage of collection schemes but we are not able at this stage to highlight any areas that may be particularly affected.

1. Interim targets and Infraction

99. The interaction between interim targets and potential infraction risk is an important one. Whilst interim targets may demand higher collection and treatment of batteries than might otherwise be collected in the absence of these targets, they may also increase the likelihood of meeting targets in the EU target years of 2012 and 2016, thereby reducing the potential risk and cost of infraction.

100. The main evidence base presented the costs of and benefits of interim targets relative to meeting targets just in time, i.e. collecting 25% and 45% of batteries just in time in 2012 and 2016 respectively. This seems unlikely to be successful, however it gives a very conservative extreme of the cost of imposing interim targets. The table below shows these additional costs. It is assumed that any start-up costs as well as annual cost are delayed until 2012 in the “just in time” scenario until then batteries are disposed of as in the baseline.

Table 12: Net additional cost of interim targets over “just in time”

	Low (£m)	High (£m)
Total discounted cost of interim targets over and above "just in time"	17.4	28.5
Total discounted benefits of interim targets over and above "just in time"	2.0	2.0
Net additional cost of interim targets over "just in time"	15.4	26.5

101. As compared to the extreme just in time scenario, this suggests *unnecessary* (in terms of meeting EU targets) battery collection encouraged by interim targets would cost society £15.4m to £26.5m. However, this is unrealistic as it is unlikely that there would not be a more gradual increase in battery collection in the run up to target years.

102. This also fails to consider the risk of failure in “just in time scenario”. The minimum infraction fine for non-compliance is expected to be £8m per year, which would be borne by the government.

103. If interim targets make compliance with the directive 50% more likely, we could attach a monetary value to this benefit of £4m (in nominal terms) in each of the years that the UK avoids a fine.

104. Discounted to make this comparable to the present day costs and benefits presented in the tables above the equivalent value of a 50% reduction in the likelihood of infraction fines is presented below.

Table 13: Benefit of reduced infraction risk from setting interim targets



105. This reduces how we perceive the costs to society as a whole of interim targets. The difference in costs relative to a “just in time” scenario are very likely to be significant over-

estimates and interim targets significantly reduce the likelihood of missing the collection targets, and therefore fines in any years after 2012. This means it becomes more likely that interim targets will in fact provide the best option.

2. Increases in the number of batteries placed on the market

106. In the absence of other evidence the ERM report assumed zero battery growth. This assumption has also been adopted throughout the previous evidence base.

107. The tables below show the impact of a growth in battery volumes placed on the market of 2.5% per year.

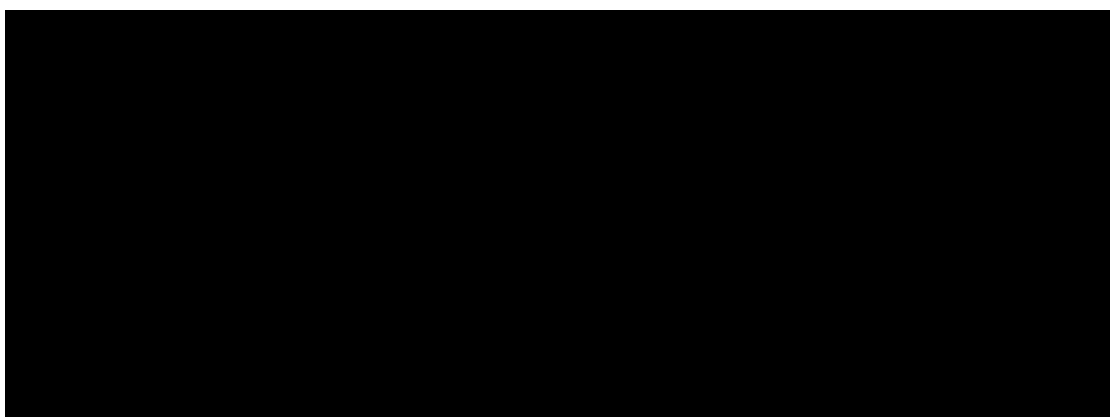
108. This translates through to the amount of batteries required to be collected through a moving average. The proportion of batteries required to be collected relates to the average of the number of batteries placed on the market in the current and preceding 2 years.

Table 14: Impact on costs of a growth in batteries placed on the market

Year	Tonnes of batteries placed on market	Tonnes collected	Proportion Collected	Cost of collection, sorting and treatment (£m)		Cost of running scheme (£m)		Alternative cost of disposing of batteries (£m)
				Low	High	Low	High	
2006**	24850							
2007**	24850							
2008	24850	497	2%	1.54	1.65	3.8	9.8	1.4
2009	25471	501	2%	1.55	1.66	2.5	4.4	1.5
2010	26108	2548	10%	3.36	4.00	2.5	4.4	1.8
2011	26761	4700	18%	5.27	6.46	2.5	4.4	1.9
2012	27430	6692	25%	6.92	8.62	2.5	4.4	2.0
2013	28116	8231	30%	7.80	9.89	2.5	4.4	2.0
2014	28819	9843	35%	8.55	11.04	2.5	4.4	2.1
2015	29539	11530	40%	9.27	12.19	2.5	4.4	2.1
2016	30277	13295	45%	9.42	12.81	2.5	4.4	2.2
Discounted total costs to present day (£m)				44.9	56.9	20.7	39.7	14.8

** Assumptions on battery volumes for 2006/2007 are included here as assuming changes in battery volumes on the market the level of collection should be based on an average of the past 3 years.

Table 15: Impact on benefits of a growth in batteries placed on the market



* A non-exhaustive range of environmental benefits were valued in the ERM report - these focused mainly on human health impacts, but did not consider wider impacts on ecosystems or biodiversity

109. As can be seen the impact is relatively small, the present value impact on the costs and benefits are presented below. The increases in costs are partially offset by the increase in the measured (incomplete) environmental benefits.

110. The existence of economies of scale in treatment and the uniform nature of the environmental benefits suggests that the net benefit of the policy will be less than proportionately impacted by growth in battery volume.

Table 16: Impact on costs of a 2.5% growth in battery volumes

	Low (£m)	High (£m)
Total discounted costs relative to no battery growth	1.0	2.3
Total discounted benefits relative to no battery growth	0.8	0.8
Net overall costs	0.2	1.5

SPECIFIC IMPACT TESTS

Legal Aid

111. It is not clear to what extent those who would be subject to the Batteries and Accumulators Directive are eligible for legal aid, but as implementation of the Directive is not expected to have any material effect on the criminal or civil liability of those who are subject to the obligations of the Directive, it should not have any impact on legal aid in the UK.

Race Equality Assessment

112. The Batteries and Accumulators Directive does not have as one its aims race equality explicitly. However, one of the aims of implementation of the Directive is to provide equal, and high, levels of environmental and health protection across the UK, irrespective of race.

Disability Equality

113. The Batteries and Accumulators Directive does not have disability equality as one of its aims explicitly, and it is not believed that implementation of the Directive will have a significant impact in this area.

Gender Impact Assessment

114. The Batteries and Accumulators Directive is not aimed at overcoming gender inequalities or eliminating barriers to inequality, and it is not believed that implementation of the Directive will have a significant impact in this area.

Human Rights

115. Implementation of the Batteries and Accumulators Directive is not expected to impact on the rights and freedoms of individuals as set out in the Human Rights Act 1998.

Rural Proofing

116. Implementation of the Batteries and Accumulators Directive is not expected to have any significant impacts on rural areas or circumstances because it applies to all batteries and spent batteries wherever they are used or are discarded as waste.

TRANSPOSITION NOTE

setting out the main elements of the transposition of Directive 2006/66/EC of the European Parliament and Council on batteries and accumulators and waste batteries and accumulators (“the Directive”) in the Waste Batteries and Accumulators Regulations 2009 (“the Regulations”).

The Directive seeks to improve the environmental performance of batteries and accumulators and of the activities of all economic operators involved in the life cycle of batteries and accumulators, e.g. producers, distributors and end-users and, in particular, those operators directly involved in the treatment and recycling of waste batteries and accumulators. The Directive establishes:

(1) rules regarding the placing on the market of batteries and accumulators (“the Internal Market provisions”) and (2) specific rules for the collection, treatment, recycling and disposal of waste batteries and accumulators to supplement relevant Community legislation on waste and to promote a high level of collection and recycling of waste batteries and accumulators (“the producer responsibility provisions”).

Separate legislation has already been brought forward – the Batteries and Accumulators (Placing on the Market) Regulations 2008 (S.I. 2008/2164) – which (with one exception) transposed the Internal Market provisions of the Directive. Separate legislation will be brought forward to implement Article 21(2) of the Directive (as noted below).

These Regulations do what is necessary to implement the producer responsibility provisions of the Directive, including making consequential changes to domestic legislation to ensure its coherence in the area to which they apply.

Certain provisions of the Directive relating to exemptions from hazardous waste legislation, the treatment of waste batteries and accumulators and a ban on the disposal of waste industrial and automotive batteries in a landfill or by incineration are being transposed in whole or in part by separate legislation made on a devolved basis.

The Directive divides batteries into three categories: automotive batteries, industrial batteries and portable batteries and different provisions of the Directive apply to the different categories of battery. Each of these categories is defined in regulation 2(1).

The Directive applies to both batteries and accumulators (i.e. rechargeable batteries) but, in this Note, as in the Regulations, batteries and accumulators are together referred to simply as batteries. “Battery” is defined in regulation 2(1).

Article of the Directive	Objectives	Implementation in the Regulations
Article 4	Prohibitions relating to the use of mercury and cadmium in batteries placed on the market from 26 September 2008.	Not relevant to these Regulations; implemented by Regulation 4 of the Batteries and Accumulators (Placing on the Market) Regulations 2008.
Article 5	Encouraging increased environmental performance of batteries.	Regulation 71

Article 6	Requirement for non-compliant goods to be withdrawn from the market.	Not relevant to these Regulations; implemented by Regulations 13 and 14 of the Batteries and Accumulators (Placing on the Market) Regulations 2008.
Article 7	Imposition of an overarching objective of maximising the separate collection of, and minimising the disposal as mixed municipal waste of, waste batteries having regard to environmental impact of transport.	<p>The Regulations generally implement this obligation as regards all three types of batteries.</p> <p>Regulation 70 further implements Article 7 in relation to portable batteries.</p> <p>There is no similar implementation as regards waste industrial and automotive batteries as there is a ban (in regulation 56) on the disposal of such batteries in a landfill or by incineration which in effect means that all such batteries will have to be treated and recycled.</p>
Article 8(1) and (2)	<p>Requirements for the establishment of collection schemes for waste portable batteries.</p> <p>Schemes to</p> <ul style="list-style-type: none"> • include accessible collection points for end-users of portable batteries • ensure free take back of batteries by distributors of such batteries • not to involve any requirement to buy a new battery when a waste battery is discarded 	<p>Implemented generally by Parts 2 to 4 and 6 of the Regulations, in particular:.</p> <p>Part 6 makes provision for the approval of battery compliance schemes. These are obliged by regulation 19 to finance the collection, treatment and recycling obligations of their producer members (which are set out in regulations 7 and 8).</p> <p>The criteria for approval of battery compliance schemes are set out in Part 3 of Schedule 3.</p> <p>Regulations 31 and 32 implement the requirement for accessible collection points and for distributors of portable batteries to take back waste portable batteries free of charge and without any obligation to buy a new battery.</p>
Article 8(1) final paragraph	Collection points to be exempt from the registration and permitting requirements of Directive 2006/12/EC and Directive 91/689/EEC on hazardous waste	Collection points are excluded from environmental permitting requirements in England and Wales by regulation 92 and paragraph 2(5) of Schedule 8 which amend the Environmental Permitting (England and Wales) Regulations 2007 (SI 2007/3538). Separate legislation is also to be made by the Scottish Ministers and the Northern Ireland Government.
Article 8(3)	<p>Requirement to ensure that producers of industrial batteries take back waste industrial batteries from end-users, regardless of chemical composition and origin.</p> <p>Independent third parties to be permitted to collect industrial batteries</p>	<p>Regulation 35</p> <p>No direct implementation required. The Regulations do not prevent independent collection of waste batteries.</p>

Article 8(4)	<p>Requirement for the establishment of collection schemes for waste automotive batteries</p> <p>Collection of batteries from private non-commercial vehicles not to involve a charge to end-users or any obligation to buy a new battery</p>	<p>Regulation 36</p> <p>Insofar as collection of waste automotive batteries from private non-commercial vehicles is concerned, the requirements are implemented by existing waste management legislation, in particular section 51 of the Environment Protection Act 1990.</p>
Article 9	<p>Optional provision permitting Member States to use economic instruments to promote the collection of waste batteries or the use of less polluting batteries.</p>	<p>Not implemented</p>
Article 10	<p>Requirements in respect of minimum targets for collection of waste portable batteries. Member States to</p> <ul style="list-style-type: none"> • calculate the collection rate in the fifth year after the coming into force date of the Directive • achieve minimum rates of 25% in 2012 and 45% in 2016. • monitor collection rates • report to the European Commission 	<p>Implemented generally by Parts 2, 3, and 4.</p> <p>In particular regulation 8 establishes a required level of collection in relation to each producer and regulations 11-13, 16-18, 20 and 22-25 ensure that the information is available to competent authorities to monitor and calculate collection rates.</p>
Article 11	<p>Removal of waste batteries</p>	<p>Not relevant to these Regulations; implemented by Regulation 7 of the Batteries and Accumulators (Placing on the Market) Regulations 2008.</p>

<p>Article 12(1)</p>	<p>Requirement to ensure</p> <ul style="list-style-type: none"> • producers or third parties set up schemes using best available techniques, in terms of the protection of health and the environment, to provide for the treatment and recycling of waste batteries • all identifiable batteries collected under the Directive undergo treatment and recycling through schemes which comply as a minimum with Community legislation, in particular as regards health, safety and waste management <p>Option for Member States to dispose of some portable batteries containing cadmium, mercury or lead in landfills in certain circumstances</p>	<p>Implemented generally by regulations 16(2), 21 and 38, Part 7 and Schedule 4.</p> <p>In particular, regulation 63 and Part 2 of Schedule 4 implement the requirements imposed by article 12(1) regarding use of best available techniques and compliance with Community legislation.</p> <p>The option for Member States to dispose of some portable batteries containing cadmium, mercury or lead in landfills in certain circumstances has not been implemented.</p>
<p>Article 12(2)</p>	<p>Requirement to ensure treatment meets certain minimum treatment requirements set out in Annex III, Part A of the Directive.</p>	<p>Implemented generally by regulations 16(2), 21 and 38, Part 7 and Schedule 4 as in the case of the Article 12(1) requirements. In particular regulation 63 and Part 2 of Schedule 4 implement the requirements for minimum treatment requirements to be met.</p> <p>Also implemented by amendments to environmental permitting legislation. In England and Wales these amendments are in regulation 92 and paragraph 2 of Schedule 8, amending the Environmental Permitting (England and Wales) Regulations 2007 (S.I. 2007/3538). Separate environmental permitting legislation is to be made in Scotland and in Northern Ireland.</p>
<p>Article 12(3)</p>	<p>Requirement to ensure that batteries collected together with waste electrical and electronic equipment on the basis of Directive 2002/96/EC on waste electrical and electronic equipment (the WEEE Directive”) are removed from that waste equipment.</p>	<p>Not implemented in these Regulations. An equivalent requirement appears in Article 6(1) and Annex II of the WEEE Directive and has already been implemented. In England and Wales this implementation is in paragraph 3(1) of Schedule 12 to the Environmental Permitting (England and Wales) Regulations 2007 (S.I. 2007/3538).</p>

Article 12(4)	Requirement that recycling of waste batteries meets certain minimum recycling efficiencies set out in Annex III, Part B of the Directive.	Implemented generally by regulations 16(2), 21 and 38, Part 7 and Schedule 4 and in particular by regulations 63 and Part 2 of Schedule 4.
Article 12(5)	Requirement to report to European Commission on levels of recycling achieved	Implemented by administrative means.
Article 13	Encouraging the development of new recycling and treatment technology.	Regulation 72
Article 14	Prohibiting the disposal in a landfill or by incineration of waste industrial and automotive batteries.	Implemented in England and Wales and Northern Ireland by regulation 56. Separate legislation will also be made in Scotland and Northern Ireland in relation to this Article.
Article 15	To permit treatment and recycling of waste batteries outside the respective Member State or the Community, provided that shipment of such batteries is in compliance with Council Regulation (EEC) No 259/93. To provide that waste batteries exported out of the Community only count towards the fulfilment of the obligations and efficiencies required by Annex III to the Directive if the exporter can prove that the treatment and recycling took place under conditions that are equivalent to those of the Directive.	Regulation 259/93 is implemented by the Transfrontier Shipment of Waste Regulations 2007 (S.I. 2007/1711). Regulations 16(2), 21 and 38, Part 7 and Parts 2 and 4 of Schedule 4 implement the requirements to permit export and to ensure that waste batteries exported are treated and recycled in accordance with the standards laid down by the Directive.
Article 16(1)	Provision to ensure producers of batteries, or third parties acting on their behalf, are responsible for financing the net cost of collection, treatment and recycling of waste batteries.	<u>Portable batteries</u> Parts 2, 3 and 4 implement the requirement in Article 16(1) in relation to producers of portable batteries. Implemented, in particular, by regulations 7, 8, 16(2), 19, 20, 21 and 32. <u>Industrial and automotive batteries</u> Implemented by Part 5, in particular by regulations 35, 36 and 38.

Article 16(2)	To ensure that the implementation of the financing obligation in Article 16(1) avoids any double charging of producers in the case of batteries collected under schemes set up under Directive 2000/53/EC on end-of life vehicles or under the WEEE Directive.	No specific implementation required beyond implementation of Article 16(1)
Article 16(3)	To ensure producers or third parties acting on their behalf, finance the net costs of public information campaigns on the collection, treatment and recycling of waste portable batteries.	Regulation 19(1)(c)
Article 16(4)	To prohibit the costs of collection, treatment and recycling being shown separately to end-users at the time of sale of new portable batteries.	Regulation 34
Article 16(5)	To permit producers and users of industrial and automotive batteries to conclude agreements stipulating financing arrangements other than those referred to in Article 16(1).	Regulation 37
Article 17	Requirement for all producers to be registered. Registration to be subject to the same procedural requirements in each Member State.	Regulations 26 to 30 and 77 in relation to producers of portable batteries. Regulations 42 to 46 and 73 in relation to producers of industrial and automotive batteries. Also regulation 76 which applies to all types of battery.
Article 18	A provision by which Member States may exempt small producers from the financing obligations established under Article 16(1) of the Directive, subject to approval from the European Commission.	Regulations 7(3) and 9(2)
Article 19	Ensuring that all economic operators may be involved in the collection, treatment and recycling of waste batteries.	Regulation 33 in respect of portable batteries. Indirectly implemented for industrial and automotive batteries in that the Regulations do not prevent any person from independently collecting such waste batteries for treatment and recycling and any person may apply to be an approved battery treatment operator or exporter. Also waste disposal authorities have rights to free take back and collection of waste industrial and automotive batteries under regulations 35 and 36 respectively.

Article 20	<p>Ensuring that end-users of batteries are fully informed of</p> <ul style="list-style-type: none"> a) the potential effects on the environment and human health of the substances used in batteries; b) the desirability of not disposing of waste batteries as unsorted municipal waste and of participating in their separate collection so as to facilitate treatment and recycling; c) their role in contributing to the recycling of waste batteries; d) the collection and recycling schemes available to them; and e) the meaning of the crossed out wheeled bin symbol shown in Annex II to the Directive and the chemical symbols “Hg”, “Cd” and “Pb”. 	Regulations 19(1)(c) and 68.
Article 21 (1) and (3) to (6)	Labelling of batteries with recycling and chemical symbols	Not relevant to these Regulations; implemented by Regulation 5 and 6 and Schedule 1 of the Batteries and Accumulators (Placing on the Market) Regulations 2008.
Article 21(2)	Labelling of batteries with their capacity.	Not relevant to these Regulations; to be implemented by amendment to separate legislation following adoption of the Commission Decision referred to in the Article.
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.	<p>Implemented in relation to contravention of requirements of the Directive implemented by these Regulations by Parts 12 and 13.</p> <p>Implemented by Regulation 16 of the Batteries and Accumulators (Placing on the Market) Regulations 2008 in relation to contraventions of Article 4, 11 and 21(2), (3), (4), (5) and (6).</p>
Article 27	To permit Member States to transpose Articles 8, 15 and 20 of the Directive by means of voluntary agreements provided that the objectives of the Directive are achieved.	Not implemented

and

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