

**EXPLANATORY MEMORANDUM TO**  
**THE PACKAGING (ESSENTIAL REQUIREMENTS) (AMENDMENT)**  
**REGULATIONS 2006**

**SI 2006 No. 1492**

1. This explanatory memorandum has been prepared by the Department of Trade and Industry and is laid before the House of Commons by Command of Her Majesty.

**2. Description**

2.1 These Regulations amend the Packaging (Essential Requirements) Regulations 2003 (“the 2003 Regulations”) in two places.

2.2 The first amendment is to the definition of “packaging” to bring this into line with the definition in Directive 2004/12/EC amending Directive 1994/62/EC on packaging and packaging waste.

2.3 The second amendment is to give effect to Commission Decision 2006/340/EC (OJ L125, 12.5.06, p. 42) (“the 2006 Commission Decision”). The 2006 Commission Decision amended Decision 2001/171/EC of the European Parliament and of the Council for the purpose of prolonging indefinitely the validity of the conditions for a derogation for glass packaging in relation to the heavy metal concentration levels established in Directive 94/62/EC.

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

3.1 None

**4. Legislative Background**

4.1 Article 11 of EC Directive 94/62/EC on packaging and packaging waste (“the 1994 Directive”) imposes limits on the use of heavy metals in packaging and packaging components. A derogation for glass packaging in relation to the heavy metal concentration levels was established by amending Decision 2001/171/EC, (OJ L062, 2.3.2001, p.20).

4.2 That Decision expires on 30 June 2006. The Decision allows glass to exceed the limit of 100 parts per million (ppm) by weight established in article 11 of Directive 94/62/EC. The provisions of the Decision were transposed through regulation 6 (2)(b) of the 2003 Regulations setting out the requirements in Schedule III to these Regulations.

4.3 These Regulations transpose the 2006 Commission Decision by amending the 2003 Regulations to remove the 30 June 2006 expiry date of the exemption so that the derogation for glass packaging continues provided the requirements set out in Schedule III to these Regulations are complied with in relation to that packaging.

4.4 The 1994 Directive was amended by Directive 2004/12/EC (“the 2004 Directive”) which, among other things, amended the definition of packaging in the 1994 Directive. The

2003 Regulations were amended by the Packaging (Essential Requirements) (Amendment) Regulations 2004 (S.I. 2004/1188) which transposed relevant provisions of the 2004 Directive.

4.5 The Department of Trade and Industry submitted an explanatory memorandum (EM) (15194/01) on 14 January 2002 relating to a “Proposal for a Directive of the European Parliament and Council amending Directive 94/62/EC on packaging and packaging waste”. A supplementary EM was submitted on 11 February 2002. The Commons European Scrutiny Committee considered them politically and legally important and for debate (Report 19, Item 23060, Session 01/02). The debate was held on 15 May 2002. The Lords Select Committee on the European Union referred it to Sub-Committee B where it cleared scrutiny and the EM formed the basis of Sub-Committee B’s inquiry into “Packaging and packaging waste: revised recovery and recycling targets”, 33rd Report (2001-2) 23/7/02 (HL Paper 166) (Progress of Scrutiny, 1/8/02, Session 01/02).

4.6 An EM (12587/03) was submitted on 9 October 2003 relating to an “Opinion of the European Commission regarding a Proposal for a Directive of the European Parliament and Council amending Directive 94/62/EC on packaging and packaging waste”. This EM was considered not to be of legal or political importance and cleared by the Commons European Scrutiny Committee (Report 33, Session 02/03) and was not reported on by the Lords Select Committee on the EU (Progress of Scrutiny, 27/10/03, Session 02/03).

4.7 An EM (6891/04) on a "Proposal for a European Parliament and Council Directive 94/62/EC on packaging and packaging waste" which was submitted by DTI on 16 March 2004. This EM was considered not to be of legal or political importance and cleared by the Commons European Scrutiny Committee (Report 13, Session 03/04) and was not reported on by the Lords Select Committee on the EU (Progress of Scrutiny, 9/4/04, Session 03/04).

4.8 An EM (3697/03 & 3697/2/03) was submitted on 22 March 2004 relating to a “Directive 2004/12/EC of the Council and European Parliament amending Directive 94/62/EC on packaging and packaging waste”. This EM was considered not to be of legal or political importance and cleared by the Commons European Scrutiny Committee (Report 16 Session 03/04) and was not reported on by the Lords Select Committee on the EU (Progress of Scrutiny, 9/4/04, Session 03/04).

## **5. Extent**

5.1 This instrument applies to all of the United Kingdom.

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

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

## **7. Policy background**

7.1 These Regulations are necessary to give effect to the 2006 Commission Decision so that the expiry date of 30 June 2006 for the derogation for glass packaging in the 2003 Regulations is removed.

7.2 The making of these Regulations to give effect to the 2006 Commission Decision afford a suitable opportunity to amend the definition of packaging to reflect the definition in the 2004 Directive.

7.3 The amendments made to the definition of packaging by the 2004 Directive were intended to clarify the original definition in the 1994 Directive through the introduction of certain criteria and an annex containing illustrative examples.

7.4 No consultation has been considered necessary because of the nature of the amendments.

## **8. Impact**

8.1 The impact on business of the amendment in regulation 2(2) is considered negligible, given that businesses in practice interpret what and what is not packaging in terms of the nature of its application, and the purpose for which it is being placed on the market. Both of these will be unaffected by the amendment.

8.2 In relation to regulation 2(3) a Regulatory Impact Assessment prepared in July 2003 for the derogation for glass packaging in relation to the heavy metal concentration levels established in the 1994 Directive (copy enclosed at Annex A) remains relevant given that the extension of the derogation time limit does not have any additional impacts on businesses.

## **9. Contact**

9.1 Marleen Jannink at the Department of Trade and Industry Tel: 020 7215 1844 or e-mail: [marleen.Jannink@dti.gsi.gov.uk](mailto:marleen.Jannink@dti.gsi.gov.uk) can answer any queries regarding the instrument.

REGULATORY IMPACT ASSESSMENT (RIA) FOR A DEROGATION FOR GLASS PACKAGING IN RELATION TO THE HEAVY METAL CONCENTRATION LEVELS ESTABLISHED IN THE DIRECTIVE 94/62/EC ON PACKAGING AND PACKAGING WASTE.

### **Issue and Objective**

1. Article 11 of the 1994 EC Packaging Directive imposes limits on the use of heavy metals in packaging and packaging components. The Derogation sets out the conditions under which glass packaging will be exempt from the current concentration limit of 100 parts per million (ppm). The Derogation lasts until 2006, when it will be reviewed.
2. The rationale for the Derogation is that experience of the first years of the application of Article 11 has shown that there is a specific problem in the glass sector, as recycled glass is contaminated by glass material containing high quantities of lead. Therefore, without the derogation, the use of recycled glass may be reduced, imposing extra costs on UK businesses involved in the production of glass packaging. There may also be some adverse environmental impacts.

### **Risk Assessment**

3. The main risk of not having the Derogation is the threat to the continued and increased use of cullet (recycled glass) in glass production. Reducing the use of recycled glass in glass packaging could lead to an increase in disposal rates, resulting in higher volumes of waste going to landfill and a more rapid consumption of raw materials.
4. The main risk from heavy metals found in glass is from the presence of lead. Mercury and hexavalent chromium are not present and the levels of cadmium are negligible. The risks to the environment and to human health are greatest when lead enters the waste stream and is disposed via landfill. Potential hazards from lead are those to; human health, when - direct and prolonged exposure to lead is high it can have adverse affects on the human biological system and the ecosystem -where lead leaches from landfill it can contaminate soil and water supplies and this can harm the balance of the ecosystem.
5. Recycling and recovery can have positive effects on the environment and human health. Using recycled materials alleviates the need to mine and quarry raw materials thus contributing to sustainable development.

### **Options**

6. The Derogation lasts until June 2006, and allows glass packaging to exceed the maximum concentration limits of heavy metals (100ppm), provided that no regulated metals are 'intentionally introduced' and that the concentration levels are exceeded only as a result of the addition of recycled materials.
7. The Derogation requires that the concentration of heavy metals present in each individual glass furnace shall be measured on a monthly basis and the results of which should be made available to the relevant authorities. If the concentration levels exceed a limit of 200ppm on any twelve consecutive months, then the manufacturer, or in the case of products exported from outside the EU, the person responsible for placing the products on the market, will be required to submit a report explaining the suspected source of contamination and a detailed description of the measures to be taken to reduce the

concentration. However, for the UK, the impact of this is unlikely to be significant, given that the maximum reported lead content in glass in 2000 was 128ppm.

8. Two Options have been identified:

#### Option 1

9. There is no Derogation and all glass packaging is subject to Article 11. This will reduce the concentration of heavy metals in the waste stream more rapidly. However the volume of waste from glass may increase in the short term as cullet is substituted by lead free, raw materials. This is an environmentally undesirable outcome that will also make meeting the packaging recycling targets more difficult and costly.

#### Option 2

10. The Derogation is accepted in the UK and glass packaging is exempt from the requirements of Article 11. Exceeding the maximum concentration limits set by the Directive will continue to impose environmental risks from the presence of heavy metals in glass.

### **Issues of Equity and Fairness**

11. The costs and benefits of the Derogation will be broadly equal amongst those involved in the production of glass packaging. However, there may be some inequity amongst glass manufacturers, depending on the investment that each manufacturer has already undertaken to reduce the concentration of heavy metals to comply with the 100ppm limit. However, it is likely that those who have invested are the same firms as those who are already monitoring the levels of lead content. Therefore monitoring costs to comply with the Derogation will be lower compared to firms that have not incurred investment to reduce levels of lead below 100ppm.

12. The cost of the Derogation in terms of the higher lead content that will remain in glass packaging is expected to fall broadly equally on individuals exposed to lead in disposed glass packaging. There may be higher risk to individuals situated near landfill, and to those segments of society that are more prone to the potential negative impacts of lead exposure, such as young children and pregnant women.

### **Benefits**

13. Option 1: Without the Derogation, the benefits of reducing lead content more rapidly are that there will be less risk from lead exposure in the future when glass packaging is recycled or disposed of. However, a report for the European Commission includes the results of tests carried out in both France and The Netherlands in 1995 and concludes that even when lead is present in artificially exaggerated concentrations (10 times the limit) in glass packaging, the risk to the environment or toxicity is unlikely to be significant.<sup>1</sup>

14. Option 2: The Derogation exempting glass packaging, means that recycled glass containing lead can continue to be used in the production process of container glass, thus reducing the demand for new virgin materials. This could also mean that less glass packaging will go to landfill, and the adverse environmental impacts associated with landfill and increased resource consumption will be avoided. In addition, the costs to businesses of meeting the recycling targets laid down in the Packaging Directive will be less.

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<sup>1</sup> European Commission, Heavy Metals and Recycling of Glass, Interim Report Nov 1998

## **Quantifying and Valuing the Benefits**

15. **Option 1:** The benefits of reducing lead in glass packaging are uncertain, and difficult to quantify. High levels of lead exposure can lead to a range of biological effects on humans; affecting the kidneys, joints, reproduction system and potentially causing damage to the nervous system. The main risk of lead in glass packaging is from exposure to workers in the production process and from soil contamination as a result of lead going to landfill. However, results from France and the Netherlands imply that the impact on the environment from lead in glass packaging specifically is likely to be small.
16. **Option 2:** The financial benefits of allowing lead to exceed the maximum concentration limit are the avoidance of the costs firms will incur from producing glass packaging, which contains less than 100ppm and are described in the cost section under Option 1.
17. Environmental benefits will accrue due to the continued and increased use of cullet in glass packaging. It is difficult to predict the amount of recycled glass that would be reduced in the absence of the derogation, due to the dynamics of the market. For instance green glass has the highest lead content, yet it is the most recyclable glass type, as up to 90 per cent of total material used to produce green glass can potentially come from cullet. Therefore firms may reduce the use of green glass cullet, but aim to increase the use of cullet in clear glass production, as the lead content of clear glass is lower. However, for recycling rates of clear glass to increase, the levels and process of collection of clear glass for recycling will need to be improved.
18. There are also environmental benefits from using less energy, as less carbon dioxide (CO<sub>2</sub>) will be emitted. For every tonne of glass produced from virgin raw materials approximately 200kg of CO<sub>2</sub><sup>2</sup> is released into the atmosphere.

## **Business Sectors Affected**

19. The container glass-manufacturing sector comprises 7 companies, operating on 14 sites. It is these companies that will be most affected by the Derogation. Prior to 1999 the glass container sector was the only user of recycled container glass and it continues to be the principal market.
20. All users of glass packaging could potentially be affected by the Derogation. The main industrial users of glass packaging are companies in the food and drink, pharmaceuticals and toiletries and cosmetic industries.
21. Once glass is collected it is sold to a re-processor, who will carry out a crushing operation and remove contaminants such as metals. There are 22 accredited glass 'reprocessing' firms currently operating in the UK, who could be affected by the Derogation.
22. Other business sectors that may be affected are those that use recycled glass for means other than packaging. Currently the main alternative use for recycled glass is as aggregates, for general fill, concrete, and road sub base.

## **Total Compliance Costs**

### **Option 1:**

23. Options available are:

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<sup>2</sup> WRAP "Recycled Glass Market Study & Standards review, written by Enviros, March 2002

- (a) Reduce the amount of recycled glass (cullet) used in the production of packaging and increase the use of recycled glass in other sources.
  - (b) Install further, more sophisticated cullet treatment facilities to remove a larger proportion of contaminant.
24. **Option 1 (a)** It is extremely difficult to predict how the market will react to the imposition of maximum concentration limits of 100ppm and to estimate how all of the glass recycling chains will respond. However, in the short term it is likely that some reduction in the use of recycled glass in packaging would be necessary to comply with the heavy metal limits. Reducing the use of recycled glass in the production of glass packaging will have financial costs to industry, as production using raw materials implies higher energy costs and the cost to industry of meeting the recycling targets are likely to be greater.
25. These costs are difficult to quantify. Currently the container glass sector is responsible for 80% of all recycled glass that is used. The possibilities of using recycled glass for other purposes are limited, due to both technical and economic reasons. The economic limitations are likely to mean that the costs of recycling glass for use in purposes other than packaging will be greater than the cost of using recycled glass in packaging. However, as recycling targets still need to be met, industry will need to find alternative and probably more costly uses for recycled glass. The increased costs of using recycled glass will be reflected by a rise in the price of PRNs. The amount by which the price will increase is uncertain, however the additional cost to businesses will be the price difference of PRNs in a market in which the use of cullet in packaging is reduced and in the market where recycled glass use in packaging continues at the current (or increased) rates, multiplied by the total number of PRNs purchased by obligated businesses
26. Using recycled glass in production represents energy savings to firms; as energy requirements to melt glass are somewhat lower than to produce glass from virgin raw materials. It is estimated that a 10 per cent increase in cullet addition will lead to 1.5 –2 per cent energy savings. This equates to cost savings of £0.12 to £0.22 per tonne of glass produced. Therefore reducing the cullet content will increase energy costs. At current energy prices, a 10 per cent decrease in the amount of recycled glass used could lead to increased energy costs of around £375,000 per annum.
27. **Option 1 (b):** The cost of purchasing cullet treatment equipment is difficult to quantify, as equipment to separate heavy metals completely is not currently available. However, one industry estimate, from comparing investment required for similar types of new equipment, which has significantly improved the separation of contaminants in the processing of recycled glass suggests such equipment would require capital investment of approximately £500,000 per plant. Assuming the UK require 5 extra plants to cover all furnaces then £2.5 million, over a 10 year depreciation period would equate to an average of approximately £250,000 per annum. In addition to this, industry estimates that a further £250,000 per annum would be required for running costs, increasing the total estimate to £500,000 per annum.
28. However, this may be an underestimate as one manufacturer has invested £4.5 million in a new recycling plant, in order to reduce the degree of cullet contamination. The plant has succeeded in reducing contamination levels, however the equipment can still not separate out the heavy metals that are embedded in glass containers entering the recycling process.

29. **Option 2:** All UK glass manufacturers are now testing heavy metal concentration levels in each individual furnace. For 10 consecutive months, tests are carried out to measure the amount of lead and cadmium present in glass containers; each test costs approximately £60 per month<sup>3</sup>. In the 11th month all heavy metals<sup>4</sup> are tested for, costing £150 per test. In the 12th consecutive month, the containers are tested for their leachate content rather than container content; this test costs approximately £180. Therefore the total cost per annum for each furnace is approximately £930. In the UK there are currently 30 furnaces in use, therefore the cost to UK industry of the Derogation is approximately £27,900 per annum.

### **Compliance costs for a typical business**

30. Option 1 (a), it is not possible to estimate costs for a typical business, given the uncertainties surrounding possible changes in recycling patterns.
31. Option 1 (b), compliance for a typical business will vary. However, for a typical glass manufacturer investment in new technology<sup>5</sup>, could result in costs of £186,000 discounted over a 10-year period.
32. Option 2, all firms have now committed to monthly analysis, testing for the concentration of heavy metals present in containers. The cost of testing is approximately £27,900 to the UK per annum.

### **Competition Assessment**

33. Applying the Cabinet Office Regulatory Impact Unit's Competition Filter, suggest that that the impact on competition in the market will not be significantly affected:
- All firms in the sector will face equivalent costs in relation to the number of furnaces they own and thus the amount of glass they produce.
  - New firms are likely to be affected in the same way as existing firms as all firms will face the monitoring costs necessary with the Derogation.
  - The market is not currently characterised by a high degree of technical change, however the impact of the Packaging Directive may encourage increased innovation and technological progress.
  - The ability of firms to sell the products they choose will not be affected by the Derogation.

### **Small firms Impact Test**

34. There are no small firms in the glass packaging-manufacturing sector. There will be no significant adverse impact upon small firms in other business sectors that could potentially be affected by the Derogation.

### **Enforcement and Sanctions**

35. The maximum concentration limits will be monitored and enforced by the Environment Agency. The Derogation will end in 2006, unless it is extended in accordance with the rules laid out in Article 21 of the 1994 Packaging Directive.

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<sup>3</sup> Estimates provided by British Glass

<sup>4</sup> These are; lead, cadmium, hexavalent chromium and mercury

<sup>5</sup> It should be noted that such technology is not currently available and therefore this is a hypothetical option at the moment, but it may be available in future years.



### **Monitoring and Review**

36. The effectiveness of the Derogation will be monitored on an on-going basis. The Derogation will end in 2006, unless it is extended in accordance to the rules laid out in Article 21 of the 1994 Packaging Directive.

### **Consultation**

37. The trade association for the glass industry was contacted and provided useful information as to the costs and benefits associated with the Derogation.

### **Summary and Recommendation**

38. The benefits of the Derogation arise in terms of avoidance of costs to industry of reducing heavy metal concentration in glass packaging to below the 100ppm limit. The other main benefit of the Derogation is that it eliminates the threat to the use of recycled glass in the production of glass packaging as it facilitates recycling and is also consistent with the search for more cost effective ways to meet the recycling targets in the Packaging and Packaging Waste Directive.
39. The potential cost to the UK of applying to Article 11, without the Derogation is difficult to estimate. However, there it is expected that there will be an increase in the price of PRNs, as industry turns to alternative, more costly uses for recycled glass and an increase in energy costs from using more virgin raw materials. In terms of predicted investment that may be required, this is estimated at, £500,000 per annum and currently the technology is not available to ensure complete compliance with the heavy metal limits.
40. The quantifiable cost of the Derogation to UK businesses is estimated to be approximately £27,900 per annum.
41. Given the low cost of the Derogation, the high potential benefits of maintaining and increasing the use of recycled glass and the potentially small environmental benefit that may be achieved in the absence of the Derogation, it is recommended that the Derogation be accepted into UK legislation.

**References**

Commission of the European Communities, Explanatory Memorandum to the Proposal for a European Parliament and Council Directive to amend Directive 94/62/EC on Packaging and Packaging Waste, COM (2001) 729 Final.

**Declaration**

I have read the Regulatory Impact Assessment and I am satisfied that the balance between cost and benefit is the right one in the circumstances.

Signed by the Minister responsible .....

(Minister for Energy, E-Commerce and Postal Services)

Date .....

**Contact**

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## TRANSPOSITION NOTE

### **Council Directive 94/62/EC on Packaging and Packaging Waste, (“the Packaging Directive”) amended by Council Directive 2004/12/EC.**

The Packaging (Essential Requirements) Regulations (SI 2003/1941) (“the Packaging Regulations”) as amended by SI 2004/1188 implement Articles 9 and 11 of the Packaging Directive and incorporate the provisions of a Commission Decision of 8 February 1999 (1999/177/EC) in respect of a derogation from the provisions of the Packaging Directive in relation to plastic crates and pallets and a Commission Decision of 19 February 2001 (2001/171/EC) in respect of a derogation relating to glass packaging.

The Packaging (Essential Requirements) (Amendment) Regulations 2006 (“the Amendment Regulations”) amend the Packaging Regulations further to amend the definition of packaging and transpose Commission Decision 2006/340/EC amending Decision 2001/171/EC.

The Secretary of State is responsible for taking measures to implement the Packaging Directive in relation to the making of these Regulations and, along with the enforcement authorities who are, in Great Britain weights and measures authorities and in Northern Ireland the Department of Enterprise, Trade and Investment, responsible for the measures taken to enforce these Regulations.

<b>Articles which comprise the main elements of the Packaging Directive, listed by Article number</b>	<b>Objectives of the Articles</b>	<b>Implementation of the Packaging Directive Articles in the Regulations</b>
Article 2.1	The general application of the Packaging Directive to packaging and packaging waste	Regulation 3(1) applies the Regulation to any packaging subject to excluded packaging set out in Regulation 4 (see below).
Article 2.2	Application to be without prejudice to certain existing quality requirements for packaging	Regulation 3(2) cites the existing requirements relating to safety, protection of health and hygiene etc that continue to apply.
Article 3	Definitions of terms used in the Directive	Regulation 2 sets out definitions of terms used in the Regulations as amended by Directive 2004/12/EC. Schedule V lists illustrative examples of packaging under the criteria set out in the definition of packaging
Article 9	Sets out the essential requirements of packaging placed on the market as listed in Annex II	Regulation 5 imposes a duty on the responsible person who places packaging on the market to ensure it satisfies the essential requirements. These are set out in Schedule 1.
Article 11.1	Sets out maximum limits of concentration levels of heavy metals in packaging placed on the market over certain periods of time.	Regulation 6 (1) imposes a duty on the responsible person to observe specified limits of concentration levels of heavy metals in packaging placed on the market at certain dates.
Article 11.2	Provides an exception to the above limits in the case of lead crystal glass	Regulation 6(2) sets out the exception to the requirements of regulation 6(1) in relation to lead crystal glass.
Article 11.3	Provides for the Commission to determine derogations to these limits in terms of conditions and types of packaging	Regulation 6 (3) refers to exceptions to these limits for plastic crates and pallets and glass packaging provided the requirements set out respectively

		in Schedules II and III are complied with. These reflect the provisions in Decisions 1999/171/EC and 2001/171/EC providing for derogations from the limits of heavy metal concentration levels in these cases as amended by Decision 2006/340/EC.
Article 22.4	Provides that the requirements for packaging do not apply in relation to packaging used before the entry into force of the Directive	Regulation 4 (1) provides that packaging used for a product before 31 December 1994 is excluded from the provisions of the regulations.
Article 22.5	Provides that member states may permit placing on their market of packaging in conformity with national law for a period of five years from the date of entry into force of the Directive	Regulation 4(2) provides that the regulations do not apply to packaging manufactured on or before 31 December 1994 and lawfully placed on the market on or before 31 December 1999.