

<b>Title:</b> <b>Implementation of Directive 2007/23/EC placing on the market of pyrotechnic articles</b>  <b>Lead department or agency:</b> BIS  <b>Other departments or agencies:</b>	<b>Impact Assessment (IA)</b>
	<b>IA No:</b> BIS0048
	<b>Date:</b> 11/05/2010
	<b>Stage:</b> Final
	<b>Source of intervention:</b> EU
	<b>Type of measure:</b> Secondary legislation
<b>Contact for enquiries:</b> Tony Eden-Brown (0207 215 0630)	

## Summary: Intervention and Options

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

Pyrotechnic articles are potentially hazardous. However, the hazardous nature of an article is not readily discernible by consumers, particularly in the case of fireworks. This asymmetry of information, without credible and proper safety testing procedures in place, could result in dire consequences such as personal injury. For these reasons all EU Member States impose conformity requirements on fireworks manufactured within and imported in to the country - for example, in the UK fireworks conform to British Standard BS7114. These standards vary from country to country, which can potentially inhibit the free movement of articles around the EU. Government intervention is therefore necessary to harmonise these standards and remove any potential barriers they may present to intra-EU trade.

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

The European Commission proposed a Directive in 2005 for pyrotechnic articles. This had the primary aims of: ensuring the free movement of pyrotechnic products within the EU, improving the overall protection of consumers and professionals, contributing to the reduction in accidents and harmonising safety standards across the EU. The Directive covers fireworks and extends to theatrical pyrotechnics for films/theatres, car airbag detonators and restraint systems, as well as other miscellaneous articles. This will help provide greater clarity and certainty for businesses that purchase and distribute pyrotechnic articles, enforcers with regards to cross-border trade and testing, and ultimately more confident consumers when purchasing goods. However, such improvements are expected to be more marginal in the case of fireworks.

### What policy options have been considered? Please justify preferred option (further details in Evidence Base)

Three options have been considered: Option 1 - do nothing (i.e. resist the Directive and maintain national laws); Option 2 - to use voluntary measures, and Option 3 - implement the Directive through regulation. However, the option of voluntary measures (option 2) was considered unlikely to work, given existing national requirements on fireworks and other pyrotechnic articles that are adhered to rigorously by UK companies. It was also felt that issues relating to product safety were not suitable for implementation via voluntary industry measures. If the Directive, which has already been politically agreed, were not transposed into law, the UK would face infraction proceedings and ultimately be subject to a fine. Therefore, the only option subject to cost-benefit analysis is the option to implement the Directive through regulations (option 3) which is the government's preferred option that is being taken forward following consultation. This option has been evaluated relative to the 'do nothing' option as a theoretical base case to assess the impact and effectiveness of the Directive.

<b>When will the policy be reviewed to establish its impact and the extent to which the policy objectives have been achieved?</b>	It will be reviewed July 2015
<b>Are there arrangements in place that will allow a systematic collection of monitoring information for future policy review?</b>	Yes

**Ministerial Sign-off** For final proposal 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: Edward Davey..... Date: 9th June 2010.....

# Summary: Analysis and Evidence

# Policy Option 3

## Description:

Option 3: Implementing the Pyrotechnics Directive by introducing new UK regulations and amending the existing UK regulatory regime (Government's Preferred Option)

Price Base Year 2010	PV Base Year 2010	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: N/Q	High: N/Q	Best Estimate: N/Q

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	4.7	0.24	5.14
High	85	0.32	86.9
Best Estimate	44.85	0.28	46.0

### Description and scale of key monetised costs by 'main affected groups'

Transition cost up to 2017 of obtaining approval by Notified Bodies of up to 85,000 existing firework types currently estimated to be on sale in the UK, which could result in upward pressure on prices to consumers. It has been assumed that such costs are incurred on a constant basis between now and 2017. Ongoing annual cost after 2017 for new firework types introduced to the market (of which there are estimated to be 320 per year).

### Other key non-monetised costs by 'main affected groups'

Requirements relating to accreditation and market surveillance could increase HSE and Trading Standards Enforcement costs. Additional costs related to Category 4 firework articles. Familiarisation costs for industry relating to new regulations (likely to be negligible).

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	N/Q	N/Q	N/Q
High	N/Q	N/Q	N/Q
Best Estimate	N/Q	N/Q	N/Q

### Description and scale of key monetised benefits by 'main affected groups'

N/A

### Other key non-monetised benefits by 'main affected groups'

Potential downward pressure on prices for pyrotechnic articles through lower manufacturer costs and greater retail competition. Potentially easier enforcement and increased intra-EU trade/competition in pyrotechnics, leading to greater certainty for businesses, resulting in downward pressure on prices to consumers and greater consumer confidence in the improved safety of these goods (though likely to be marginal for fireworks). Cost reductions for UK manufacturers of automotive pyrotechnic articles.

### Key assumptions/sensitivities/risks

Discount rate (%) 3.5

For cost estimates, a number of assumptions have been used regarding the number of firework types requiring conformity testing, the potential reduction in testing costs as a result of grouping and the cost of third-party conformity testing.  
The main risk is that the Directive may result in higher cost pyrotechnic articles (albeit ones that meet required safety standards), particularly fireworks, in the UK with no attendant safety benefits to UK consumers. Potential further risk that costs of conformity testing stifles innovation, ultimately leading to less choice for consumers.

Impact on admin burden (AB) (£m): 0			Impact on policy cost savings (£m): 0	In scope
New AB: 0	AB savings: 0	Net: 0	Policy cost savings: 0	Yes

# Enforcement, Implementation and Wider Impacts

What is the geographic coverage of the policy/option?	United Kingdom				
From what date will the policy be implemented?	04/07/2010				
Which organisation(s) will enforce the policy?	TSO, HSE and Secretary of State				
What is the annual change in enforcement cost (£m)?	None				
Does enforcement comply with Hampton principles?	Yes				
Does implementation go beyond minimum EU requirements?	Yes				
What is the CO <sub>2</sub> equivalent change in greenhouse gas emissions? (Million tonnes CO <sub>2</sub> equivalent)	<b>Traded:</b> N/A		<b>Non-traded:</b> N/A		
Does the proposal have an impact on competition?	No				
What proportion (%) of Total PV costs/benefits is directly attributable to primary legislation, if applicable?	<b>Costs:</b> N/A		<b>Benefits:</b> N/A		
Annual cost (£m) per organisation (excl. Transition) (Constant Price)	<b>Micro</b> N/A	<b>&lt; 20</b> N/A	<b>Small</b> 0-0.32	<b>Medium</b> 0-0.32	<b>Large</b> N/A
Are any of these organisations exempt?	No	No	No	No	No

## Specific Impact Tests: Checklist

Set out in the table below where information on any SITs undertaken as part of the analysis of the policy options can be found in the evidence base. For guidance on how to complete each test, double-click on the link for the guidance provided by the relevant department.

Please note this checklist is not intended to list each and every statutory consideration that departments should take into account when deciding which policy option to follow. It is the responsibility of departments to make sure that their duties are complied with.

Does your policy option/proposal have an impact on...?	Impact	Page ref within IA
<b>Statutory equality duties</b> <sup>1</sup> <a href="#">Statutory Equality Duties Impact Test guidance</a>	No	13
<b>Economic impacts</b>		
Competition <a href="#">Competition Assessment Impact Test guidance</a>	Yes	13
Small firms <a href="#">Small Firms Impact Test guidance</a>	Yes	13
<b>Environmental impacts</b>		
Greenhouse gas assessment <a href="#">Greenhouse Gas Assessment Impact Test guidance</a>	No	13
Wider environmental issues <a href="#">Wider Environmental Issues Impact Test guidance</a>	No	13
<b>Social impacts</b>		
Health and well-being <a href="#">Health and Well-being Impact Test guidance</a>	No	13
Human rights <a href="#">Human Rights Impact Test guidance</a>	No	13
Justice system <a href="#">Justice Impact Test guidance</a>	No	13
Rural proofing <a href="#">Rural Proofing Impact Test guidance</a>	No	13
<b>Sustainable development</b> <a href="#">Sustainable Development Impact Test guidance</a>	No	13

<sup>1</sup> Race, disability and gender Impact assessments are statutory requirements for relevant policies. Equality statutory requirements will be expanded 2011, once the Equality Bill comes into force. Statutory equality duties part of the Equality Bill apply to GB only. The Toolkit provides advice on statutory equality duties for public authorities with a remit in Northern Ireland.

## Evidence Base (for summary sheets) – Notes

Use this space to set out the relevant references, evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Please fill in **References** section.

### References

Include the links to relevant legislation and publications, such as public impact assessment of earlier stages (e.g. Consultation, Final, Enactment).

No.	Legislation or publication
1	Consultation on the Pyrotechnic Articles (Safety) Regulations 2009 ( <a href="http://www.berr.gov.uk/files/file52460.pdf">http://www.berr.gov.uk/files/file52460.pdf</a> )
2	Directive 2207/23/EC on the placing on the market of pyrotechnic articles ( <a href="http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:154:0001:0021:en:PDF">http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:154:0001:0021:en:PDF</a> )
3	Impact Assessment of Pyrotechnics Directive, European Commission ( <a href="http://ec.europa.eu/enterprise/sectors/chemicals/files/doc/pyro_impact_assess_en.pdf">http://ec.europa.eu/enterprise/sectors/chemicals/files/doc/pyro_impact_assess_en.pdf</a> )
4	

+ Add another row

### Evidence Base

Ensure that the information in this section provides clear evidence of the information provided in the summary pages of this form (recommended maximum of 30 pages). Complete the **Annual profile of monetised costs and benefits** (transition and recurring) below over the life of the preferred policy (use the spreadsheet attached if the period is longer than 10 years).

The spreadsheet also contains an emission changes table that you will need to fill in if your measure has an impact on greenhouse gas emissions.

#### Annual profile of monetised costs and benefits\* - (£m) constant prices

	Y <sub>0</sub>	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>3</sub>	Y <sub>4</sub>	Y <sub>5</sub>	Y <sub>6</sub>	Y <sub>7</sub>	Y <sub>8</sub>	Y <sub>9</sub>
<b>Transition costs</b>	0.7- 12.1	0.7- 12.1	0.7- 12.1	0.7- 12.1	0.7- 12.1	0.7- 12.1	0.7- 12.1	0.7- 12.1	0	0
<b>Annual recurring cost</b>	0	0	0	0	0	0	0	0	0.24-	0.24-
<b>Total annual costs</b>	0.7- 12.1	0.7- 12.1	0.7- 12.1	0.7- 12.1	0.7- 12.1	0.7- 12.1	0.7- 12.1	0.7- 12.1	0.24- 0.32	0.24- 0.32
<b>Transition benefits</b>	0	0	0	0	0	0	0	0	0	0
<b>Annual recurring benefits</b>	0	0	0	0	0	0	0	0	0	0
<b>Total annual benefits</b>	0	0	0	0	0	0	0	0	0	0

\* For non-monetised benefits please see summary pages and main evidence base section



Microsoft Office  
Excel Worksheet

# Evidence Base (for summary sheets)

## The issue

1. Pyrotechnic articles (e.g. fireworks) are designed to produce effects such as the generation of gas, light, noise or smoke by chemical means. Fireworks and automotive occupant restraint systems (e.g. car airbags and seatbelt pre-tensioners) represent the major uses of such articles within the EU, but the Directive also extends to other miscellaneous pyrotechnic articles, such as theatrical pyrotechnics, nail guns, shroud cutters and bird-scarers.
2. The potentially hazardous nature of pyrotechnic articles has led to all EU Member States imposing safety requirements on pyrotechnic articles manufactured within, and imported in to the country.<sup>2</sup> However, these standards vary from country to country, which can inhibit the free movement of these articles around the EU. Furthermore, there are concerns about the quality and safety of some products, which could lead to serious harm for consumers.

## Size of market

3. The European Commission estimates the size of the market for fireworks to be around €1.4 billion per year, comprising both fireworks sold to consumers (i.e. category 1, 2 and 3) and those sold to professionals only (category 4). The majority of fireworks sold in the EU (98%) are imported from China, with only a very small proportion (2%) manufactured in the EU. Those fireworks which are manufactured in the EU are generally category 4 (i.e. professional use) fireworks. The UK has a very small number of firework manufacturers.
4. Overall, the industry employs around 3,000 people across Europe but, as few fireworks are manufactured in the EU, most of these employees are involved in purchasing, storage, distribution and professional display of fireworks. The market for automotive occupant restraint systems is much larger at around €5.5 billion per year<sup>3</sup>, and although the EU is a net importer of fireworks, it is a net exporter of automotive components containing pyrotechnic articles (such as airbag systems).

## Accidents

5. There is no available information on the incidence of accidents related to certain types of pyrotechnics, with only some information collected on accidents related to fireworks. These accident rates vary substantially between countries, which may reflect a number of factors (e.g. local customs for the public usage of fireworks, the times of year when fireworks are in demand, type of firework used, way in which consumers approach such products, reporting of accidents). The European Commission estimates that the number of firework-related accidents is 7,000-45,000 per year. The UK previously collected detailed firework accident statistics, but the last available data is for 2005, when there were 990 such accidents in the UK.
6. Despite this more detailed data, it is still not possible to ascertain the extent to which accidents are a result of firework malfunction (which would be addressed by the Directive) or misuse. Evidence presented to the European Commission suggests that the majority result from misuse, but data reported by Denmark for 2002 suggests that almost half of recorded accidents resulted from malfunction of a firework. However, the potential reduction in UK accidents may be quite small – the UK experience of collecting firework accident data suggests the vast majority (more than 95%) result from misuse rather than malfunction. This was supported by responses to the BIS consultation, which highlighted that any improvement in safety was unlikely to affect the protection of firework professionals, possibly as they are already likely to take suitable precautions. Furthermore, EU standards are likely to be very similar to current UK standards and it is unlikely that fireworks imported to the UK will be any safer.
7. The ease with which fireworks can be transported between Member States means that it is necessary to ensure that essential safety requirements are complied with throughout the EU. The Commission has raised concerns that rising cost pressures in the Chinese firework industry could lead to quality problems, which may then result in an increase in firework-related accidents. The limited resources of enforcement agencies may not prevent illegal fireworks being made available to consumers – for example, the Netherlands Environment Ministry recently found that only 1 in 10 illegal fireworks smuggled into the country were intercepted. This could also be true for the UK – data from Suffolk Trading Standards, which has jurisdiction over the major port of Felixstowe, suggests a

<sup>2</sup> For example, in the UK fireworks conform to British Standard BS7114/BS EN14035.

<sup>3</sup> It is estimated that automotive occupant restraint systems are placed in 20 million vehicles in the EU per year. This amounts to approximately 80 million airbags at a value of €3.5 billion and 90 million seatbelt pre-tensioners at a value of around €2 billion.

non-compliance rate of 14% for fireworks, although 'non-compliant' should not necessarily be equated with 'unsafe'.

### *Current testing regimes - fireworks*

8. Current approval regimes for fireworks are set nationally and therefore differ substantially across the EU. In some Member States, approval is based on the type of firework (type approval), while in other it is based on manufactured batches of fireworks meeting certain rates of reliability (batch testing). In the UK approval is based on batch testing, which involves regular sampling of fireworks to ensure quality control (i.e. that the effect of a particular firework is as it should be). Type approval is slightly different, in that it involves checking the composition of a firework to ensure it conforms to the stated specifications (i.e. a form-based, rather than effects-based, conformity test). Due to these differences, it is expected that batch testing currently undertaken by UK firms will continue, regardless of any testing requirements introduced as a result of the Directive's implementation.
9. In general, there is no mutual recognition of results, which could act as a barrier to trade within the EU. However, the UK's present rules allow for recognition of Member State standards that provide an equivalent level of protection.
10. Currently, there is no requirement for third-party verification of conformity, with UK manufacturers and importers self-declaring conformity of each type of firework to British Standard BS7114, which has been partially replaced by BS EN14035 as an interim measure. The Directive will be implemented by a new harmonised standard (EN15947), which is due to come into effect for category 1-3 fireworks from 4 July 2010, extending to all pyrotechnic articles by 2013. Nevertheless, fireworks subject to extant approvals under BS7114 or BS EN14035 will be permitted to be sold within the EU until 2017.
11. Domestic manufacturers and importers either test products in-house for conformity with British standards or give products to commercial test houses (usually in the country of manufacture) and in so doing incur a one-off cost for each type of firework. For fireworks, the costs of testing vary considerably between Member States. The European Commission estimates that such costs can range from €500 to €2,500 per item and tend to increase from category 1 to category 3. In Member States where approval is based on batch testing, the tests are conducted closer to the manufacturing location (i.e. China), but there is no information available on these costs.

### *Current testing regimes – automotive pyrotechnics*

12. In the case of automotive pyrotechnic articles, many Member States have different approval processes for inflators, modules and safety devices, but these are currently also based on national regulations and laws.
13. Approval procedures for automotive pyrotechnic articles also differ widely throughout the EU. An example from Germany is that testing can cost as much as €25,000, comprising €1,500-€2,000 charged by the approval authority, €10,000 for samples and the rest for company internal expenditure. There is some recognition of other countries' testing procedures, but this is not universal – for example, the German classification is recognised by the UK, Sweden and Austria, but not in France; Spain accepts both the German and French classifications, but not Austria.

### *Other regulatory considerations – fireworks*

14. The entry of fireworks into Britain is regulated by the Health and Safety Executive (HSE) under the Classification and Labelling of Explosives Regulations 1983 and Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2004.<sup>4</sup> According to HSE documentation, although it is not obliged to accept Competent Authority Documents (CAD) from other countries, the HSE will normally do so.<sup>5</sup> This therefore represents an additional consideration that must be taken into account when assessing the potential barriers to trade in relation to fireworks imported into the UK. However, this requirement will remain unchanged by the Directive.

### **Rationale**

15. As discussed above, pyrotechnics (particularly fireworks) are potentially hazardous, but this is not readily discernible by consumers. This asymmetry of information, without credible and proper safety testing procedures in place, could result in dire consequences, such as personal injury or even death.

---

<sup>4</sup> Separate regulations apply in Northern Ireland

<sup>5</sup> <http://www.hse.gov.uk/explosives/forms/appguide.pdf>

16. This creates the potential for Government intervention as, although available data indicates that the majority of accidents result from misuse rather than malfunction, there is potential to reduce the incidence of pyrotechnic-related accidents even further.
17. As set out above, the differences in testing procedures across Member States creates the potential for inefficiencies across the pyrotechnics market, by imposing unnecessary costs on businesses. Without regulatory intervention, it could be argued that the variation in national testing procedures would persist, leading to lower trade than could be achieved if such procedures were harmonised.

## **Objectives**

18. The European Commission intends the overall objective of the Directive to be the creation of a single market in pyrotechnic articles, whilst ensuring a high level of protection to consumers. The divergent nature of national legislation across the EU is liable to cause barriers to trade. Under the principle of “tested once, accepted everywhere”, the Directive is intended to achieve cost savings for those companies active in several Member States.
19. A further objective for the Directive is to reduce accidents caused by malfunction, by ensuring that only CE-marked articles (i.e. those which comply with essential safety requirements) are placed on the market.

## **Options identification**

20. Three options have been considered for implementing the Directive:
  - Option 1 – do nothing, resist the Directive and maintain national laws
  - Option 2 – use voluntary measures
  - Option 3 – implement the Directive through regulation (the preferred option being taken forward following consultation)

### *Option 1*

21. Under this option, the differences in national testing regimes would persist, continuing to prohibit the movement of pyrotechnic articles within the EU. In addition, the UK would be in breach of its duties under the Treaty of Rome and face infringement proceedings and ultimately be subject to a fine.
22. This would have been the UK’s preferred option if it had not won certain concessions in the negotiations on the Directive, allowing Member States to maintain parts of their existing national legislation on pyrotechnic articles. These elements relate to controls on the minimum age at which a person can be supplied fireworks, fireworks for professional use and controls on which fireworks can be supplied (this allows the UK to maintain the bans on certain fireworks being sold to consumers e.g. bangers and mini rockets).

### *Option 2*

23. Under this option, co-ordinated Member State action could save costs for pyrotechnic manufacturers, if Member States could align their approval procedures, and/or mutually accept approvals and classifications of other Member States. However, it is felt that this is unlikely without Member States having a legal basis for doing so. Improvements in sharing information about defective pyrotechnics, combined with increased market surveillance activities, could lead to a reduction in accidents. However, market surveillance would remain burdensome, as there would be no EU-wide safety requirements and consistency in marking and labelling pyrotechnic articles.
24. Therefore, this option was considered unlikely to lead to an effective outcome, given existing national requirements on fireworks and other pyrotechnic articles that are adhered to rigorously by UK companies. It was also felt that issues relating to product safety and use by consumers were not the most suitable areas for implementation via industry voluntary measures.

### *Option 3*

25. As mentioned above, almost all Member States have national regulations in place relating to the supply and use of fireworks (and other pyrotechnics). Most are likely to maintain much of their existing legislation, but the harmonising effect of the Directive could allow both fireworks made in Member States and fireworks imported from China to be more freely traded throughout the EU.

26. This will take the form of a new harmonised European standard (EN15947), agreed by the European Committee for Standardization (CEN)<sup>6</sup>, which will be imposed across all Member States. Based on analysis and responses to the BIS consultation, this is unlikely to lead to an improvement in standards relative to the current UK position (particularly in relation to fireworks). In certain respects, implementation will go beyond the absolute minimum required by the Directive in order to maintain existing UK safety requirements, which are outlined in further detail below.

### Options analysis

27. Given the analysis above, the only option considered in terms of costs and benefits is option 3, which has been considered relative to a 'do nothing' scenario.

### Fireworks

28. Under the Directive, the EU classification system and essential safety standards will remain broadly similar to the current UK classification system and standards. However, in addition to ensuring that fireworks conform to new EU standards through in-house or commercial testing (which already happens in the UK), domestic firework manufacturers and importers will have to submit samples to Notified Bodies for third-party testing to check conformity against EU standards. This represents a new and additional cost, over and above that currently incurred to ensure conformity during development of a firework type.

29. As stated above, implementation of the Directive will be achieved through the introduction of a new standard for pyrotechnics (EN15947). Respondents to the BIS consultation have said that this standard imposes unrealistic quality thresholds that are very difficult (if not impossible) to meet, given that most fireworks tend to be hand-made. Furthermore, respondents submitted that this standard would have the effect of reducing safe distances for UK fireworks.

30. Respondents also felt that the implementation of the Directive (through the imposition of EN15947) would lead to an increase in the costs of testing without any appreciable increase in the safety of firework products. It was felt that the level of safety achieved through testing under BS7114 (and EN14035, which were similar) was sufficient, without imposing the need for additional third-party type testing.

### - costs

31. As set out above, the European Commission estimates that type testing costs in Member States vary from €500 to €2,500. It was previously suggested that costs to UK importers and manufacturers could be as low as £500, but responses to the BIS consultation indicate that this is unlikely. Industry estimate that UK fireworks testing would be likely to cost about £750-£1,000 for type approval, though this is likely to depend on the number of times a product has to be submitted in order to pass. However, testing costs could in future reduce through competition between Notified Bodies, though it is difficult to predict how likely this may be.

32. It is unclear precisely how many firework types will need to be subject to this third-party conformity testing. This will depend on two main factors:

- the number of firework types, and
- the extent to which testing may be conducted on a 'group' basis, with fireworks may be grouped according to their characteristics.

33. In relation to the number of firework types, the European Commission estimates that over 50,000 types of firework are sold in the EU, though it is unlikely that every type of firework will be sold in every Member State.<sup>7</sup> However, responses to the BIS consultation indicated that the number of registered entries on the List of Classified and Authorised Explosives and Fireworks (LOCEF) is much higher – around 85,000 for the UK.<sup>8</sup> However, it is difficult to know what proportion of these 85,000 types are still being sold in the UK (and would therefore require testing).

34. Many fireworks are very similar – for example, through differences in the sequencing of colours or a different combination of shots. Given these minor differences, the Commission believes there is scope for grouping fireworks according to their dimensions and performance characteristics, which

<sup>6</sup> <http://www.cen.eu/cen/Pages/default.aspx>

<sup>7</sup> For example, the UK's current regulations prohibit the sale of certain types of firework and these prohibitions will be maintained, where appropriate and necessary, under the new regulations.

<sup>8</sup> Information retrieved on 25<sup>th</sup> May 2010. Database available at: <http://webcommunities.hse.gov.uk/connect.ti/explosives/view?objectId=58704>



has the potential to reduce these testing costs considerably.<sup>9</sup> Unfortunately, as there is little clarity on the possible groupings, different assumptions have been used to estimate the potential extent of this reduction.<sup>10</sup>

**Table: Total testing costs under assumption of £750 testing costs**

Number of existing firework types to be tested	Reduction in testing costs as a result of grouping				
	0%	10%	25%	50%	75%
<b>25,000</b>	£18.75m	£16.88m	£14.06m	£9.38m	£4.69m
<b>50,000</b>	£37.50m	£33.75m	£28.13m	£18.75m	£9.38m
<b>75,000</b>	£56.25m	£50.63m	£42.19m	£28.13m	£14.06m
<b>85,000</b>	£63.75m	£57.38m	£47.81m	£31.88m	£15.94m

**Table: Total testing costs under assumption of £1,000 testing costs**

Number of existing firework types to be tested	Reduction in testing costs as a result of grouping				
	0%	10%	25%	50%	75%
<b>25,000</b>	£25m	£22.5m	£18.75m	£12.5m	£6.25m
<b>50,000</b>	£50m	£45m	£37.5m	£25m	£12.5m
<b>75,000</b>	£75m	£67.5m	£56.25m	£37.5m	£18.75
<b>85,000</b>	£85m	£76.5m	£63.75m	£42.5m	£21.25m

35. Therefore, based on a range of potential assumptions about the number of firework types requiring testing, the potential reduction in testing costs as a result of grouping and the cost of a third-party conformity test, total costs could range from **£4.7m<sup>11</sup> to £85m<sup>12</sup>**.
36. Given that extant approvals can be utilised until 2017, it is difficult to estimate the profile of when these costs might be incurred. Without any better information, it has been assumed that these costs will be split equally across all years up to 2017. Therefore, the range above implies an annual cost over this 7-year period of **£0.7m-£12.1m per year**.
37. However, this calculation does not take into account the new firework types that could be introduced into the market. Responses to the BIS consultation indicate that a manufacturer or importer could introduce up to 320 new firework types every year, which would be subject to the third-party type testing required by the Directive. Seen in the context of the number of firework types introduced each year, it might be assumed that this increase in the number of firework types could be equal to the likely number of firework types to be discontinued from the existing 'stock' until 2017. After this transitional period, the annual costs of this testing would be **£240,000-£320,000 per year**.
38. Category 4 and theatrical pyrotechnic articles are not currently subject to the same formal type or batch testing requirements as Categories 1, 2 and 3. Therefore when the Directive comes in to force, Category 4 fireworks and theatrical pyrotechnics will be subject to the additional costs of conformity testing for the first time, as well as the additional costs associated with third party verification by a Notified Body. However, as we do not have any detailed data, this remains a non-monetised cost.
39. Even if the specification of fireworks is standardised or grouped to some degree (mitigating the impact of additional testing costs), responses to the BIS consultation indicate that the Directive requires labelling specific to each Member State, which will still result in increased costs for this element. Responses to the BIS consultation indicated that these costs could amount to £7.50 per

<sup>9</sup> Although group testing may cost more than type testing, it is probable that the equivalent cost per type of firework would be lower under group testing.

<sup>10</sup> Assumptions have to be used as data is unavailable both on the number of types of firework sold in the UK and the extent to which types could be grouped for the purpose of conformity testing.

<sup>11</sup> Assuming 25,000 firework types, with a reduction in testing costs of 75% due to grouping

<sup>12</sup> Assuming 85,000 firework types, with no reduction in testing costs due to grouping

product type that is introduced.<sup>13</sup> Based on the estimate of 320 new products per year from UK manufacturers, this would imply an additional cost to industry of up to **£2,400 per year**.

40. There may also be some familiarisation costs associated with the Directive. However, given their similarity with existing UK standards, these costs are unlikely to be significant and responses to the BIS consultation did not give any further information on the extent of these costs.

*- benefits*

41. Potential benefits from the Directive could be derived from several sources: savings to business through a reduction in costs of compliance with multiple national pyrotechnic regulations; benefits to business and consumers from reduced intra-EU barriers to trade, and a reduction in the number of pyrotechnic-related accidents.

42. In relation to the first of these, the European Commission expects the overall impact of the Directive to reduce compliance costs for businesses, as a single assessment of conformity will replace up to 27 parallel national approvals. However, responses to the BIS consultation suggested that most firework markets are nationally-based, so there is limited scope for cross-border trade. Furthermore, recent changes to regulations regarding the transportation of explosives (ADR) have increased transport costs and limitations on import/export ports in the UK place further constraints on UK trade growth.

43. This argument also applies to any potential economies of scale which might be achieved in the manufacture of fireworks, even though the majority of this takes place outside the EU. If nationally-based preferences for different specification of fireworks persist (and there is no reason to suspect that such preferences will be affected by the implementation of the Directive), then countries will still demand different types of firework and so there will not be any efficiency gains through economies of scale.

44. Responses to the BIS consultation suggested that elements of the manufacturing process may also inhibit the extent to which economies of scale can be achieved – for example, there are limits to the amount of hazardous material that is allowed on manufacturing premises at any one time. In addition, if there is no rationalisation of the testing procedures through group testing of similar types of firework, then there will be no potential reduction in the additional costs to EU (and hence UK) businesses of paying for the third-party testing of different firework types.

45. The net effect is unclear. It is impossible without any data to estimate the nature of potential cost reductions facing (primarily Chinese-based) manufacturers and the extent of multi-country exports within the EU.

46. The second of these benefits depends on the extent to which cross-border trade in fireworks may potentially increase following implementation of the Directive. The harmonisation of standards could benefit UK manufacturers and (to a lesser extent) importers, as fireworks could be more freely traded across the EU. Although intra-EU trade in fireworks appears to be limited, differences in regulatory arrangements between Member States could potentially be an explanatory factor. However, respondents to the BIS consultation indicated that the primary reason for the lack of cross-border trade was due to preferences for different types of firework across Member States. This would imply that the harmonisation of EU regulatory frameworks would have a negligible impact.

47. Differences in languages and preferences for types of fireworks across the EU, transportation costs and the fact that Member States would be allowed to maintain restrictions on certain firework types may limit the potential gains from intra-EU trade for UK businesses. However, if there is greater competition from non-UK manufacturers and importers it is possible that, due to increased competition and lower unit costs of production, UK consumers will benefit from higher-quality, lower-price fireworks as a result of the Directive. However, it is not possible to quantify this effect and it is acknowledged that this could have negative effects for nationally-focused UK firms.

48. Finally, there may be benefits resulting from a reduction in firework-related accidents and any consequent harm caused to UK consumers. As discussed earlier, the proportion of firework-related accidents in the UK resulting from malfunction would appear to be very low. Nevertheless, the standardisation of safety requirements across the EU will make national market surveillance activities easier, as well as facilitating co-ordinated market surveillance actions at EU level. This could lead to a further reduction in the risk of fireworks causing injury and harm through malfunction. Further,

---

<sup>13</sup> Based on industry response to BIS consultation, which indicated that such activity would take around 15 minutes per product type, at a cost of £30 per hour

greater harmonisation will make it easier to comply with legislation in different Member States, which should act as a deterrent to illegal imports and distribution in the first place.

49. In addition, labelling requirements introduced by the Directive should also lead to better-informed (and therefore more careful) consumers, further reducing the risk of accidents. However, it is not possible to quantify these benefits.
50. Overall, although the benefits of implementing the Directive through regulation may be minimal for the UK, it may be of greater benefit to other EU member countries and has to be implemented in order to harmonise standards of pyrotechnic products within the EU.

### *Other pyrotechnic articles*

51. As set out above, approval processes for other automotive-related pyrotechnic articles currently use national regulations and laws, which vary between Member States with limited cross-border recognition.
52. The Directive will eliminate barriers to trade of these pyrotechnic articles, which should enhance intra-EU competition, leading to lower costs for manufacturers – as a single CE assessment of conformity will replace up to 27 national approval procedures – and therefore lower prices for consumers. However, the extent of this cost reduction cannot be estimated, as detailed data on the costs of approval in individual Member States and the number of separate approvals each pyrotechnic article must go through is not available.<sup>14</sup> Although such cost reductions could be considerable, we do not have any evidence to suggest that there are many UK-based manufacturers of such items who may benefit.
53. Other non-automotive pyrotechnic articles (e.g. nail guns, shroud cutters, bird-scarers), will also be subject to the regulations on essential safety standards, but manufacturing costs of these items are unlikely to be significantly affected.

### **Risks and assumptions**

54. The main risk is that the Directive will result in higher costs borne by importers of pyrotechnic articles, particularly fireworks, in the UK with no attendant safety benefits to UK consumers. There is also a risk that these higher costs are not passed onto consumers, leading to higher prices.
55. In relation to the cost profile set out above, assumptions have been made about when the additional costs associated with type testing will be incurred, based on the extent to which such costs relate to renewal of existing firework types or testing of new firework types.

### **Admin burden and policy savings calculations**

56. There are two sets of extant regulatory obligations relevant to the Pyrotechnics Directive – the Fireworks (Safety) Regulations 1997 (with an associated admin burden of £18 per year) and the Fireworks Regulations 2004 (with an associated admin burden of £333,649 per year). Analysis of these regulations indicates that all of these regulations will be retained in one form or another, either as part of existing regulations or new regulations implementing the Directive. There is therefore no reduction in the existing admin burden.
57. Implementation of the Directive does not create any additional admin burden for industry, as the changes to testing requirements are classified as a policy cost. Overall, this means that there is also no policy cost saving.

### **Summary and preferred option**

58. Within Europe most countries currently have national legislation and standards which classify pyrotechnic articles. The variations are wide-ranging and as a consequence the European Commission has proposed harmonisation of these with the aim of addressing four major issues:
  - Ensuring the free movement of pyrotechnic products within the EU,
  - Improving the protection of consumers and professionals,
  - Contributing to the reduction of injuries, and
  - Harmonising the safety requirements applicable in different Member States.

---

<sup>14</sup> The only data available on approval costs relate to Germany where each approval costs companies about €25,000.

59. The adoption of Directive 2007/23 extends the regime to all pyrotechnic articles and will require their type testing by a notified body. It essentially complements similar legislation in place for civil explosives.
60. Recognising the differences in the markets between fireworks which are available to the general public (for which standards have largely been developed) and the remainder of pyrotechnic articles, the provisions for category 1, 2 and 3 fireworks will be applied from 4 July 2010, and the provisions relating to other pyrotechnic articles from 4 July 2013, primarily allowing time for harmonised standards to be agreed. All existing products on the market which comply with existing rules will be allowed to remain on the market until 2017.
61. The Directive also recognises that different Member States have totally different traditions in the use of fireworks. It therefore allows individual Member States to retain bans on particular types of fireworks for sale to the general public on safety or security grounds and on the same criteria to maintain existing age limits on the supply of pyrotechnic articles.
62. The preferred option, following consultation, is option 3 – to implement the Directive through regulation. This is felt to be the most suitable option, given that non-compliance with the Directive (option 1) is not a practicable choice and voluntary implementation of agreed industry standards (option 2) is not seen as a suitable approach for implementing safety standards regarding pyrotechnic articles.

## **Implementation**

63. The Directive must be implemented by adopting national provisions by 4 January 2010 which come into force on 4 July 2010 in respect of category 1, 2 and 3 fireworks – those categories which may be sold to the general public. The Regulations will expressly preclude the use of those particular fireworks which are currently excluded from use in the UK. The UK will however remove certain existing prohibitions, for example, on fireworks of a certain weight and size and non-listed fireworks. The Regulations applicable to fireworks not for sale to the general public and other pyrotechnic articles will enter into force on 4 July 2013.
64. Pyrotechnics which conform to existing legislation, including current British standards (and equivalent standards) will be allowed on the UK market until 2017, which should allow for such articles to be supplied for that period.

### *Measures beyond EU minimum requirements*

65. As stated above, the Directive allows Member States to retain bans on particular types of fireworks being sold to the general public and maintain existing age limits on the supply of pyrotechnic articles, on safety or security grounds.
66. In relation to the first of these, the UK is choosing to exercise its rights to restrict the sale of certain types of fireworks (e.g. bangers, mini-rockets, aerial shells and fireworks with erratic flight), as it is thought that such fireworks are potentially dangerous to the public.
67. Under the Directive, the age limit below which the sale of fireworks is restricted is 12. The UK is choosing to maintain its current restrictions of age 16 for category 1 and age 18 for all other categories. Although on the grounds of safety it could be argued that restrictions for certain fireworks (e.g. Christmas crackers) should be lowered to 12, this would lead to separate rules for different types of fireworks within the same category, which would be very difficult to regulate and enforce. It should be noted that the majority of responses to the BIS consultation indicated that the preference for age limits should be increased to 18 for all fireworks.

## **Monitoring and evaluation**

68. The Health and Safety Executive is currently responsible for enforcement of the rules on transport and storage of certain categories of pyrotechnics, whilst local authorities are responsible for licensing of smaller storage sites and the retail sector. This work is currently carried out by Trading Standards Departments and district councils in NI.
69. These basic responsibilities will not change. Part 2 of the draft Regulations will mainly be enforced by the local authorities, with Part 3 which covers category 4 pyrotechnic articles, theatrical pyrotechnic articles and other pyrotechnic articles mainly enforced by the Health and Safety Executive and the HSE for Northern Ireland. The Pyrotechnic Directive sets out specific rules on market surveillance of pyrotechnic articles. The Directive will be complemented by the general rules on accreditation and market surveillance which are set out in Regulation 765/2008 on accreditation and market

surveillance (RAMS) which is due to enter into force on 1 January 2010, and complying with those requirements may require additional resources.

70. The EU Commission will continue to compare accident data in order to assess the effectiveness of the Directive. The Commission will also monitor the costs for fireworks and automotive pyrotechnics approvals across Member States in order to ensure cost savings can be realised by those companies which are active on the EU market. The compliance of industry and importers with the requirements of the Directive will also be monitored. Within the EU, coordinated market surveillance activities including random testing of products available on the market will play a role in ensuring that products meet essential safety requirements.
71. A post-implementation review of the impact of the Directive on the UK will be carried out in July 2015.

## **Specific Impact Tests**

### *Competition Assessment*

72. Implementation of the Directive does not place any additional restrictions on the sales of pyrotechnic articles, their importation or manufacture in the UK (or the EU) over and above those already in place. If anything, the harmonisation of regulations across the EU could facilitate intra-EU trade in pyrotechnic articles, potentially leading to increased intra-EU competition.
73. The introduction of third-party conformity testing by notified bodies (and associated fixed costs of such tests) could disproportionately affect smaller competitors, indirectly leading to consolidation in the sale, importation or manufacture of pyrotechnic articles. However, such costs may be mitigated by competition between notified bodies to provide conformity testing.
74. Indirectly, implementation of the Directive may also lead to narrowing of types of firework type offered to intermediaries by manufacturers. Given that the costs of conformity testing cannot be averaged out across all importers of a particular firework (resulting in a 'first mover disadvantage', where the initial requester of the firework type pays the costs upfront), this may lead to less types being subjected to third-party testing (as previously-tested fireworks may be cheaper). If this happens, innovation may be stifled, less firework types may be manufactured, leading to less consumer choice, potential consolidation among firework manufacturers and potentially higher prices for fireworks across all categories (if manufacturers start to gain market power within the smaller market).
75. Despite this, there is unlikely to be a significant impact on competition in relation to pyrotechnic articles.

### *Small Firms Impact Test*

76. The increased costs of conformity testing under the Directive could fall disproportionately on SMEs as the majority, if not all, EU manufacturers and importers of fireworks are SMEs. For automotive pyrotechnic articles there is no differential impact on SMEs as all firms will face similar or lower costs under the new system due to increased competition among testing authorities and due to one test series being necessary for the entire EU. A positive impact for small firms is the improved assurance of compliant goods, which would provide certainty for SMEs importing, distributing or selling such goods.
77. Overall, it is expected that there will be no significant impact on small firms.

### *Health Impact Assessment*

78. After careful consideration of the issues and screening against the Department of Health's HIA screening questions, we have concluded that a full Health Impact Assessment is not required. While it is acknowledged that fireworks are potentially hazardous, (there being approximately 1,000 accidents per year involving fireworks), it is felt that the new regulations will not make a significant difference to the accident rate. However, to the extent that there is an impact, harmonised European safety standards should ultimately increase safety, although this potential impact is not directly measurable.

### *Other specific impact tests*

79. Other specific impact tests have been considered, including the Justice System, Sustainable Development, Carbon Assessment, Other Environment, Race Equality, Disability Equality, Gender Equality, Human Rights and Rural Proofing. After careful analysis it has been concluded that no significant impact is anticipated in any specific cases above.

## Annexes

Annex 1 should be used to set out the Post Implementation Review Plan as detailed below. Further annexes may be added to provide further information about non-monetary costs and benefits from Specific Impact Tests, if relevant to an overall understanding of policy options.

### Annex 1: Post Implementation Review (PIR) Plan

A PIR should be undertaken, usually three to five years after implementation of the policy, but exceptionally a longer period may be more appropriate. A PIR should examine the extent to which the implemented regulations have achieved their objectives, assess their costs and benefits and identify whether they are having any unintended consequences. Please set out the PIR Plan as detailed below. If there is no plan to do a PIR please provide reasons below.

**Basis of the review:** [The basis of the review could be statutory (forming part of the legislation), it could be to review existing policy or there could be a political commitment to review];

This Final Stage impact assessment committed to a post implementation review in July 2015.

**Review objective:** [Is it intended as a proportionate check that regulation is operating as expected to tackle the problem of concern?; or as a wider exploration of the policy approach taken?; or as a link from policy objective to outcome?]

There are two main objectives: to determine the extent to which the Directive has met its objectives as a result of UK implementation, and to validate the costs and (though not quantified) the benefits indicated in the assessment.

**Review approach and rationale:** [e.g. describe here the review approach (in-depth evaluation, scope review of monitoring data, scan of stakeholder views, etc.) and the rationale that made choosing such an approach]

BIS will survey key stakeholders – test houses, enforcers, and key industry organisations and consumer groups – to assess the impact of the Directive. This is thought to be the least burdensome and most sensible approach.

Providing that an appropriate UK notified body is established, BIS will liaise with this organisation to find out the impact resulting from the implementation of the Directive.

**Baseline:** [The current (baseline) position against which the change introduced by the legislation can be measured]

The base case of ‘do nothing’ – i.e. current UK practice with no implementation of the Directive – is used to measure the extent to which the outcomes of the Directive met its objectives.

**Success criteria:** [Criteria showing achievement of the policy objectives as set out in the final impact assessment; criteria for modifying or replacing the policy if it does not achieve its objectives]

To measure the impact of the directive against the objectives, the following broad indicators, which the UK implementation of the Directive is expected to contribute towards, are:

- Improved cross-border (and more widely intra-EU) trade in pyrotechnic articles that are compliant with the Directive’s requirements,
- Improved protection of consumers and professionals and improved certainty for businesses,
- Enforcers and test houses may report a degree of reduction in non-compliant articles reaching the UK, facilitating enforcement,
- Possible decrease in accident rates from fireworks as a broader indicator.

It should be noted that these are indicators and may not be directly attributable to the impact of the Directive. Nevertheless, these help give a sense of scale of the impact. There may be other wider factors, such as the level of trade of pyrotechnic articles, that may need to be considered in the context of similar requirements on pyrotechnic articles.

**Monitoring information arrangements:** [Provide further details of the planned/existing arrangements in place that will allow a systematic collection of monitoring information for future policy review]

The European Commission will continue to compare accident data in order to assess the effectiveness of the Directive. The Commission will also monitor the costs for fireworks and automotive pyrotechnics approvals across Member States in order to ensure cost savings can be realised by those companies which are active on the EU market.

The compliance of industry and importers with the requirements of the Directive will also be monitored.

Within the EU, coordinated market surveillance activities including random testing of products available on the market will play a role in ensuring that products meet essential safety requirements. Information on the LOCEF database will be periodically monitored to evaluate the number of extant approved firework types in the UK.

**Reasons for not planning a PIR:** [If there is no plan to do a PIR please provide reasons here]

N/A