



# Summary: Analysis & Evidence

# Policy Option 1

Description: Do Nothing

## FULL ECONOMIC ASSESSMENT

Price Base Year 2015	PV Base Year 2016	Time Period Years 10	Net Cost (Present Value (PV)) (£m)		
		Low: Nil	High: Nil	Best Estimate: Nil	

<b>COSTS (£m)</b>	<b>Total</b> (Constant Price)	<b>Transition</b> Years	<b>Average</b> (excl. Transition)	<b>Annual</b> (Constant Price)	<b>Total</b> (Present Value)	<b>Cost</b>
<b>Low</b>	Nil	1	Nil		<b>Nil</b>	
<b>High</b>	Nil		Nil		<b>Nil</b>	
<b>Best Estimate</b>	Nil		Nil		<b>Nil</b>	

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

This option continues with the status quo and would lead to no additional costs or benefits.

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

This option continues with the status quo and would lead to no additional costs or benefits.

<b>BENEFITS (£m)</b>	<b>Total</b> (Constant Price)	<b>Transition</b> Years	<b>Average</b> (excl. Transition)	<b>Annual</b> (Constant Price)	<b>Total</b> (Present Value)	<b>Benefit</b>
<b>Low</b>	Nil	1	Nil		<b>Nil</b>	
<b>High</b>	Nil		Nil		<b>Nil</b>	
<b>Best Estimate</b>	Nil		Nil		<b>Nil</b>	

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

This option continues with the status quo and would lead to no additional costs or benefits.

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

This option continues with the status quo and would lead to no additional costs or benefits.

<b>Key assumptions/sensitivities/risks</b>	Discount rate (%)	3.5
N/A		

## BUSINESS ASSESSMENT (Option 1)

<b>Direct impact on business (Equivalent Annual) £m:</b>			<b>In scope of OITO?</b>	<b>Measure qualifies as</b>
<b>Costs:</b> Nil	<b>Benefits:</b> Nil	<b>Net:</b> Nil	N/A	N/A

# Summary: Analysis & Evidence

# Policy Option 2

Description: Retain the regulations but remove redundant material and simplify where possible

## FULL ECONOMIC ASSESSMENT

Price Base Year 2015	PV Base Year 2016	Time Period Years 10	Net Cost (Present Value (PV)) (£m)		
			Low: Nil	High: Nil	Best Estimate: Nil

COSTS (£m)	Total (Constant Price)	Transition Years	Average (excl. Transition) (Constant Price)	Annual (Constant Price)	Total (Present Value)	Cost
Low	0.4	1	Nil			<b>0.4</b>
High	0.8		Nil			<b>0.8</b>
Best Estimate	0.6		Nil			<b>0.6</b>

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

Option 2 is to retain the current regulations, but to remove and simplify redundant material and simplify where possible. In practice, no new duties would be imposed; the purpose of the consolidation is to make it simpler for dutyholders to understand their obligations under the regulations and comply with the law. Given this, HSE expects the costs to business to be limited to one-off familiarisation costs for those businesses operating in sectors affected by DSHAR that take time to read and understand the changes. These are estimated to be between £411,000 and £823,000, with a best estimate of £617,000 (ten-year present values).

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

None identified.

BENEFITS (£m)	Total (Constant Price)	Transition Years	Average (excl. Transition) (Constant Price)	Annual (Constant Price)	Total (Present Value)	Benefit
Low	Nil	1	0.05			<b>0.4</b>
High	Nil		0.1			<b>0.8</b>
Best Estimate	Nil		0.1			<b>0.6</b>

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

HSE expects any one-off costs of familiarisation to be at least offset by ongoing savings to business as a result of consulting shorter regulations and a shorter, simpler ACOP. Accordingly, the proposal is expected to be largely cost neutral. This was supported by respondents during the public consultation. To offset the total costs of familiarisation, this would require total savings to businesses of between approximately £48,000 and £96,000 per annum, with a best estimate of £72,000. This is equivalent to time savings in the region of 20 minutes per business per year.

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

A number of other potential benefits to business as a result of the DSHAR review were identified. It was not possible to quantify and monetise all of these for the purposes of this final stage impact assessment, however HSE expects that in the majority of cases the benefits would likely be small. These include: adding a greater degree of flexibility for ports to accept less than the current requirement of 24 hours' notice of the arrival of dangerous goods in harbour areas when it is safe for them to do so; removing a requirement for harbours to be licensed by HSE to handle explosives when ships are passing through without loading or unloading; and a reduction in the time for which records for explosives handled in the harbour areas need to be kept from 5 years to 3 years.

### Key assumptions/sensitivities/risks

Discount rate (%) 3.5

The costs estimated in this impact assessment are sensitive to the number of businesses likely to be affected by the proposal. These include, *inter alia*, businesses operating within the harbour area itself, and providing support activities therein, as well as those businesses involved in the transport of dangerous goods to harbours and harbour areas. HSE has reviewed the assumptions surrounding the number of businesses during consultation and discussion with industry and concluded that these assumptions are reasonable and proportionate.

## BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:			In scope of OITO?	Measure qualifies as
Costs: 0.1	Benefits: 0.1	Net: Nil	Yes	Zero Net Cost

# Evidence Base

## 1. Background

1. The Dangerous Substances in Harbour Areas Regulations (DSHAR) govern the safe storage, handling, loading, unloading and carriage of dangerous substances when they enter harbours and harbour areas. “Dangerous substances” is given a complex definition, but it roughly corresponds to criteria used to define goods as dangerous for transport by road, rail or sea. It covers substances that are explosive, oxidising, flammable, toxic, corrosive, infectious or radioactive, among other things.
2. The transit of dangerous substances in ports is an intrinsically high-hazard activity, with the potential for major accidents involving multiple casualties in the port itself and in the surrounding area. The regulations were originally introduced following an oil tanker explosion in Bantry Bay, Ireland in 1979 and are aimed at reducing the risk of such accidents by co-ordinating activities between ship and shore. Provisions in DSHAR include a requirement for dangerous substances to be notified to the harbour master, normally 24 hours before entry into a harbour; requirements for safe handling of dangerous substances and prevention of fires; requirements for specific precautions when transferring liquid dangerous substances in bulk; rules for packaging and labelling dangerous substances; requirements for harbour authorities to produce emergency plans; and requirements for harbours to be licensed before explosives are brought in or handled. There have been no major accidents related to dangerous substances in harbour areas subsequent to the entry into force of these regulations, though of course it is difficult to assess the contribution the regulations have made to ensuring this.
3. HSE has reviewed the regulations as part of its response to the Red Tape Challenge. The review looked broadly at whether the regulations are still needed and if so, whether they needed to be updated or amended. In particular the review considered whether the regulations still make sense in light of how port operations are currently managed, whether the regulations are superseded or duplicated by more recent legislation, and whether there are opportunities to simplify or rationalise the regulations. During the review HSE worked with, and took evidence from, a wide variety of interested parties including harbour authorities, transport and shipping interests, trade unions, other government departments and other stakeholders.
4. The regulations are supported by an [Approved Code of Practice \(ACOP\)](#)<sup>1</sup> and a guidance document, [A guide to the Dangerous Substances in Harbour Areas Regulations 1987](#).<sup>2</sup> These were also reviewed as part of the project.

## 2. Problem under consideration and rationale for intervention

5. HSE’s review of DSHAR identified that some of the provisions in DSHAR are no longer fit for purpose. In some cases this is because they have been superseded by newer regulations. In other cases, this is because they do not reflect current work practices or technology, or fail to align with other standards or legislation such as the International Maritime Organisation’s International Maritime

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<sup>1</sup> <http://www.hse.gov.uk/ports/dshar-cop18.pdf>

<sup>2</sup> <http://www.hse.gov.uk/pubns/priced/hsr27.pdf>

Dangerous Goods Code, which all parties who transport packaged dangerous goods by sea have to comply with. However this was not universally the case. Other sections of DSHAR are not duplicated and remain relevant to reducing the risk of major accidents arising from dangerous substances in harbour areas and were therefore judged to still be necessary

6. The review identified that the ACOP and guidance also contained much redundant and outdated material. However, again, some sections were still important to explain how to comply with the regulations, and it is proposed to update and retain these in a single new consolidated ACOP.
7. The rationale for intervention is therefore to address the redundant and outdated material in the regulations, guidance and ACOP. It is proposed to replace them with a shorter, simpler set of regulations that retain key protections while making the regulations much simpler and clearer for dutyholders to use. The current guidance and ACOP would also be replaced with a single, shorter ACOP, which gives essential information on how to comply with the new regulations.

### **3. Policy objectives**

8. The policy objectives of the changes being proposed are:
  - a) To remove redundant material from the regulations;
  - b) To update and modernise the requirements so that the regulations align with other legislation and standards, are expressed as simply and clearly as possible and are appropriate in view of modern work practices and technologies;
  - c) To maintain proportionate levels of protection against health and safety risks relating to dangerous substances in ports, in particular risks of major accidents;
  - d) To update the supporting ACOP and guidance so that redundant material is removed and so that it provides advice to dutyholders on how to comply with the law in the clearest and most concise way;
  - e) In doing a) – d) to make it simpler and easier for dutyholders and those responsible for managing health and safety for workers to comply with the law.

### **4. Options considered**

9. A number of options have been considered during the project, including the use of non-regulatory approaches. The main options that have been considered are:
  - a) *Do nothing.*
  - b) *Minimal update – i.e. retain the current provisions and make minimal changes to ensure the drafting and references are up to date*
  - c) *Retain the regulations but remove redundant material and simplify where possible*
  - d) *Revoke the regulations entirely, replacing them with non-regulatory approaches*
10. Option a), *do nothing*, has been considered but is not desirable since the review of DSHAR has identified that parts of the regulations are out of date or duplicated by other legislation. Retaining the regulations as they stand would not be in line

with better regulation principles and would not deliver the objectives of the Red Tape Challenge.

11. Option b), *minimal update*, is also not tenable and has not been pursued for similar reasons – some aspects of the regulations would be brought up to date but many of the provisions would still be redundant. Retaining them would not be in line with the objectives of the Red Tape Challenge.
12. Option c), *Retain the regulations but remove redundant material and simplify where possible*. This is the preferred option as it would remove redundancy and simplify the provisions, making it easier for dutyholders to comply. This option would therefore improve the regulations in line with the objectives of the Red Tape Challenge. However key safety provisions would also be retained and we would not increase risks of major accidents relating to dangerous substances in harbours.
13. Option d), *Revoke the regulations entirely, replacing them with non-regulatory approaches*, was considered. Non-regulatory approaches could include the use of non-statutory guidance to influence health and safety standards, replacing the current regulations. However, complete revocation would remove provisions that remain crucial to preventing major accidents in harbours, and hence lead to significant gaps in regulatory coverage. Examples include safety and security provisions relating to explosives, and the requirement for harbour authorities to put in place emergency plans to deal with accidents involving dangerous substances. Given the high-hazard nature of the activities being regulated and the potential for catastrophic accidents, relying on non-regulatory approaches is not appropriate. This option has therefore been ruled out and is therefore not considered further in this Impact Assessment.
14. For the remainder of this Impact Assessment, only Option c), remove redundant material and simplify where possible, and, option a), Do nothing are further considered. Option a) will henceforth be referred to as **Option 1**. The preferred option, Option c), will be referred to as **Option 2**.
15. A summary of the main changes that will take place under **Option 2** (preferred option) is given below.
16. We propose to retain about half of the current regulations in updated and simplified form. The retained sections cover:
  - a) A requirement for dangerous goods to be pre-notified prior to entry into harbours;
  - b) Powers allowing harbour masters to regulate dangerous goods (and vehicles and vessels carrying them) where they are causing concern due to their condition;
  - c) Requirements for vessels carrying defined quantities of certain dangerous goods to display warning flags or lights
  - d) Requirements for harbour authorities to produce emergency plans for dangerous substances in the harbour area;
  - e) A requirement for berth operators or harbour authorities to put in place designated parking areas for road vehicles carrying dangerous goods
  - f) Licensing, safety and security requirements for explosives in harbour areas;
  - g) Enforcement powers and powers for harbour authorities to make byelaws relating to dangerous substances.

17. We also propose to revoke a number of sections of the regulations which were found to be duplicated or superseded by other legislation, including health and safety legislation, maritime legislation and legislation on the transport of dangerous goods.

18. The redundant sections cover:

- a) Marking and navigation of vessels carrying dangerous substances (other than flags and lights – see 16(c) above);
- b) General requirements for the safe handling of dangerous substances and prevention of fires and explosions;
- c) Safety requirements relating to the transfer of liquid dangerous substances in bulk;
- d) Packaging and labelling of dangerous substances
- e) Storage of dangerous substances.

19. In addition Option 2 will involve making a number of further amendments to simplify and update the regulations. The major changes are:

- a) Aligning the definition of ‘dangerous substance’ (now ‘dangerous goods’) with international standards governing the transport of dangerous goods by sea, and simplification of some of the current exemptions to DSHAR (with the effect of either retaining or extending the existing exemptions);
- b) Adding a greater degree of flexibility for ports to accept less than the current requirement of 24 hours’ notice of the arrival of dangerous goods in harbour areas when it is safe for them to do so;
- c) Removing a requirement for harbours to be licensed by HSE to handle explosives when ships are passing through without loading or unloading. This will be replaced with a more proportionate requirement for ships carrying explosives to notify the harbour before passing through;
- d) Adding more flexibility to the requirements on explosives security. This will be done by replacing the current requirement for berth operators and harbour authorities to appoint Explosives Security Officers, with a goal-setting requirement to take all necessary precautions to ensure the security of explosives;
- e) A reduction in the time for which records for explosives handled in the harbour areas need to be kept from 5 years to 3 years, to align with similar requirements in the Explosives Regulations 2014.

## **5. Research undertaken to inform the IA**

20. A public consultation was published on HSE’s website. The consultation ran for a period of eight weeks, beginning on 28 October and closing 23 December 2015. During this time, 21 responses were received.

21. Of these 21 responses, 14 answered questions relating to the impact of the changes on business, for instance around the likely scale of initial familiarisation costs and process by which businesses in their sector read and understand their obligations under DSHAR. Most of these stated they were responding on behalf of industry; the rest were from consultancies, a charity, a local authority and a trade association. Responses to the public consultation have been used to inform the following estimates in this final (validation) stage impact assessment.

HSE also contacted the Road Haulage Association (RHA) to obtain further information around the likely impact of changes to DSHAR on the freight transport by road industry following the public consultation. This helped to clarify areas of uncertainty, for instance around the likely number of businesses operating in this sector who would take time to initially read, understand and communicate any changes under the new Regulations and Guidance. Estimates of some other parameters (proportion of harbours handling dangerous goods; proportion of haulage firms likely to take dangerous goods into harbour areas) were also estimated on the basis of consultation with industry and government experts prior to consultation.

## **6. General Assumptions**

### **6.1. Time Horizon and Discounting**

22. We assume an appraisal period of 10 years, applying a discount rate of 3.5% per annum, consistent with HM Treasury's (HMT) Green Book.<sup>3</sup>
23. We assume that one-off costs and savings are borne in the first year of the appraisal period (i.e. Year 1, which is 2016, the year of implementation). We also assume that any on-going costs and cost savings are borne each year from Year 1 to Year 10, unless otherwise stated.
24. All figures are in 2015 prices, unless stated otherwise.

### **6.2. Cost of Time**

25. We assume a working week of 37.5 hours, with 7.5 hours in a working day.
26. The following analysis assumes that the value of employee time is the opportunity cost of that time to the employer. This will be equal at the margin to the cost of labour to the employer; that is, the gross wage rate plus any non-wage labour costs that the firm faces, such as national insurance and pension contributions. The rationale for this is that a firm will hire workers up until the point at which the cost of doing so (i.e. the wages plus various non-wage costs paid on employed labour) is equal to the value the firm receives for the output of the additional worker.
27. Information on wage rates is taken from the ONS' Annual Survey of Hours and Earnings (ASHE), which provides data on wage rates by occupation and industry.<sup>4</sup>
28. The following analysis assumes a cost of time of £36.22 per hour. This comprises the median hourly wage rate of a functional (Health and Safety) manager of £27.86 per hour, uprated by 30% in accordance with HMT Green Book guidance.<sup>5</sup> This cost of time was validated by industry during the public consultation.<sup>6</sup>

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<sup>3</sup>[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/220541/green\\_book\\_complete.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220541/green_book_complete.pdf)

<sup>4</sup> ASHE 2014 (provisional) Table 14.5a – Occupation. Median hourly wage rate for functional managers and directors, SOC113.

<http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcn%3A77-337425>

<sup>5</sup> Following the DSHAR Public Consultation, HSE updated its practice for valuing the cost of time in policy appraisal. Hourly wage rates are now uprated by 19.8% as opposed to 30%,



### 6.3. Number of businesses affected

29. DSHAR covers a number of different activities in ports, including the safe storage, handling, loading and unloading of dangerous substances when they enter harbours and harbour areas. This means the regulations cover both the “wet” and “dry” sides of a harbour and affect all those bringing dangerous goods into the port, either in packages or in bulk. It also affects personnel handling dangerous goods in the port area, e.g. masters of vessels, stevedores<sup>7</sup>, storage operators, security personnel, harbourmasters, hauliers and rail operators.
30. The Inter Departmental Business Register (IDBR) provides data on enterprises by Standard Industrial Classification (SIC) of economic activity.<sup>8</sup> Table 1 is taken from the IDBR and provides information on the number of enterprises that may be affected by any changes to DSHAR. It is important to note that there is no SIC code that covers all of the relevant activity and nothing more; and in a number of instances the 5-digit SIC code also includes activities that are not relevant to the proposal.<sup>9</sup> In these circumstances, the estimates are likely to represent an overestimate for the number of dutyholders that the regulations apply to. However, this is deemed a proportionate and simplifying assumption for the purposes of this validation-stage impact assessment.

**Table 1: Standard Industrial Classifications for activities in harbour areas**

SIC	Description	Number of Enterprises
49200	Freight transport by rail	35
49410	Freight transport by road	31,375
50200	Sea and coastal freight water transport	635
50400	Inland freight water transport	80
52220	Service activities incidental to water transportation	785
52241	Cargo handling for water transport activities of division 50	110
52290	Other transportation support activities	3,785
	<i>Total</i>	<i>36, 805</i>

**Note:** Total may not sum due to rounding. Source:

<https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?opt=3&theme=&subgrp=>

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reflecting more recent and robust information on non-wage costs. However, this change occurred *after* the start of the consultation period. Accordingly, the approach to costing time published in the consultation document and subsequently validated by industry (discussed above) is used for this final stage impact assessment.

<sup>6</sup> One respondent explicitly raised concerns regarding the cost of time used, suggesting a value of around £66 per hour was more appropriate for businesses in their sector. However, given that most respondents to this question agreed with the assumption, we believe the original cost of time presented in the public consultation to be appropriate as a broad average across all industries.

<sup>7</sup> ‘Stevedore’ is the name used to describe someone who transfers cargo between ship and shore, either mechanically or manually

<sup>8</sup> <http://www.ons.gov.uk/ons/about-ons/products-and-services/idbr/index.html>

<sup>9</sup> For example, SIC code 50400 includes the transport of freight via rivers, canals, lakes and other inland waterways (which are not in scope of DSHAR), alongside harbours and ports.

31. During the public consultation, respondents were asked to consider the estimates of the industry sectors and number of enterprises affected by changes under DSHAR presented in Table 1. 8 out of 9 respondents to this question agreed with the estimates; however one suggested that a number of further SIC codes could be included to capture those businesses operating in the entertainment sector in harbours (i.e. firework displays on vessels), who have duties under DSHAR. These were SIC codes 90010 *Performing Arts*, 90020 *Support activities to performing arts*, and 90030 *Artistic creation*. However, these SIC codes are extremely broad, and cover a wide range of activities covering theatrical presentations, concerts and operas; the activities of directors, producers, and stage designers; as well as individual artists such as sculptors, painters, writers and journalists. There is no way to break these down further to identify the number of businesses in the entertainment sector working in harbours; however HSE expert opinion is that this number will be extremely small. Accordingly, these SIC codes have not been included in further cost calculations.
32. All of the above SIC codes concern general freight and cargo, whereas DSHAR only concerns cargoes that are dangerous according to specified criteria. Data is not currently available on the types of activity that deal with dangerous substances within the harbour and harbour areas; however, HSE estimates that it is reasonable to assume that the majority of these enterprises may at some point deal with dangerous substances. All respondents to this question on the public consultation agreed with this assumption.
33. Discussions with a number of industry and government experts suggest that only a small proportion (around 10%) of the enterprises involved in the transportation of freight by road (SIC code 49410 in Table 1) will bring dangerous goods into harbours and harbour areas. Therefore, it is estimated that approximately 3,138 businesses transport dangerous goods to harbour areas by road, and thus would be affected by changes under DSHAR. This was validated by respondents during the public consultation.
34. The following analysis assumes that the number of businesses that operate in the above sectors will remain the same over the course of the appraisal period. In reality, there may be a number of new businesses that enter the market over the ten-year period, and hence benefit from familiarising themselves with the revised, simpler Regulations and guidance. However, brief analysis of business demography data on business births from the Office for National Statistics (ONS) over the period 2009 to 2014 for the relevant SIC codes suggests that these are relatively mature sectors with little “churn”, with the exception of the freight transport by road industry.<sup>10</sup> Feedback from the public consultation, however, suggested that the majority of businesses operating in this sector familiarise on an ad hoc basis. Accordingly, ongoing savings to new businesses familiarising themselves with the revised regulations and guidance are expected to be limited, and this is deemed a simplifying assumption.

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<sup>10</sup> Business Demography 2014, Table 1.2 – Count of Births of New Enterprises for 2009 to 2014, Standard Industrial Classification (SIC2007) Group. Available at: <http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcn%3A77-412448>

## **7. Analysis of Costs and Benefits**

### ***Option 1 – Do Nothing***

35. Under the 'Do Nothing' baseline, the current Dangerous Substances in Harbour Areas Regulations, accompanying ACOP and guidance document would remain unchanged. As this represents the baseline, there would be no additional costs and/or benefits.

### ***Option 2 (preferred option) – Retain the regulations but remove redundant material and simplify where possible***

#### **7.1. Costs to business**

36. The following section describes the approach to estimating one-off costs to business.
37. As described in paragraph 12, the proposal under Option 2 is to retain the current regulations, but to remove and simplify redundant material and simplify where possible. In many instances, this would involve the relaxing or removal of requirements on business. In practice, no new duties would be imposed; the purpose of the consolidation is to make it simpler for dutyholders to understand their obligations under the regulations and comply with the law. Given this, HSE expects the costs to business to be limited to one-off familiarisation costs for those businesses operating in sectors affected by DSHAR that take time to read and understand the changes. It is expected, however, that these one-off costs would be offset by ongoing savings to business as a result of consulting short, simpler regulations or guidance in the future. Accordingly, HSE expects the changes to be largely cost neutral. All respondents to this question on the public consultation agreed with this assumption.
38. The majority of changes relate to the removal of sections of the current regulations that have been superseded by more recent legislation, and the revision and simplification of remaining sections. In addition, a small number of further amendments would be made to simplify and update the regulations and bring them in line with current industry practice. These are described in paragraphs 15 - 19.

#### **7.1.1. Familiarisation**

39. The estimates presented below have been informed by consultation with industry via the public consultation and follow-up engagement.
40. It is assumed that all of the businesses described in Table 1 would spend time familiarising themselves with the changes, with the exception of those businesses operating in the freight transport by road industry (SIC code 49410); that is, 5,430 businesses.
41. Feedback from the public consultation, as well as follow-up discussions with the RHA, suggest that the majority of those businesses that transport dangerous goods to harbour areas by road familiarise themselves with the regulations on an ad hoc basis, during the normal course of business. Accordingly, only a small proportion of these will take time to initially read and understand changes under DSHAR.

42. The RHA suggested that, on average, it will be the larger businesses (typically those with >50 employees) that will seek to familiarise themselves proactively with the changes, and thus incur one-off familiarisation costs. RHA estimated that there are approximately 250 of these businesses involved in the transportation of dangerous goods to harbours and harbour areas.
43. Accordingly, the total number of businesses that are assumed to incur one-off familiarisation costs is 5,680; that is, 250 road haulage businesses and a further 5,430 from the rest of the sector.
44. However, as discussed in paragraph 30, many of the SIC codes used to provide estimates of the number of businesses likely to be affected by the proposal include activities that are not relevant to DSHAR. For instance, SIC code 52290, Other transportation support activities, includes those businesses involved in brokerage for ship and aircraft space, which is not in scope of DSHAR. Accordingly, this may overestimate the number of businesses that will in practice incur costs associated with familiarisation; however, the effect is expected to be small, and is deemed a simplifying assumption.
45. During the public consultation, HSE sought views on the familiarisation process for businesses with duties under DSHAR, and asked respondents to consider the assumption that, on average, familiarisation would involve one person at each of the businesses described above spending an hour reading, understanding and subsequently communicating changes under DSHAR.
46. 5 respondents to the public consultation agreed with the above assumption. 8 suggested that the initial estimate of the time required was too low; of these, 6 offered estimates of the likely time spent on familiarising for businesses in their sector. In their responses to the public consultation, industry provided a range of between 2 and 4 person-hours for familiarisation per business, with a best estimate of around 3 hours.
47. On the basis of one person from each site spending between 2 and 4 hours reading and understanding changes at a cost of approximately £36 per hour, this gives an estimated total one-off cost to business of between £411,000 and £823,000 in present values over ten years, with a best estimate of around £617,000.

### **7.1.2. Alignment of definitions**

48. In the consultation we proposed to align the definition of 'dangerous goods' in the new regulations with international standards governing the carriage of dangerous goods by sea (see paragraph 19(a)). HSE's assumption, based on expert sector knowledge, was that this change was cost-neutral. Although it meant some technical changes to the definitions, dutyholders would not need to do anything different in practice, as they already have to apply these international standards under other legislation when transporting dangerous goods by sea.
49. To further investigate this we asked in the consultation whether the changes to scope would mean the respondent had to do anything different to comply with the regulations. 13 out of the 14 respondents to this question confirmed they would not. One respondent felt that there could be some implications, however they misunderstood the requirements (they believed they would need to load/unload

fireworks outside the harbour area for firework displays, whereas in fact there is no such requirement). Therefore, we have concluded that it is reasonable to assume that these changes would lead to no additional costs.

### **7.1.3. Explosives licensing**

50. The current regulations place a requirement on harbours to hold a licence to handle explosives when ships are passing through the harbour area without loading or unloading. This license is issued by HSE. This requirement will be replaced with a more proportionate duty for ships carrying explosives to notify the harbour before passing through. However, we do not expect that this would make a practical difference to what ships already have to do. This is because harbour authorities would in any case request information on any ships passing through carrying explosives to ensure that they comply with the licensing requirements that currently exist. As such, HSE expects this change would involve no cost to business. This was validated by respondents during the public consultation, who all agreed that the change would make no difference to what ships carrying explosives through harbours would need to do in practice.

### **7.1.4. Total costs to business**

51. Total costs to business as a result of the proposal are as described in paragraphs 36 - 47. This gives a total estimate ten-year present value cost to business of between £411,000 and £823,000, with a best estimate of £617,000.

## **7.2. Benefits to business**

### **7.2.1. Familiarisation**

52. As described in paragraph 7, HSE expects the one-off familiarisation costs estimated above to be at least offset by ongoing savings to existing businesses as a result of now being able to consult and review a simpler set of regulations and consolidated guidance.
53. In order to estimate the time savings required to offset the total costs to business, a number of assumptions have to be made. First, for the purposes of this analysis, ongoing savings to business are assumed to be limited to those businesses that incurred one-off costs of familiarisation estimated above. In reality, it may be the case that other businesses operating in the freight transport by road industry that did not incur initial costs may realise some savings as a result of reviewing a set of shorter and simpler regulations on an ad hoc basis. Equally, any new entrants to the market would also benefit from the revised regulations and guidance. However, it is expected that the effects of this would be minimal, and so the impact on these two sets of businesses is not accounted for quantitatively in this final stage impact assessment.
54. One-off familiarisation costs are estimated to be between £411,000 and £823,000, with a best estimate of around £617,000 (ten-year present value), as described in Section 7.1.1. In order to offset these costs, total savings to businesses would need to be between approximately £48,000 and £96,000 per annum, with a best estimate of £72,000.
55. Based on 5,680 businesses as explained in paragraph 43, and a full economic cost of time of approximately £36 per hour as explained in paragraph 28, this

would require each business to save between 0.23 and 0.46 hours (or 14 minutes and 28 minutes), with a best estimate of 0.35 hours (equivalent to 21 minutes), per year over the course of the ten-year appraisal period.

56. As mentioned in paragraph 21, during the public consultation respondents were asked to provide information on the process by which businesses in their sector familiarise themselves with their duties under DSHAR. Feedback from the public consultation suggested that stakeholders obtain information from a range of sources, including trade bodies, health and safety consultants, other businesses through the supply chain, as well as direct from HSE. Respondents were also asked how often they consulted the current regulations and guidance, and a range of estimates were obtained. Some stakeholders stated that they consult the current regulations and guidance from time to time, sometimes annually, while others suggested they do so much more frequently, up to monthly or weekly in some cases.
57. Several respondents commented that the consolidated ACOP was simpler and more user-friendly than separate documents. Comments included that the ACOP is “much clearer than the current documents” and “a very useful guidance document”. Accordingly, we conclude that it is reasonable to assume that, on average, affected businesses would save at least the estimated 14 to 28 minutes per year necessary to offset any initial costs of familiarisation (with a best estimate of 21 minutes).

### **7.2.2. Amendments to current requirements under DSHAR**

58. As well as consolidating and simplifying the existing set of regulations and guidance, the proposal in Option 2 also includes amendments to certain duties, which could potentially lead to benefits to business. It has not been possible to quantify and monetise these for the purposes of this final stage impact assessment; however, they are described qualitatively below and add to our argument that this proposal, as a whole, is at least cost-neutral to business.

#### ***a) Explosives licensing***

59. The current DSHAR regulations include a requirement for harbours to be licensed even if a ship carrying explosives is passing through the harbour area without loading or unloading in that harbour or an adjacent harbour. This licence is issued by HSE. However, HSE believes it is disproportionate for the harbour to need a licence in the absence of any loading or unloading, as the risks in such a case are much lower. Accordingly, this requirement is proposed to be removed under Option 2, and replaced with a more proportionate requirement for ships carrying explosives to notify the harbour before passing through (which does not generate any additional costs, as discussed in paragraph 50).
60. Once obtained, the current licences are held indefinitely by harbours. In theory, by removing this requirement, any new harbours that arise over the course of the appraisal period would benefit from savings in terms of no longer having to apply for this licence. Such savings would be equivalent to the actual cost of the licence itself, as well as any administrative resources required when preparing and applying for the licence. However, based on HSE expert input we estimate this is unlikely that this would affect more than a handful of ports, and so we assess that it would not be proportionate to quantify and monetise these savings for the purposes of this final stage impact assessment.

### ***b) Entry of Dangerous Substances into Harbour Areas***

61. The current regulations include a requirement for any person who intends to bring a dangerous substance into a harbour or harbour areas to notify the relevant harbour master of his intention, normally 24 hours in advance, though this can be reduced when 24 hours is not reasonably practicable.
62. Feedback from stakeholders, including some harbours themselves, is that in practice this requirement is not always feasible, and is often above what is required of dutyholders to ensure that dangerous goods are safely managed within the harbour area. HSE proposed an additional derogation from the 24 notice period where there would be no increase in risk to health and safety from a shorter notice period. In theory, the greater flexibility afforded by the new regulations may lead to small savings to those businesses involved in the transport of dangerous goods to harbour areas. However, HSE anticipates this impact would be minimal.

### ***c) Record-keeping***

63. Harbour authorities are currently required to keep records relating to the explosives they have handled, loaded or unloaded over the past five years. The current proposal is to reduce this to three years, in line with similar record-keeping requirements under existing explosives legislation (ER2014).
64. During the public consultation respondents were asked to consider whether or not this amendment to record keeping requirements would lead to any cost savings. All respondents who answered this question suggested any savings would be zero or minimal; one explained that the change would make minimal difference because files were stored electronically. Accordingly, the effect of this change has been estimated to be minimal.

### ***d) Explosives security***

65. DSHAR contains a requirement for operators of berths at which explosives are handled, to appoint an Explosives Security Officer (ESO) who is responsible for taking precautions to secure explosives against loss, theft or wrongful use. This requirement is proposed to be replaced by a goal-setting requirement in the new regulations, which would require berth operators to take all necessary measures to ensure that explosives are secure without the explicit need for an ESO. The proposed new requirement would give berth operators and harbour authorities more flexibility to comply with the law. However, it will be stated in the supporting ACOP that the appointment of an ESO is still the expected way to comply with this requirement. Therefore, in practice, the change would lead to limited savings to business.

### **7.2.3. Total benefits to business**

66. Total benefits to business as a result of the proposed changes to DSHAR are as described in paragraphs 52 - 65. It has not been possible to quantify and monetise all potential benefits identified; where this is the case, they have been described qualitatively.

67. As described in paragraph 37, HSE expects any one-off familiarisation costs to business to be at least offset by ongoing savings to existing businesses as a result of the revised regulations and consolidated guidance.
68. In order to offset the initial costs of familiarisation estimated in paragraphs 39 - 47, each business would be required to save between 14 and 28 minutes per year from consulting the revised regulations and guidance, with a best estimate of around 21 minutes. HSE believes this is reasonable in view of the information provided in the consultation.

## **8. Direct Costs and Benefits Summary**

69. This final (validation) stage impact assessment estimates and describes the costs and savings business would be likely to experience as a result of the proposed changes to DSHAR.
70. The direct costs to business are calculated based on the costs estimated in paragraphs 36 - 47. These relate to one-off costs of familiarisation. Total ten-year present value costs to business are estimated to be between £411,000 and £823,000, with a best estimate of £617,000.
71. As mentioned in paragraph 52, HSE expect the changes to be cost-neutral, with ongoing savings to business as a result of the shorter, simpler regulations and guidance offsetting any initial costs of familiarisation. All respondents to this question on the public consultation agreed with this assessment.
72. Accordingly, the proposal is expected to be zero-net cost, hence the EANC in 2014 prices will be zero.

## **9. Wider Impacts**

73. Wider impacts have been considered and no impacts have been identified for:

- Statutory Equality Duties;
- Human Rights;
- Justice System;
- Rural Proofing;
- Social Impacts;
- Environmental impacts; and
- Sustainable development.

74. We have considered the criteria for wider competition and health and wellbeing impacts and do not consider that there is anything that needs to be addressed.

## **10. Small and Micro-business Assessment**

75. DSHAR covers the safe storage, handling, unloading and carriage of dangerous substances when they enter harbours and harbour areas. These involve a number of different industries and businesses, as described in paragraphs 29 - 34, many of which will be small and micro-sized enterprises.



76. The ONS' *UK Business: Activity, Size and Location* publication provides information on the number and size of registered businesses.<sup>11</sup> Although the *UK Business* uses information from the IDBR, data is only available at the 4-digit SIC level. As a result, the total number of businesses for each SIC presented in Table 2 below will be greater than those in Table 1, as they include other activities not covered by DSHAR. However, they still provide a useful indication of the number of small and micro businesses operating in each sector.

**Table 2: Breakdown of businesses covered by DSHAR by Employment Size Band, as a proportion of total**

SIC07	Total number of enterprises	Employment Size Band	Small & Micro	Medium	Large
		Number of employees	(0-49)	(50-249)	(250+)
4920: Freight transport by rail	35		86%	0%	14%
4941: Freight transport by road	32,650		98%	1%	0%
5020: Sea and coastal freight water transport	640		97%	3%	0%
5040: Inland freight water transport	80		100%	0%	0%
5222: Service activities incidental to water transportation	815		93%	5%	2%
5224: Cargo handling	400		95%	3%	3%
5229: Other transportation support activities	3,865		95%	4%	1%

**Note:** Total may not sum due to rounding. Source: <http://www.ons.gov.uk/ons/datasets-and-tables/index.html?content-type=Dataset&edition=tcm%3A77-365934>

77. As can be seen from Table 2, the vast majority of businesses with obligations under DSHAR are small or micro businesses with fewer than 50 employees.

78. The transit of dangerous substances (including explosives, flammables and toxic materials) in ports is an intrinsically high-hazard activity, with the potential for major accidents involving multiple casualties in the port itself and in the surrounding area. This is not necessarily linked to business size, however, and so it would be inappropriate to grant an exemption to small and micro businesses involved in the transit of dangerous goods in harbours and harbour areas.

## 11. Summary

79. The preferred Option 2 is to retain the DSHAR regulations but remove redundant material and simplify where possible.

80. HSE anticipates that the proposal will be largely cost neutral. The total one-off familiarisation costs to business, estimated to be around £617,000 (ten-year present value), are expected to be offset by ongoing savings to business from

<sup>11</sup> <http://www.ons.gov.uk/ons/rel/bus-register/uk-business/2014/stb---uk-business--activity--size-and-location---2014.html>

consulting shorter and simpler regulations and guidance. This was supported by respondents during the public consultation.

81. Accordingly, the measure is expected to be zero net cost.