

## Regulatory Impact Assessment for the OEL framework

### Purpose and intended effect

#### Background

1. The Control of Substances Hazardous to Health Regulations (COSHH) came into force in October 1989, and has been amended and re-enacted several times since then. The current version is the Control of Substances Hazardous to Health Regulations 2002. The COSHH Regulations are a useful tool of good management setting out the measures that employers must take to protect both employees and others who may be exposed. They are summarised in a free booklet (*COSHH: a brief guide to the regulations*). At the heart of COSHH is the requirement on employers to prevent their employees being exposed to hazardous substances or where this is not reasonably practicable, ensure exposure is adequately controlled. Under the COSHH Regulations, Occupational Exposure Limits (OEL's) define adequate control by inhalation. Two types are used, the Maximum Exposure Limit (MEL) and the Occupational Exposure Standard (OES).

2. HSC's Advisory Committee on Toxic Substances established a working group to consider how the OEL system could be improved. The objectives of the new approach being that OELs should:

- control risks to health;
- be readily understood/accessible;
- be legally enforceable;
- be comprehensive;
- comply with EU legislation;
- be flexible and able to take on board new developments in science and technology; and
- provide incentives to reduce exposure.

3. In March 2002 the Health and Safety Commission (HSC) published a Discussion Document (DD) setting out the concerns with the current system of occupational exposure limits and proposed options for a new system. The working group had examined the existing system against the 7 objectives and decided that *status quo* was not an option. However they did consider that it would be possible to make minor modifications to the indicative criteria used to set limits, to overcome the difficulties encountered with the current process of setting limits. This was Option 1 in the DD. The options were:

1. maintain the present system with minor modifications;
2. good practice control advice supported by a single type of limit;
- 2A. good practice control advice supported by a two tier system which flags carcinogens.

4. The majority of respondents agreed with the concerns about the present system (see paragraph 5) and only 2 did not support either proposal 2 or 2A. A proposal to meet these aims, Option 2 in this RIA, has been developed by a Working Group of the HSC's Advisory Committee on Toxic Substances and endorsed by the HSC. It combines features of Options 2 and 2A in the DD. Therefore, Option 1 is included in this RIA for comparative purposes only.

## Concerns with the present system of occupational exposure limits

5. In the last few years a number of difficulties have arisen with the present system. These were explained fully in the discussion document “Discussion Document on the Occupational Exposure Limit (OEL) framework” DDE19 and consultative document “Proposals to introduce a new occupational exposure limits (OEL) framework” CD189. The DD and CD can be found on the HSE website at <http://www.hse.gov.uk/consult/disdocs/dde19.pdf> and <http://www.hse.gov.uk/consult/condocs/cd189.pdf>, respectively.. In summary the concerns are:

- Research shows that OESs and MELs are not understood by much of industry, particularly small firms, with many employers not knowing how to determine whether exposure levels in their workplaces comply with the limits (see paragraphs 6 and 7);
- The OES purports to be a “safe” limit at which no ill-health will occur. But the concept of a “safe” limit is not secure. In reality, it may not be possible to give an absolute guarantee of complete health protection for all individuals because of uncertainties, for example in the extent of human variability, and gaps in knowledge about the effects of chemicals;
- There are some incompatibilities with the European Commission (EC) system for OELs (there is a need to develop a limit system under COSHH which will readily incorporate Indicative Occupational Exposure Limit Values (IOELVs)); and
- Experience has shown that the criteria used to set OESs and MELs are not wide enough in their scope; some substances of concern meet neither the OES nor MEL criteria, so it has not been possible to establish an OEL for those substances under the current system.

6. A survey carried out by the HSC showed that many small firms wanted to be told exactly what they need, and do not need, to do. To explore small firms’ needs in relation to controlling chemicals, HSE carried out market research to determine how firms decide what controls to use and to measure their understanding of the COSHH Regulations and OELs. Managers responsible for health and safety were interviewed at 1000 firms which use chemicals, 400 interviews were with firms engaged in occupations which would involve some exposure to chemicals (all user group) and 600 with firms in which chemicals were in daily use (heavy user group). The profile of respondents reflected that of UK industry in that most respondents (75% from all user group and 57% from heavy user group) were from firms with 10 employees or less. A smaller survey was also carried out on 150 Trade Union representatives.

7. Although around 2/3 of respondents claimed to understand the term occupational exposure limit, only 12% of the all user group and 28% of the heavy user group mentioned monitoring (either regular or ad-hoc) when asked how they would assess whether an OEL was being met. Awareness of the different duties associated with OESs and MELs and of the two reference periods, the 8 hr TWA and 15 minute reference period was vanishingly small among the all user group. The Trade Union representatives had slightly greater understanding of OELs than the managers in these small firms.

8. As a result of these concerns HSE and stakeholders consider OELs have not realised their full potential as important tools to help employers control exposure.

## The proposed new system

### Objectives for the new system

9. Research has identified a need to develop a new approach to OELs that will meet the needs of industry in the 21<sup>st</sup> century. For over 50 years, OELs have played an important role in the control of dusts, gases and vapours in many industries. However, the industrial scene is now very different from when OELs were first introduced. The specialist knowledge and expertise needed to correctly apply OELs is not widely available across the spectrum of firms, (now over 1.3 million, many employing fewer than 10 people), that use a wide range of chemicals and chemical products. In 2002 the HSC agreed a strategy for HSE's work on chemicals, which places more emphasis on activities which will have a direct impact in the workplace. The aim is to ensure OELs make a real contribution to this strategy. To achieve this the new system needs to:

- be simple and easy for duty holders to understand;
- provide a tool which will help dutyholders improve standards of control;
- address the difficulties associated with the OES; and
- improve the efficiency of the process for setting limits in the light of the EC system.

### Fundamentals of the new system

10. The proposal is to:

- move away from the OES/MEL system to good practice advice on how to control exposure underpinned by a single type of OEL;
- introduce a new approach to adequate control, so that dutyholders will have achieved adequate control if:

*the principles of good practice for the control of exposure to substances hazardous to health set out in a new Schedule 2A (of COSHH) are applied; any Workplace Exposure Limit approved for that substance is not exceeded; and for a substance which carries the risk phrase R45, R46 or R49 or for a substance or process which is listed in Schedule 1, the level of exposure is reduced so far as is reasonably practicable.*

- set out the principles of good practice for the control of exposure to substances hazardous to health in a new schedule to the COSHH Regulations;
- establish clear linkage between the duties under the COSHH Regulations to apply the principles of good practice for the control of exposure to substances hazardous to health, guidance on controls appropriate for specific situations and the OEL; and
- provide advice to support the principles of good practice for the control of substances hazardous to health and make it readily available free of charge.

11. The responses to CD 189 showed strong support for the proposed changes to the COSHH Regulations. The proposals defined adequate control as applying the principles of good practice for the control of exposure to substances hazardous to health, complying with any relevant WEL and for carcinogens and mutagens (substances which carry the risk phrase R45, R46 or R49 or for a substance or process which is listed in Schedule 1 of the COSHH

Regulations), reducing the level of exposure so far as is reasonably practicable. In response to the views of consultees the requirement to reduce exposure so far as is reasonably practicable has been widened to include substances that can cause occupational asthma.

### **Information sources and background assumptions**

12. The assumptions in this RIA are based on information collected from the evaluation of COSHH Essentials<sup>1</sup> and from internal HSE knowledge. Costs and benefits are discounted over ten years using the Treasury's recommended 3.5% discount rate<sup>2</sup>. The base year for appraisal is year 2001/02.

### **Benefits**

#### Health and safety benefits

##### *Option 1*

13. There will be no additional health and safety benefits under this option.

##### *Option 2*

14. Adding together figures on occupational ill-health for diseases that are predominantly caused by chemicals – such as cancer, asthma, bronchitis etc – gives a rough estimate of the number of cases of exposure related ill health. A variety of sources have been used<sup>3</sup>, each of which is known to be subject to incomplete coverage and under-reporting of various kinds. The resulting figure is therefore likely to be an underestimate of the actual annual incidence<sup>4</sup>.

15. Based on this method and using figures for 2001, it is estimated that each year approximately 10,000 people suffer non-fatal illnesses as a result of exposure to substances hazardous to health at work, and a further 3000 to 12,000 die from cancers caused by chemicals, including asbestos. However, the proposed OEL framework does not have the scope to control substances that cause a substantial proportion of these cancer deaths (particularly those caused by asbestos, the control of which comes under other regulations). HSE has used an estimate of 4,500 annual cancer deaths that are relevant to the new framework.

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<sup>1</sup>Wiseman et al (2001) COSHH Essentials: Survey of firms purchasing this guidance

<sup>2</sup>In arriving at 10 year cost figures two adjustments are made. Firstly, earnings are assumed to rise by 2% per year in real terms - the observed increase for the whole economy over the past twenty-five years or so. Secondly, costs are discounted to present value using the Treasury recommended 3.5% discount rate.

<sup>3</sup> New cases seen by specialist doctors reporting to the Health and Occupation Reporting Network (THOR), compensated by the by the DWP Industrial Injuries Scheme (IIS) and reported under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR). The figure also includes an estimated 3000 to 12,000 cancer deaths, ref: Carcinogenic risk: getting it in proportion - Sir Richard Doll (paper in conference proceedings: Cancer in the workplace, 15 October 1992, HSE and Society of Chemical Industry).

<sup>4</sup> Figures from the Self Reported Work Related Illness 1995 (SWI95) survey indicate the annual incidence may be much higher for some diseases. For example, the incidence estimates for skin disease alone from SWI95 was 12,000 (95% confidence interval 3000 to 22,000 is typical of the large uncertainty associated with SWI estimates.) However, SWI estimates may include a substantial proportion of cases not caused by chemicals.

16. Under-reporting of diseases which make up this figure will be most significant in industries where knowledge of the hazards of exposure to chemical agents is less well known or where exposure is intermittent

17. Using unit average costs from HSE (1999) for cases of ill health<sup>5</sup> and for cancer deaths, double the Department of Transport's Value of Prevention of Road Accidents of approximately £1,250,000 in June 2002 prices, to allow for individual aversion to dying from cancer, it is possible to estimate the cost of this exposure related ill health to society.

18. Assuming there are 10,000 cases of non fatal illnesses and 4,500 cancer deaths per year, this gives a total cost to society per year of approximately £11.3 billion. The new OEL framework could impact on only some of these costs.

19. The evaluation of COSHH Essentials gives an indication of the effects similar guidance could be expected to have. The most frequent action taken as a result of seeing the guidance was to check that existing control measures were in place. The second most frequent was to provide training or information to workers. This suggests that guidance of this sort would act to improve compliance and eventually reduce the risk of exposure. It is hoped that there will be health benefits, but there is uncertainty about their extent.

## Cost savings

### *Option 1*

20. Option 1 is no more than the rationalisation of the current criteria used by ACTS and WATCH when setting new limits. Currently there are about 1-3 substances where WATCH finds it difficult to decide if an OES or a MEL is the most appropriate limit. This results in lengthy and repeat visits to WATCH. For important chemicals the decision is eventually made in ACTS.

21. The new criteria will shorten the time the substance spends in WATCH. Cost savings are based on<sup>6</sup>:

- 17 national topic experts saving 2 hours each at WATCH;
- 10 HSE people (Band 1 - 3) saving 2 hours each at WATCH; and
- HSE saving 10 days (Band 3) for the preparation of additional papers for additional WATCH discussion.

22. Over ten years this represents a cost saving of approximately £27,000 in net present value terms.

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<sup>5</sup>'The costs to Britain of workplace accidents and work related ill health in 1995/96' HSE (1999). For each person in the working population with a work-related illness, the average social cost is between £11,000 and £11,400 (uprated to 2<sup>nd</sup> quarter 2002 from 95/96 values using nominal GDP inflator).

<sup>6</sup>This assumes hourly wage rates (including non-wage labour costs) of £23.21 and £34 for WATCH experts and HSE staff band 2 respectively. The daily wage including non-wage labour costs used for band 3 policy staff is £178.

*Option 2*

23. Under Option 2 there would be some cost savings to firms that are already complying with OELs under the existing framework. These firms will receive clearer guidance about what is expected of them under the regulations and how to achieve lower levels of exposure through the application of good practice. Furthermore, the new framework and good practice guidance will be freely available online from HSE. Increasing numbers of firms are getting access to the internet. Thus, there will be the cost savings to firms who previously paid for the information and who will now get it free of charge. We have not been able to quantify these benefits.

24. There may also be some cost savings in inspector time as clearer guidance makes enforcement activity easier. We have not been able to estimate these benefits.

**Costs***Business sectors affected*

25. In 1992, HSE estimated that nearly all of Britain's 1.3 million employers were required to carry out a COSHH assessment. This is unlikely to have changed much. Firms in all sectors come under the scope of COSHH and will therefore be affected by the changes in the OEL framework. Data from the Department of Trade and Industry<sup>7</sup> indicated that firms in those sectors most affected by COSHH<sup>8</sup> number approximately 270,000. That is, about 20% of the 1.3 million firms. The greatest burden will fall upon those industries where there is the greatest exposure to hazardous substances, in the primary and secondary industries. It is therefore likely that the number of companies who will be affected by the changes is actually quite small. HSE estimates that this is about 5% of 1.3 million employers (i.e. 66,000 firms). We use the range 5%-20% in our estimates below.

*Compliance costs to business**Option 1*

26. The likely outcome is that 1-3 substances are set a MEL rather than an OES. The net cost to industry will be the cost of the MEL less the cost of the replaced OES. Since it is assumed that OESs impose negligible costs to industry the costs will simply be the compliance costs associated with each new MEL. It is difficult to estimate the magnitude of these costs because they will vary considerably. The costs will be dependent on several factors, including:

- i. the substance for which a MEL is being set and therefore the industries affected;
- ii. the ease with which industry can implement changes in order to comply; and
- iii. the actual limit chosen.

27. A brief review of costs of MELs over the last six years indicates a range of approximately £400 to £2,000 per firm per year per MEL. Since important substances get resolved in terms of MELs anyway, we are looking at lower than median MEL costs for most substances affected by these changes.

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<sup>7</sup> DTI (1999), SMEs statistics for the UK

<sup>8</sup> Sectors include: parts of Manufacturing (D) and Wholesale, retail and repairs (G)

## Option 2

### *Familiarisation*

28. Each firm affected by option 2 will require time to become familiar with the new requirements. As implied in paragraph 22, 80 to 95% of the estimated 1.3 million firms discussed in paragraph 22 will be affected only marginally by the changes to the OEL framework. Managers within these firms will need to take a small amount of time to ensure that the changes will not have a substantial impact on their businesses. HSE has assumed that each of these firms will require half an hour for familiarisation. We have also assumed that the predicted 5 to 20% of firms that will be affected substantially by the changes will require four hours to become familiar with the changes and the good practice guidance. The hourly cost of management time required for familiarisation is assumed to be approximately £18<sup>9</sup>. Under these assumptions, the one-off familiarisation costs lie in the range of £14.2 to 30.4 million.

### *Good practice*

29. Option 2 includes a new regulatory requirement to apply the principles of good practice. We expect that freely available guidance on the application of the principles to specific workplace situations will result in greater uptake and improved compliance.

30. To help small businesses apply the COSHH Regulations to real life situations, HSE developed *COSHH Essentials*. This is a step-by-step process, which helps identify correct control methods for the products and tasks in the workplace. An evaluation study on its effectiveness suggested that 60% of a random sample of 500 SMEs has taken some action to improve control as a result of using the guidance. The actions taken were:

- i. 40% of firms checked existing controls working. In the OEL framework, we assume 1 person taking 1 - 4 hours time;
- ii. 5% of firms improved their extraction systems. In the OEL framework, we assume a typical unit cost £500 - £2000;
- iii. 10% of firms substituted less hazardous products. We have been unable to get an estimate of cost and so treat as cost neutral;
- iv. 20% of firms changed their control measures used. In the OEL framework, we assume a typical unit cost of between £1000 - £5000 per site [including maintenance]; and
- v. 25% improved training or procedures. In the OEL framework, we assume 1 - 4 hours per person and between 1 and 5 people per site.

31. These percentage changes are costed against the number of firms we hope to influence. We assume that the new limit setting system could have an impact on 30% of firms with the greatest exposure to hazardous substances. This proportion could be underestimated as it relates mostly to SMEs. We implicitly assume that large firms have controls in place and will not be so affected by the changes.

32. Table 1 below summarises the costs of these measures. All costs are incurred in the first year and are one-off costs. The only annual costs are maintenance costs that we believe will be taking place anyway in the absence of the proposal.

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<sup>9</sup> Hourly wage labour cost of £13.98 (SOC 396) plus 30% for non-wage labour costs.

**Table 1 Costs of additional actions (£million)**

	Check existing working controls	Improve extraction systems	Change control methods	Improve training	TOTAL
HSE enforced premises	0.039-0.156	0.134 - 2.140	1.070 – 21.401	0.015 - 1.276	1.259-24.972
LA enforced premises	0.014 – 0.055	0.074 – 1.189	0.594 – 11.889	0.006 – 0.491	0.689-13.624
TOTAL	0.053-0.211	0.208-3.329	1.164-33.290	0.021-1.767	1.947-38.596

### *Implications of Workplace Exposure Limits*

33. In moving from OESs to a single limit with good practice, there are some other cost implications for industry. Currently it is possible for the OES levels to be exceeded but steps must be taken to meet it as soon as is reasonably practicable (within CAD<sup>10</sup>, if a limit is exceeded, exposure must be reduced as soon as possible). Part of the proposed new approach to adequate control is that “*any Workplace Exposure Limit approved for that substance is not exceeded*”. Therefore some additional costs may be incurred in industry. It is not possible to quantify the extent of these costs. However, set against these costs, benefits from the framework would result from the increased clarity in what is expected from industry.

34. Under existing MELs, limits must not be exceeded, and therefore there would be no changes (and no costs) in moving from the limits in the old OEL framework to those in the proposed new version.

### Costs for a typical business

35. Information from previous MEL RIAs suggests that ten year present value costs under Option 1 for the limited number of firms that will be affected will have a ten year net present value of between £3,000 and £17,000 per firm.

36. Using information from the COSHH Essentials survey, the one-off costs to a typical business under Option 2 two would lie in the range £570 to £5070. Policy costs would range between 500 and 5000, while implementation costs<sup>11</sup> would be approximately £70.

### Total compliance costs

#### *Option 1*

37. HSE has been unable to give an estimate of total compliance costs because the total number of potentially affected businesses is not known.

<sup>10</sup> Chemical Agents Directive

<sup>11</sup> Cabinet Office Regulatory Impact Unit, ‘Good policy making: A guide to regulatory impact assessment’ (2001) policy costs are the costs directly attributable to the policy goal. Implementation costs are the red-tape costs associated with the regulation’s implementation.

*Option 2*

38. Total compliance costs to business will be approximately £16.2 million to £69.0 million. All costs are borne in the first year of compliance.

39. Of this total, £1.9 to 38.6 million can all be classified as policy costs (refer to table 1), while £14.2 to £30.4 are implementation costs.

Costs to HSE*Option 1*

40. There are no additional costs to HSE under Option 1.

*Option 2*

41. An analysis of SIC codes suggests that the workforce inspection is split equally between HSE and LA.

42. We estimate that for HSE inspected premises, 90% of the workforce have exposure via inhalation. For LA inspected premises 50% of the workforce have exposure via inhalation.

43. Enforcement will be easier for FOD, HID and LA, because inspectors will look at good practice, for which they will have clear guidance, rather than at the level of emissions. There will therefore, be cost savings, but it is difficult to quantify.

44. There will also be additional costs of staff time in the development and issue of guidance. We have not been able to estimate this cost.

Total costs to society

45. These are the same as the costs to industry and are in the range £16.2 to £69.0 million. All costs in Option 2 are incurred in the first year. Of this total, £1.9 to 38.6 million can be classified as policy costs (refer to table 1), while £14.2 to £30.4 are implementation costs. This apparent imbalance between policy and implementation costs is explained by the large number of firms that will have to spend a small amount of time familiarising themselves with the new requirements (implementation costs). This compares with the relatively small number of firms that will have to take action to meet the new requirements (policy costs). The cost per firm for the majority of firms will therefore be negligible.

**Small firms impact test***Option 1*

46. There would be no disproportionate impact on small firms.

*Option 2*

47. The major impact of the changes will be amongst small firms as these are the least likely to understand OELs and thus less likely to have access to professional advice on appropriate

control. However small firms are also likely to be the major beneficiaries of the changes to the framework due to guidance on good practice.

48. HSE contacted five small businesses to assess the impact of the proposed changes under Option 2. Three were engineering firms and the other two were food manufacturers. All contacts said that the proposed changes seemed sensible, particularly as health and safety managers in small firms often find difficulty in interpreting and responding to the existing OEL framework. The simplification of the limit structure and the availability of good practice guidance were welcomed. Although some respondents expected that there would be some cost implications of applying the new framework, none believed that the costs would place a disproportionate burden on their business.

### **Competition assessment**

49. The effects on competition under Option 1 are difficult to predict without knowledge of which OESs would be converted to MELs. However, although the duties would change, there is no reason to believe that the effects would vary substantially between firms.

50. A large majority of manufacturing firms, and a substantial number of wholesale and retail firms would be affected by the changes proposed under Option 2. The markets that fall into the scope of the competition assessment are therefore numerous and diverse. In these circumstances OFT recommends selecting markets that have a high degree of supplier concentration (dominated by a relatively small number of firms). Two such examples are the markets for washing powder and cement.

51. The washing powder market in Great Britain is dominated by four firms. However, Option 2 would not affect any firm in the industry more than the others, and new firms would not face higher entry or on-going costs as a result of the new OEL framework. Technological change within the market exists but cannot be characterised as rapid. Commercial choice within the market would not be restricted.

52. The cement industry has a highly concentrated market structure, with 90% of production controlled by three large firms. However, the proposed changes to the OEL framework would not affect any one of these firms more than the others. Since there will not be any differential effects, the proposed changes should not affect market structure or competition in the cement industry. Nor should it lead to higher set-up costs for new firms, that existing firms would not have to meet. Costs should fall on firms in proportion to their cement production. There may be some downstream effects in other markets but these will be negligible.

### **Environmental impacts**

#### *Option 1*

53. There are no environmental implications under Option 1.

#### *Option 2*

54. There will be some environmental improvement due to reduction in fugitive emissions, but this is unquantifiable.

## Balance of costs and benefits

### *Option 1*

55. Total costs could potentially be up to £400-£2,000 per affected firm per year, with a ten year present value of £3,000 to £17,000 per firm (the total number of firms can not currently be predicted). These costs would be offset by total cost savings to HSE of £3,260 per year, with a ten year present value of £27,000.

### *Option 2*

56. It is expected that there will be health benefits from improved risk control of this proposal, but it has not been possible to estimate them. There will also be benefits to HSE from easier enforcement.

57. Total compliance costs are estimated to lie in the range of £16.2 to £69.0 million. All costs under Option 2 are incurred in the first year. Of this total, £1.9 to 38.6 million can be classified as policy costs, while £14.2 to £30.4 are implementation costs. This apparent imbalance between policy and implementation costs is explained by the large number of firms that will have to spend a small amount of time familiarising themselves with the new requirements (implementation costs). This compares with the relatively small number of firms that will have to take significant action to meet the new requirements (policy costs). The cost per firm for the majority of firms will therefore be negligible.

58. In order to put compliance costs in context, a rough calculation can be made of how many cases of ill health and death would need to be prevented for the benefits to balance the costs. Assuming 4,500 cancer deaths and 10,000 cases of ill health fall within the scope of the proposed framework (implying a ratio of 0.45 deaths to one case of ill health), the following would apply<sup>12</sup>: Over a notional ten year period, in order to balance the lower compliance cost estimate of £16.2 million, 7 deaths and 15.2 cases of ill health would have to be prevented (0.016% of the estimated ten year incidence). For the upper compliance cost estimate of £69 million, 29 deaths and 65.1 cases of ill health would have to be prevented (approximately 0.065% of the estimated ten year incidence). These required levels of prevention appear modest.

59. A consultee questioned just how modest these levels of prevention really are. Doubt was expressed because the required benefits would have to come from the relatively small number of firms that HSE has assumed will take action as a result of the new OEL framework. However, even when the risk is concentrated among the firms that HSE assumes would take action, the risk reduction that each firm would have to make so that society's benefits equal the costs still appears manageable and is the range 0.7% to 2.6%<sup>13</sup>.

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<sup>12</sup> For the purposes of this illustration, cancer deaths and ill health are assumed to be distributed evenly over time. The health benefits have been uprated by 2% for real GDP growth and then discounted at 3.5% over ten years. Deaths have been rounded to the nearest whole unit.

<sup>13</sup> Under HSE's assumptions, between 8,322 and 33,288 firms are expected to take action under the new OEL framework. This represents 0.63% to 2.52% of all employers, or 2.1% to 8.4% of employers in the sectors at which the OEL framework is primarily directed ("Manufacturing" and "Wholesale and Retail Trade: Repairs). On average, this implies a "risk multiplier" of between 48 and 159 for the low risk reduction estimate (0.016%) and between 12 and 40 for the high risk reduction estimate (0.065%).

## Uncertainties

60. The total costs of compliance are based on an estimated range of the number of firms affected and the number of firms estimated to take action.

61. On the benefits side, we have not been able to estimate the health improvement brought about by the new OEL framework. This is due to uncertainty over which substances (and corresponding industries) may be affected by the new framework.

## Arrangements for monitoring and evaluation

62. Compliance with this will be through the enforcing authorities of the Health and Safety at Work etc. Act 1974. HSE will use the “Enforcement Management Model” (EMM)<sup>14</sup> to guide action when the principles have not been applied properly or when there is evidence of exposures above the WEL. The EMM is a robust framework to help inspectors make enforcement decisions in line with the HSC Enforcement Policy Statement. The model aims to promote:

- enforcement consistency;
- proportionality and targeting by confirming the risk based criteria against which decisions are made; and
- transparency and accountability in the decision making process.

63. HSE will take enforcement action in relation to any of the elements of the proposed new reg 7(7). However, failure to comply with two or more would not result in two or more separate offences. In cases where the principles have not been applied adequately or where the WEL has been exceeded, the EMM will direct inspectors to appropriate, proportionate enforcement action, taking account of local factors.

64. The OEL framework forms part of HSC’s chemicals strategy, which places more emphasis on activities which will have a direct impact in the workplace. The evaluation of the framework will form part of the evaluation of the impact of the various strands of that broader chemicals programme.

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<sup>14</sup> The HSC Enforcement Policy Statement can be found on the web site (<http://www.hse.gov.uk/pubns/hsc15.pdf>). There is also a hard copy leaflet HSC15.