

<b>Title:</b> Post Implementation Review - Control of Major Accident Hazards Regulations 2015 <b>PIR No:</b> PIR004 <b>Original IA/RPC No:</b> RPC14-HSE-2036(2) <b>Lead department or agency:</b> HSE <b>Other departments or agencies:</b> <b>Environment Agency, Office for Nuclear Regulation, Natural Resources Wales, Scottish Environment Protection Agency</b>  <b>Contact for enquiries:</b> <a href="mailto:Diane.Savage@hse.gov.uk">Diane.Savage@hse.gov.uk</a>	<b>Post Implementation Review</b>
	<b>Date:</b> 10/02/2020
	<b>Type of regulation:</b> Domestic
	<b>Type of review:</b> Statutory
	<b>Date measure came into force:</b> 01/06/2015
	<b>Recommendation:</b> Keep
	<b>RPC Opinion:</b> Choose an item.

### 1. What were the policy objectives of the measure?

To implement the majority of the requirements of European Directive 2012/18/EU (known as 'Seveso III') in full, by way of new Regulations ('COMAH 15'). Ensuring that the changes were clear, coherent and easy to understand and did not place a disproportionate burden on industry, regulators or other stakeholders. Successful transposition would ensure high levels of protection for human health and the environment were maintained.

### 2. What evidence has informed the PIR?

A research plan for the PIR was approved in October 2017. A month-long survey was circulated to interested parties via industry groups, Resilience Direct<sup>1</sup> and eBulletins. Experienced colleagues in HSE, ONR and the environment agencies (the Competent Authority (CA)<sup>2</sup>) were encouraged to participate. Internal data held by the CA was also analysed.

### 3. To what extent have the policy objectives been achieved?

Analysis of the survey results show the majority of respondents consider the current regulatory regime to be the most effective way to prevent major accidents involving dangerous substances and limit the consequences to people and the environment of any accidents which do occur. Consequently, COMAH 15 is deemed to be still 'fit for purpose'.

Sign-off for Post Implementation Review: Chief economist/Head of Analysis and Minister

***I have read the PIR and I am satisfied that it represents a fair and proportionate assessment of the impact of the measure.***

Signed: 

Date: 10/02/2020

<sup>1</sup> Resilience Direct is an information sharing platform available to all category 1 and 2 responders (as defined by the Civil Contingencies Act 2004), government departments and agencies, and other key organisations in the UK resilience community.

<sup>2</sup> COMAH 2015 is enforced by a COMAH Competent Authority (CA), comprising the Health and Safety Executive (HSE) or in the case of nuclear establishments, the Office for Nuclear Regulation (ONR) working in partnership with the Environment Agency (EA) in England, Natural Resources Wales (NRW) in Wales and the Scottish Environment Protection Agency (SEPA) in Scotland. The Agencies lead on the environmental aspects of the legislation.

## Further information sheet

Please provide additional evidence in subsequent sheets, as required.

### **4. What were the original assumptions?**

The main estimated costs to industry represent work undertaken to become compliant with COMAH 15, including costs for emergency responders attending external emergency plan tests at Upper Tier<sup>3</sup> (UT) COMAH establishments. The main savings were expected to arise from a net decrease in the number of establishments in scope of COMAH, resulting in direct ongoing savings to business and reduced ongoing cost recovery by the CA for some activities.

### **5. Were there any unintended consequences?**

No unintended consequences were identified during the review process.

### **6. Has the evidence identified any opportunities for reducing the burden on business?**

Several respondents raised concerns over the proportionality of safety reports and the perceived burdens of cost recovery, however this is related to the delivery of the regime rather than the Regulations. A project looking at the process of Safety Report examination has already commenced and is discussed in more detail in this report.

### **7. For EU measures, how does the UK's implementation compare with that in other EU member states in terms of costs to business?**

Ongoing engagement with EU officials as a member of the Seveso Expert Group and through other international forums has not highlighted any significant areas of concern or divergence in terms of the implementation of Seveso III in other EU Member States.

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<sup>3</sup> There are two types (tiers) of establishment which are subject to COMAH 15, known as upper tier or lower tier depending on the quantity and nature of dangerous substances present. Upper tier establishments hold greater quantities of dangerous substances meaning that additional requirements are placed on them by the Regulations.

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## Introduction

1. This Post Implementation Review (PIR) of the Control of Major Accident Hazards Regulations 2015 (COMAH 15) (S.I. 2015/483) was undertaken by the Health and Safety Executive (HSE). The PIR report sets out the effectiveness of the regulatory regime.
2. COMAH 15 implements the majority of European Union Directive (2012/18/EU) on the control of major accident hazards involving dangerous substances, known as Seveso III. COMAH 2015 applies to Great Britain (Northern Ireland produces its own regulations); the land-use planning requirements from the Directive are implemented through planning legislation. Seveso III came into force on 1 June 2015 and replaced Council Directive 96/82/EC, known as Seveso II.
3. There is a statutory requirement to review COMAH 15 every 5 years. The evaluation tool for this is the PIR and the publication of the PIR report is due by 1<sup>st</sup> June 2020. The overall purpose of the PIR is to assess whether COMAH 15 is still achieving the original policy objectives, whether the objectives remain valid and appropriate, if Government intervention is still required and if so, whether it can be improved to reduce burdens on business. For EU-derived requirements, the PIR considers, and takes account of, how the Directive has been implemented in other Member States.
4. HSE's Regulation Committee agreed that the scope and scale of the PIR should be a medium-level resource PIR.

## What were the policy objectives of the measure?

5. The UK policy objectives were to implement the requirements of Seveso III in full, through new Regulations (COMAH 15), ensuring that implementation of the changes;
  - was clear, coherent and easy to understand;
  - did not place a disproportionate burden on industry, regulators or other stakeholders;
  - maintained and further improved high levels of protection for human health and the environment in line with the Directive; and
  - maintained a 'level playing-field' for the major hazards industry.

6. Seveso III addressed the change in the chemical classification system from the Dangerous Substances Directive/ Dangerous Preparations Directive (implemented in Great Britain as the Chemicals (Hazard Information and Packaging for Supply) Regulations (CHIP)) to the Classification, Labelling and Packaging Regulation (CLP). At the same time, the European Commission took the opportunity to undertake a broader review, modernising other aspects of the Directive and bringing it in line with the Aarhus Convention<sup>4</sup> to include wider public information requirements.
7. Apart from those changes, Seveso III replicated the majority of Seveso II, implemented in Great Britain through the Control of Major Accident Hazards Regulations 1999 (COMAH 1999). Due to the complexity of the amendments, and in line with good drafting practice, it was preferable to revoke and replace COMAH 1999, rather than to amend the existing Regulations.

### **What evidence has informed the PIR?**

8. A research plan for the PIR was approved by HSE's internal Evaluation Governance Group in October 2017. HSE used a light-touch quantitative research approach to collect evidence, supported by regulatory data to determine movement of establishments in and out of scope or changing tiers as a result of COMAH 15.
9. The bulk of the research focussed on capturing feedback on the new requirements brought about by the changes in Seveso III. Views were also sought on whether COMAH 15 is still fit for purpose and achieves the objective of preventing on-shore industrial major accidents and limiting the consequences to people and the environment of any accidents that do occur.
10. The justification for this approach is that the Regulations transpose an EU Directive that is predominantly copied out, is uncontroversial, and introduces few new duties. It also builds on a regime that has been in force in the UK and rest of the EU for more than thirty years, and with which industry and other duty-holders are predominantly content. This is supported by the outcome of informal consultation with industry during 2013 which concluded that the level of detail in the COMAH regime and the clarity that the regulations provide was appreciated by industry. Furthermore, a 2008 study on the effectiveness of the Seveso II Directive and carried out on behalf of the European Commission concluded that the Directive
  - had led to a 'recognizably higher level of safety in comparison to non-Seveso establishments';
  - was effective in achieving its aims to prevent major accidents and limit the consequences of any accidents that do happen; and that
  - industry recognised the need for the requirements to be implemented and that the safety costs, as opposed to the potentially huge cost of a major accident, are financially beneficial in the long term.
11. In addition, the Equivalent Annual Net Cost to Business (EANCB) from the 2014 Impact Assessment (IA No: HSE 0082) that accompanied COMAH 15 when the Regulations were brought into force was calculated at £4.57m in 2014 prices, below the £5 million *de minimis* threshold required by the Regulatory Policy Committee (RPC).

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<sup>4</sup> <https://ec.europa.eu/environment/aarhus/>

12. An on-line survey was conducted between 1 July and 31 July 2019. Prior to its launch, Industry stakeholder groups<sup>5</sup> and Resilience Direct were alerted to the PIR by email and encouraged to circulate the notification to members and others as appropriate to ensure that the review captured a range of stakeholder views. An eBulletin, publicising the survey on HSE's COMAH website was also sent to 'COMAH Sites' and 'COMAH Strategic Forum' databases. CA colleagues were also encouraged to complete the survey.
13. Research focussed on the views and experiences of respondents applying COMAH 15, in particular;
- whether the changes were clear, coherent and easy to understand;
  - whether the Regulations achieved the objective of preventing on-shore industrial major accidents and limiting the consequences to people and the environment of any accidents which do occur;
  - how the Regulations work in practice, including any problems encountered with compliance;
  - costs and benefits of COMAH 15;
  - proportionality in relation to the risks being controlled; and
  - whether the objectives could be achieved with less regulation.

### **To what extent have the policy objectives been achieved?**

14. Although COMAH 15 introduced some changes, many of the requirements of COMAH 1999 were retained and carried forward, helping to preserve and build on a well-established regulatory regime and avoid confusion for both operators and regulators. To assist further, guidance supporting COMAH 15 was updated to address the changes, along with sector guidance for operators on the input of public information onto HSE's web-based system.
15. To determine the extent to which the objective was achieved, an in-depth analysis of the responses to the on-line survey from industry stakeholders and CA personnel was carried out, details of which are set out in the 'Evidence Review' (Appendix 2). The results are summarised below.

#### Were the changes clear, coherent and easy to understand?

16. Respondents were asked to indicate, on a scale of 1 ('absolutely') to 5 ('absolutely not') whether they thought the changes introduced in COMAH 15 were clear, coherent and easy to understand. The responses from industry stakeholders indicate that a large majority thought the changes were clear (71%), coherent (70%) and easy to understand (62%). Only 7% of respondents thought the changes were not clear, whilst 13% or less thought they were not coherent, or indicated they were not easy to understand.
17. Of the nine CA respondents that responded, 6 thought the changes were clear and 5 thought they were coherent and easy to understand. Only one respondent thought that the changes were not clear or coherent, while two respondents thought that the revised regulations were not easy to understand.

#### Do the changes ensure that the 'high levels of protection are maintained and further improved in line with the Directive, for human health and the environment'?

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<sup>5</sup> The Chemicals and Downstream Oil Industries Forum (CDOIF), COMAH Strategic Forum (CSF), Emergency Planning Society (EPS), United Kingdom Onshore Oil and Gas (UKOOG) and the Scotch Whisky Association.

18. Respondents were asked how they felt COMAH 15 compared to COMAH 1999 in terms of safety standards and the protection of human health and the environment. Again, the response from industry stakeholders was mainly positive, with 56% expressing an opinion that safety standards under COMAH 15 were improved. With regard to human health and the environment, 55% of respondents believe that human health is better protected while 60% believe that the environment is better protected. A sizeable percentage of respondents (40%) thought that safety standards had remained the same, while 42% and 38% felt that human and environmental protection respectively were unchanged. Negative responses were fairly low with only 4% of respondents believing safety standards were worse under COMAH 15. Similarly, in terms of human health and environmental protection, only 3% felt that the level of protection provided under COMAH 15 was worse.
19. The responses from CA personnel to this question were less varied with a greater percentage (67%) believing that regulatory protection of safety standards and human health remained the same as it was under COMAH 1999. This compares to 33% who thought it was better since the regulatory change. With regards to protection of the environment, the majority of respondents (88%) thought there had been no change however one person thought that protection was better following the change in legislation.
20. Despite a small number of negative responses, the key findings from the survey indicate that a clear majority of industry stakeholders and a majority of CA respondents found COMAH 15 to be clear, coherent and easy to understand, with no reduction in safety standards or protection of human health or the environment as a result of the changes. Overall, respondents were positive about the major accident hazard regulatory regime with the majority, across all groups, considering the regulations to be the most effective means of regulation.

#### Proportionality in relation to the risks being controlled

21. A key part of the policy objective was ensuring that any changes to the regulations did not place a disproportionate burden on industry, regulators or other stakeholders. To establish whether this had been achieved, industry stakeholders were asked whether they thought the requirements of COMAH 15 on their business were proportionate to the risks being controlled. Where they thought the requirements were disproportionate, they were asked to provide explanatory comments.
22. Although the majority of responses were positive (45%) or neutral (24%), about a third of responders (30%) expressed a view that certain aspects of the COMAH regime were disproportionate for their business. This is addressed in more detail in paragraph 26.

#### Costs

23. The cost of complying with COMAH 15, including cost recovery, was raised several times throughout the survey, although some of these costs were attributed to 'one-off' consultancy fees for revising COMAH safety reports at upper tier establishments.
24. Cost recovery is not a consequence of COMAH 15 having been in place since 2008 and linked to HSE's wider cost recovery framework. CA members use their own cost recovery rates which are calculated using Treasury guidance and include the cost of an inspector's time plus overheads. Therefore, the cost per hour for COMAH work will always be the same, regardless of whether an establishment is Upper or Lower Tier. An individual establishment's costs will be determined by the amount of time needed to discharge CA

functions and will be linked to hazard and performance. The requirement to recover the full economic cost of implementing the COMAH regime reflects Government policy set out in the Regulatory Futures review<sup>6</sup> which recommends that regulators should adopt a presumption of full cost recovery for regulated activities.

25. Where queries and disputes connected to COMAH cost recovery work do arise there is a set procedure in place<sup>7</sup> to ensure they are resolved promptly, transparently and fairly. Other members of the Competent Authority use their own procedures for handling cost disputes.

### Relevance

26. Several respondents expressed the view that COMAH 15 is more suited to larger 'higher hazard' industries involved in processing rather than those that just store hazardous substances. Whilst the application of the first Seveso Directive, adopted in 1982, was primarily dependent on the quantities of dangerous substances present at establishments, it also took account of the processes carried out. Seveso III (and Seveso II) is based entirely on inventories and applies to all establishments where dangerous substances are present in sufficiently large quantities to create a major-accident hazard regardless of industry (although there are limited exemptions for nuclear, military and mining activities). Significant storage accidents such as Sandoz in Switzerland in 1986, Enschede in the Netherlands in 2000 and Tianjin, China in 2015 indicate that the storage of dangerous substances is a hazardous activity and therefore this application is still considered appropriate.

### Duplication of regulation

27. Some respondents felt that both CA and business resources were being 'wasted' by having to regulate low-risk establishments already subject to other regulatory regimes<sup>8</sup>, stating that this led to increased administrative work and regulatory confusion. Although health and safety regulations such as COSHH and DSEAR apply at many COMAH establishments, they are unlikely to be sufficient in isolation, because they focus on specific risks and may not take account of the wider effects on process operating conditions or containment required by COMAH 15. Care is taken to ensure that requirements aren't duplicated, for example a risk assessment carried out under DSEAR may be referenced in a COMAH safety report. HSE also works with other regulators to avoid overlap and duplication with other regulatory regimes such as environmental permitting and hazardous substances consent, with information provided under one regime being deemed acceptable under another.

### Safety reports

28. A number of respondents felt that there was an over emphasis on producing detailed safety reports with a disproportionate amount of time and resource being spent on compiling them. This is covered in more detail in paragraphs 35 – 36 below.

### Other concerns

29. COMAH 15 requires information regarding both upper and lower tier establishments and their hazards to be made permanently and electronically available to the public. A small

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<sup>6</sup> (available at [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/582283/Regulatory\\_Futures\\_Review.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/582283/Regulatory_Futures_Review.pdf))

<sup>7</sup> <https://www.hse.gov.uk/charging/competent-authority-guidance-on-cost-recovery.pdf>

<sup>8</sup> For example: Control of Substances Hazardous to Health (COSHH), Provision and Use of Work Equipment Regulations (PUWER) and Dangerous Substances and Explosive Atmospheres Regulations (DSEAR)

number of respondents questioned whether making information available to the public was in the best interests of establishments, in terms of commercial confidentiality and national security, and risked causing unnecessary alarm to the public. The public information database, hosted by HSE, is designed to ensure that information that might compromise national security or which is of a sensitive nature is not available to the public. This follows extensive consultation between HSE, the Home Office, the Centre for the Protection of National Infrastructure and the National Counter Terrorism Security Office prior to it becoming operational. Operators are required to identify issues in their safety report which are personally or commercially confidential or have national security implications so these can be redacted before information is disclosed following a request under the Freedom of Information or Environmental Information Regulations.

30. One respondent expressed concerns about heavy fuel oils (HFOs) being listed as a named substance in COMAH 15, the effect of which was to raise the threshold of the quantity allowed to be stored. They felt that this amounted to deregulation under the COMAH regime and a potential reduction in environmental protection. The change to the listing of HFOs arose from an amendment to Directive 96/82/EC (Seveso II) by Article 30 of Seveso III, implemented via an amendment to COMAH 1999 in 2014<sup>9</sup> and was supported by up to date scientific knowledge about the hazards of HFOs.

### **What were the original assumptions?**

31. Although COMAH 15 introduced few new duties, there were some key changes such as the move from CHIP to CLP and increased access to information for the public. The main costs to industry, which represent work required to be undertaken to become compliant with the COMAH 15, was estimated at £4.57m overall comprising;

- updating safety reports;
- redacting safety reports;
- managing public information and
- the cost of requiring emergency responders to co-operate and attend external emergency plan tests at Upper Tier (UT) COMAH establishments.

32. The main savings were expected to arise from a net decrease in the number of establishments in scope of COMAH, resulting in direct ongoing savings to business and reduced ongoing cost recovery by the CA for some activities. Significant qualitative and quantitative research was carried out when compiling the IA which predicted a decrease of between around 13 to 18 establishments in scope. Subsequent data analysis however suggests that the number of establishments moving in and out of scope amounts to a likely net decrease of one.

33. An estimation of the costs and benefits of COMAH 15 using the evidence that was collected as part of this PIR is set out in the 'Economic Analysis' (Appendix 3). It also compares those estimates to the costs and benefits estimated by HSE in the 2014 Impact Assessment that was produced as part of the new Regulations.

### **Were there any unintended consequences?**

34. A large proportion of respondents said that, in their opinion there had been no unintended consequences as a result of the changes in COMAH 15. Some respondents raised issues that they felt were 'unintended consequences', such as costs to upgrade COMAH safety

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<sup>9</sup> The Heavy Fuel Oil (Amendment) Regulations 2014 implement Article 30 of Council Directive 2012/18/EU ('Seveso III') by amending the Control of Major Accident Hazards Regulations 1999 (COMAH).



reports, COMAH cost recovery, and perceived duplication of regulation however these have all been either addressed previously or are not 'unintended consequences'.

**Has the evidence identified any opportunities for reducing the burden on business?**

35. Several respondents to the survey commented on the quantity of information and level of detail requested in Safety Reports stating they found it disproportionate to the hazards being controlled. HSE is aware of similar concerns having been raised by industry through other routes. Safety Reports are a key part of the COMAH regime for Upper Tier establishments, with requirements for them to be produced prior to the commencement of construction or operation of new establishments and reviewed in the light of significant changes, or at least every five years. Due to the maturity of both the regulatory regime and the sector the majority of reports are now five-year review reports.
36. These comments have been considered by HSE as part of a review of the safety report process underway prior to the PIR survey being conducted. A streamlined approach to the examination of such reports is in development and steps are being taken to ensure information requirements are proportionate to the establishments' major accident potential.

**For EU measures, how does the UK's implementation compare with that in other EU member states in terms of costs to business?**

37. Regulation 34 of COMAH 15 includes a requirement to have regard, as far as is reasonable, to how the Directive has been implemented in other member states. Ongoing engagement with EU officials at meetings, conferences, and as a member of the Seveso Expert Group etc. has not highlighted any significant areas of concern in terms of the implementation of Seveso III in the EU, such as costs to business.

**What next steps are proposed for the Regulations (e.g. remain/renewal, amendment, removal or replacement)?**

38. Although some respondents believe that the objectives of COMAH 15 could be achieved with less regulation, evidence from the survey confirms that the majority of stakeholders agree that the Regulations are fit for purpose and meet their objectives.
39. There are therefore no immediate plans to make changes to the Regulations, however COMAH 15 will be reviewed again in 5 years, subject to any changes to the wider regulatory regime following the UK's exit from the EU. Until then we will continue to focus on how COMAH is applied, ensuring costs to industry, regulators and other stakeholders remain proportionate while ensuring high levels of protection for human health and the environment.

## **Appendix 2**

# **Post Implementation Review of The Control of Major Accident Hazards Regulations 2015 (SI 2015/0483)**

## **Evidence Review**

Author(s): Rachel Wilson and Miles Burger

Date: 21/11/2019

## SUMMARY

- Regulation 34 of The Control of Major Accident Hazards Regulations 2015 (SI 2015/0483) ('COMAH 15') requires a review of COMAH 15 to take place before 1<sup>st</sup> June 2020.
- The review – known as a post-implementation review (PIR) – requires that the objectives of the COMAH regulations be set out, assessed to see whether they have been achieved and whether they can be achieved with less regulation.
- Prior to starting the PIR, HSE's Regulation Committee and Evaluation Governance Group (EGG) considered the requirements of the work and deemed it to be 'medium' in terms of scale and proportionality.
- To ensure a suitably proportionate approach was used, a light-touch quantitative research approach was employed to collect primary evidence. This consisted of a couple of on-line surveys; one for COMAH operators, emergency planners & core responders survey; and one for the Competent Authority (CA). In addition, regulatory data was used to assess the number of establishments moving in and out of scope, as well as changing tiers, within COMAH.
- In terms of the COMAH regime (Part 1 of the PIR), most respondents agreed that it had achieved its objective of preventing onshore industrial major accidents and limiting the consequences to people and the environment.
- Furthermore, there was general agreement amongst respondents that the COMAH Regulations *still work* as a means of preventing on-shore industrial major accidents.
- As for whether the prevention of on-shore industrial major accidents could be done with less regulation, there was a more mixed response. Four in ten respondents indicated it could *not* be done with less regulation, while a further third thought that it could. As alternatives, a proportion of respondents suggested that there was already effective coverage of the risks in other pieces of health and safety legislation. Another suggestion was to simplify the application of the regulations.
- In terms of the objectives relating specifically to COMAH 15 (Part 2 of the PIR), there was broad agreement that:
  - The COMAH 15 changes were clear, coherent and easy to understand; and
  - COMAH 15 has maintained or strengthened protections for safety, human health and the environment.
- In respect of whether COMAH 15 placed a proportionate burden on industry, while four in ten respondents felt it did, a further third disagreed. One of the main reasons given by respondents who disagreed is that they felt that COMAH was inappropriate and disproportionate for their particular business.
- The assumptions underlying the costs and benefits of the COMAH 15 regulations are detailed in the original impact assessment (IA) and have been revised based on 'actuals' collected as part of the PIR. To this end, the equivalent annual net cost to business (EANCB) of COMAH 15, estimated as

part of this PIR with the most up to date assumptions and actual data is £3.56m. In comparison, the EANCB estimated in the original IA was £4.57m in 2014 prices. The difference between these estimates is a decrease of £1.0m (or 22%). The primary reason for the difference is due to the number of establishments which were predicted to move in and out of scope of COMAH, and how many actually did.

- Of those responding to the question about any unintended consequences resulting from the introduction of COMAH 15, the vast majority indicated that there had not been any. The few who did provide substantive comments suggested that the cost of compliance was potentially an unintended consequence.
- As detailed previously, the comments provided in response to the question about whether the COMAH regulatory regime can achieve its goals with less regulation do not provide hugely viable solutions to reducing the burden on business. At the next five-year review, however, there will be an opportunity to reconsider the requirements of COMAH in the context of the current UK sector and regulatory landscape.
- Ongoing engagement with EU officials at meetings, conferences, and as a member of the Seveso Expert Group etc. has not highlighted any significant areas of concern in terms of the implementation of the COMAH regulations in the EU compared to the UK, including areas such as costs to business.

## Introduction

1. This Evidence Review has been undertaken by the Health and Safety Executive (HSE) to accompany and support the Post-Implementation Review (PIR) of The Control of Major Accident Hazards Regulations 2015 (SI2015/0483) ('COMAH 15').
2. The primary aim of the COMAH regulations is, and has been, to prevent major accidents involving dangerous substances and limit the consequences to people and the environment of any accidents which do occur. To this end, COMAH 15 implements the majority of the European Directive 2012/18/EU<sup>10</sup> (known as Seveso III) in Great Britain, replacing the 1999 Regulations<sup>11</sup>.
3. The PIR, and the corresponding report, must meet the legislative requirements set out in regulation 34 of COMAH 15 to “*carry out a review of these Regulations*” within five years of the regulations coming into force (so 1<sup>st</sup> June 2020). Regulation 34(3) specifies that the PIR report must:
  - (a) set out the objectives intended to be achieved by the Directive and by these Regulations;
  - (b) assess the extent to which those objectives are achieved (*e.g. to what extent are the COMAH regulations, and the 2015 regulations, working?*); and
  - (c) assess whether those objectives remain appropriate and, if so, the extent to which they could be achieved with a system that imposes less regulation (*e.g. is government intervention in major accident hazard prevention still required? Are the COMAH regulations, and COMAH 15, still the most appropriate approach?*).
4. As part of the PIR planning process, HSE’s Regulation Committee (Reg Com) assessed the COMAH 15 PIR as part of a wider group of major hazards PIRs in terms of their scope and scale. ‘Scope’ refers to whether the PIR needs to look at the impact of the specific legislative changes or, alternatively, whether it should consider the appropriateness of the overarching legislative framework in which the changes sit. Alongside this, ‘scale’ considers the wider importance of the PIR in terms of its political visibility, predicted economic impact, number of duty-holders it affects, etc. and therefore the level of resource which is required (high, medium or low). In the case of the major hazard PIRs under which COMAH 15 sat, the scope was considered wide (so the PIRs need to establish whether their overarching regulatory regimes are still ‘fit for purpose’)

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<sup>10</sup> DIRECTIVE 2012/18/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on the control of major-accident hazards involving dangerous substances

<sup>11</sup> <https://www.hse.gov.uk/pUbns/priced/1111.pdf>

and the scale was ‘medium’. In terms of COMAH 15 specifically, the reason for it being considered ‘medium’ scale was due to the following reasons:

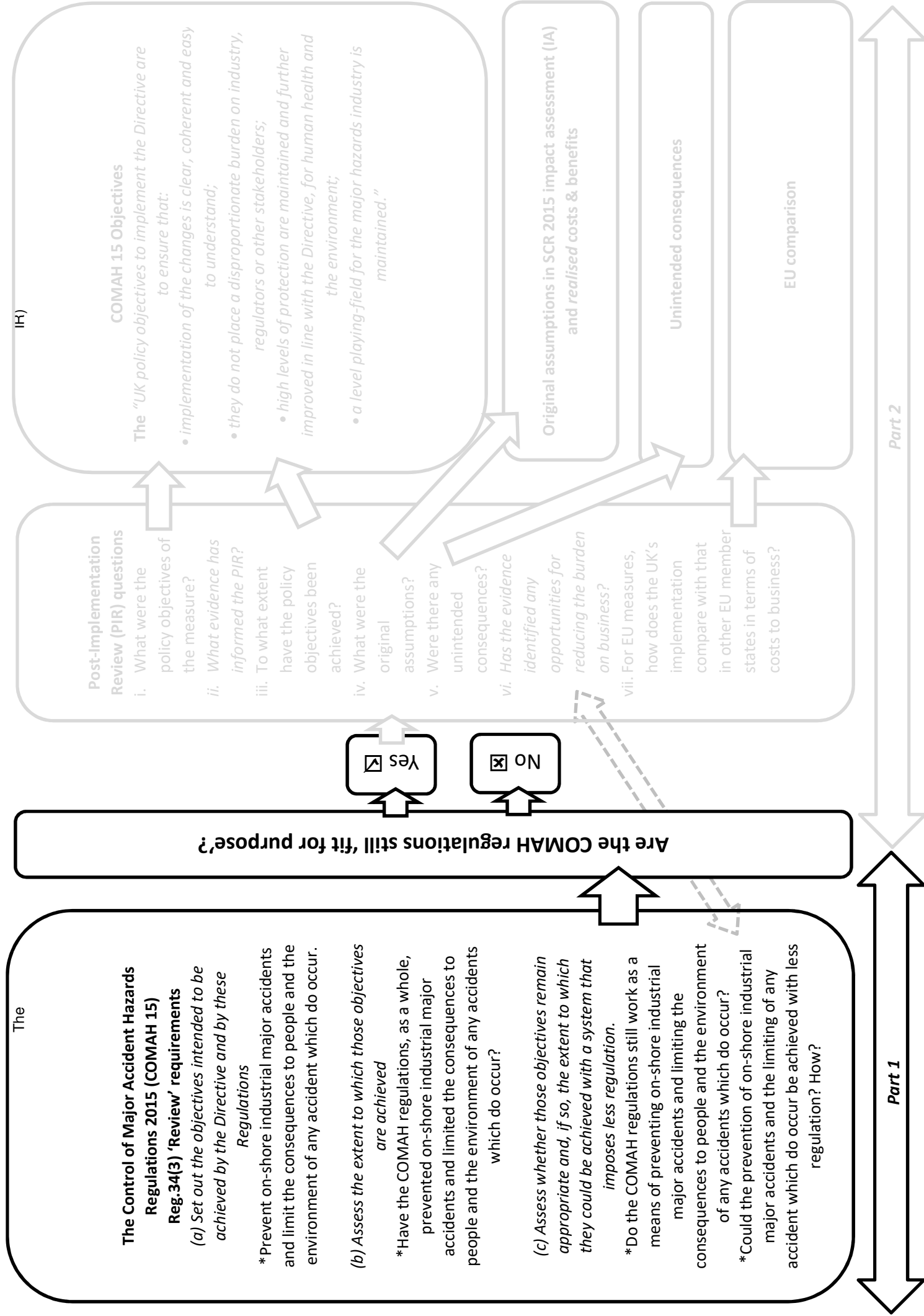
- The Equivalent Annual Net Cost to Business (EANCB) from the original impact assessment (IA) for the transposition of the Seveso III Directive into UK Law through the COMAH Regulations 2015 (IA No: HSE 0082) was calculated to be £4.57 million in 2014 prices. While this figure is below the £5 million de minimis threshold required by the Regulatory Policy Committee (RPC), it is right on the cusp. This analysis was designed to be appropriate for submission to the Regulatory Policy Committee if the cost estimates weren’t found to have reduced below £4m EANCB.
  - The regulatory changes in COMAH 15 did not impact lots of businesses, as there are only approximately 900 COMAH establishments<sup>12</sup>.
  - COMAH 15 builds on a regime that has been in force in the UK and rest of the EU for more than thirty years, and which industry and other duty-holders are predominantly content with.
  - The COMAH 15 regulations are uncontroversial, introducing few new duties.
  - Finally, COMAH 15 predominately ‘copies out’ the requirements of Seveso III - a European Directive - so there is limited scope for the Government to change the regulations as long as the UK remains a member of the European Union (or is bound by its requirements – e.g. during an agreed implementation period for EU exit).
5. While Reg Com determined scope and scale, HSE’s Evaluation Governance Group (EGG) considered whether the proposed research approach was proportionate and sensible. To this end, EGG assessed whether the suggested data collection methods were appropriate to get the required evidence but not so onerous as to place an undue burden on duty-holders. Reflecting the Reg Com decision, EGG also felt that the proposed research approach lent itself to a medium-level PIR and signed the research plan off on that basis.
  6. To answer the specific questions within Regulation 34(3), and to ensure a suitably proportionate approach was used, a light-touch quantitative research approach was employed to collect primary evidence. This consisted of several on-line surveys. In addition, regulatory data was used to assess the number of establishments moving in and out of scope, as well as changing tiers, within COMAH.
  7. The first step in the review is to consider “*the objectives intended to be achieved by the Directive and by these Regulations*” – namely the major accident hazard regime detailed in the COMAH regulations – and “*assess the*

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<sup>12</sup> As of November 2018 there were 873 COMAH establishments (see [https://www.whatdotheyknow.com/request/comah\\_sites\\_list\\_lower\\_and\\_upper](https://www.whatdotheyknow.com/request/comah_sites_list_lower_and_upper))

*extent to which those objectives”* have been achieved; essentially, is the COMAH regime still ‘fit for purpose’? Does it meet its over-arching objective(s)? Only once this initial ‘hurdle’ has been cleared is it appropriate to consider the more specific objectives and changes within the 2015 COMAH regulations. As such, the Evidence Review reflects this approach – detailed in Diagram 1 (Structure of COMAH 15 PIR evidence review (Part 1) (below) – with the numbered sections directly mapping onto headings within the main document (e.g. ‘*i. What were the policy objectives ...*’ in the diagram equates to the ‘*i. What were the policy objectives ...*’ headed section in the main document).

**Diagram 1: Structure of COMAH 15 PIR evidence review (Part 1)**





## **Part 1**

### **The Control of Major Accident Hazards Regulations 2015 (SI2015/0483) (COMAH 15) Reg.34(3) ‘Review’ requirements**

8. The major accident hazard regime which led to the COMAH regulations came about following several incidents in Europe during the 1970s, the most significant being that which took place in Seveso, Italy, in 1976. Here, the accidental production and release of a dioxin as an unwanted by-product from a runaway chemical reaction led to widespread contamination. Such incidents, and the recognition of the differing standards of controls over industrial activities within the European Union, led the European Commission to propose a Directive on the control of major industrial accident hazards.
9. The original Seveso Directive comprised a three-part strategy that is still relevant in the current Directive, and subsequent regulations, namely:
  - (a) Identification of major hazard establishments by reference to the presence of either named substances or categories of substances e.g. toxic or flammable above certain threshold quantities;
  - (b) Prevention and control of major accidents by technical, procedural and organisational measures and to demonstrate these in a safety report prepared by the operator and submitted to the regulator for assessment, and
  - (c) Mitigation of the consequences of a major accident by preparation of emergency plans and land use planning controls.
10. There have been several updates and amendments leading to new versions of the Directive and regulations. For example, the COMAH Regulations 1999 brought protection of the environment into scope in addition to the protection of people. These updates often reflect lessons learned from major accidents in Europe and beyond. The latest version of the Directive - Seveso III - was adopted on 4 July 2012.

#### ***(a) Set out the objectives intended to be achieved by the onshore industrial major accident hazard regulatory system***

11. In order to consider whether the onshore industrial major accident hazard regulatory regime works, and is still ‘fit for purpose’, the over-arching objective(s) of said regulatory system must first be considered. A useful summary of what the major accident hazard regulatory regime objective entails is detailed in HSE’s ‘*The Control of Major Accident Hazards Regulations 2015: Guidance on Regulations*’ document (L111, 3<sup>rd</sup> edition)<sup>13</sup> and the opening

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<sup>13</sup> <https://www.hse.gov.uk/pubns/priced/l111.pdf>, front page

paragraphs of the Explanatory Memorandum to the 2015 COMAH regulations<sup>14</sup>; these summaries can be paraphrased as follows:

*Prevent onshore industrial major accidents and limit the consequences to people and the environment of any accidents which do occur.*

**(b) Assess the extent to which those objectives are achieved**

12. In order to assess whether the above stated objective of the major accident hazard regulatory regime has been achieved, COMAH operators, emergency planners, core responders and the competent authority (CA)<sup>15</sup> were surveyed. They were asked to indicate on a scale of 1 to 5, where 1 meant ‘absolutely’ and 5 meant ‘absolutely not’ whether they agreed or disagreed with the following statement:

*‘The COMAH Regulations as a whole have achieved their objective of preventing onshore industrial major accidents and limiting the consequences to people and the environment of any accidents which do occur’.*

13. (Please note when reading through the summaries of the survey results that not all respondents to the surveys answered all the questions – i.e. one respondent may have completed the entire survey, while another may have answered only five questions. As such, where ‘no. of respondents’ is recorded this will refer to the number of people answering *any* question on the survey, while the number of respondents detailed in the ‘Evidence’ section will relate to those answering that specific question.)

Research instrument	No. of respondents	Evidence
COMAH operators, emergency planners & core responders survey	<i>n</i> = 134 (full or partial responses to survey)	Of the 134 people who responded to this question, about two thirds (69%, 92) chose ‘1’ or ‘2’ on the scale, indicating that they strongly agreed or agreed that the COMAH regulations have achieved their objective of preventing onshore industrial major accidents and limiting the consequences to people and the environment. A further quarter (23%, 31) chose 3 on the scale, suggesting a certain ambivalence about whether the objective was achieved. Less

<sup>14</sup> [http://www.legislation.gov.uk/uksi/2015/483/pdfs/ukxiem\\_20150483\\_en.pdf](http://www.legislation.gov.uk/uksi/2015/483/pdfs/ukxiem_20150483_en.pdf), paragraph 2.1, page 1

<sup>15</sup> The COMAH regulations are enforced by a Competent Authority (CA) comprising the Health and Safety Executive (HSE), the Office for Nuclear Regulation [ONR] (for nuclear establishments), the Environment Agency (EA) in England, Natural Resources Wales (NRW) in Wales and the Scottish Environment Protection Agency (SEPA) in Scotland. The Agencies lead on the environmental aspects of the legislation.

Research instrument	No. of respondents	Evidence
		than one in ten (8%, 11) disagreed with the statement.
Competent Authority (CA) survey	n = 9 (full or partial responses to survey)	There were 9 responses to this question, with the vast majority (over three quarters) (78%, 7) indicating that they agreed with the statement (a '2' on the answer scale). In addition, one respondent (11%) 'absolutely' agreed with the statement. The remaining one response (11%) indicated '4', disagreeing that the COMAH regulations had met its objective.

14. Please note – full details of the two surveys listed above (so the 'COMAH operators, emergency planners & core responders' one and the 'Competent Authority [CA]' one) are provided in the following section entitled '*ii. What evidence has informed the PIR?*'.

15. In summary, the majority of respondents were positive about the major accident hazard regulatory regime, with between two-thirds and three-quarters indicating that they agreed that it had met its objectives of preventing onshore industrial major accidents and limiting the consequences to people and the environment of any accidents which do occur. Equally encouraging is the fact that, overall, there was little disagreement about the achievement of the objectives, with about a quarter of COMAH operators, emergency planners & core responders simply being neutral about the statement.

***(c) Assess whether those objectives remain appropriate and, if so, the extent to which they could be achieved with a system that imposes less regulation.***

16. Alongside the consideration of whether the regulatory regime has achieved its objectives is the need to consider whether the objective remains appropriate and whether the same results can be achieved with a system which imposes less regulation. To this end, respondents were asked to answer against a five-point scale (with 1 again meaning 'absolutely' and 5 indicating 'absolutely not') about the following statement:

*'COMAH Regulations still work as a means of preventing on-shore industrial major accidents and limiting the consequences to people and the environment of any accident which do occur.'*

Research instrument	No. of respondents	Evidence
COMAH operators, emergency planners & core responders survey	$n = 134$ (full or partial responses to survey)	In total, 132 responses were received for this question with nearly two-thirds (64%, 84) indicating that they either ‘absolutely’ agreed or agreed with the statement; nearly a quarter (27%, 36) of these responses fell into the ‘absolutely’ agreed category (or ‘1’ on the answer scale). Elsewhere, about a quarter of responses (23%, 30) were neutral. Finally, there were higher levels of disagreement than the question about the achievement of the objective, with about a quarter (23%, 30) of responses falling into this camp. (Of these only three [2%] indicated a strong disagreement with the statement).
Competent Authority (CA) survey	$n = 9$ (full or partial responses to survey)	All 9 respondents from the Competent Authority (CA) answered this question, with nine out of ten (89%, 8) indicating that COMAH still works as a means of preventing on-shore industrial major accidents. The remaining respondent (11%) was neutral on the statement.

17. There was general agreement that the COMAH Regulations still work as a means of preventing on-shore industrial major accidents, with between two-thirds and nine in ten of responses supporting the statement. There were, however, slightly higher levels of disagreement, especially from COMAH operators, emergency planners & core respondents. There was a similar level of neutrality compared to the previous question.

18. Having considered whether the COMAH regulations still work, respondents were subsequently asked whether the prevention of on-shore industrial major accidents (and the limiting of the consequences if they do happen) could be done with less regulation.

Research instrument	No. of respondents	Evidence
COMAH operators, emergency	$n = 134$ (full or partial	Just over four in ten (44%, 59) of the 133 people who answered this question indicated that they <i>did not</i> think that the

Research instrument	No. of respondents	Evidence
planners & core responders survey	responses to survey)	prevention of major accidents could be done with less regulation. On the other side, three in ten (30%, 40) thought that it <i>could</i> be done with less regulation. The remaining quarter (26%, 34) indicated that they didn't know or were unsure.
Competent Authority (CA) survey	<i>n</i> = 9 (full or partial responses to survey)	Again, all 9 respondents from the CA answered this question, with over half (56%, 5) indicating that they <i>did not</i> think the regulation of major accidents could be done with less regulation. A quarter of the remaining responses (22%, 2) indicated that it <i>could</i> be done with less regulation and a final quarter (22%, 2) indicating they didn't know / were unsure.

19. Overall, across both the CA and the COMAH operators survey, the results for this question were relatively evenly distributed amongst the three different answers, with a slight preference for rejecting the 'less regulation' suggestion (but not by much).

20. Respondents who indicated that they thought that preventing major accidents could be done with less regulation were consequently asked to briefly describe 'how'.

Research instrument	No. of respondents	Theme (no. of responses which mention theme)
COMAH operators, emergency planners & core responders survey	<i>n</i> = 134 (full or partial responses to survey)  Of which 36 provided a response to this question	<ul style="list-style-type: none"> <li>• Use existing regulations / avoid COMAH overlap (8)</li> <li>• Simplify application of regulations (7)</li> <li>• Easier reporting (4)</li> <li>• Joint CA/industry collaboration (4)</li> <li>• More efficient use of resources (2)</li> <li>• Self-regulation (2)</li> <li>• Exclude explosives / enhance ER2014 (1)</li> <li>• Focus on poor operators (1)</li> <li>• Improve use of best practice (1)</li> <li>• Increase workplace intervention (1)</li> <li>• More FOD / fewer HID interventions (1)</li> </ul>

Research instrument	No. of respondents	Theme (no. of responses which mention theme)
		<ul style="list-style-type: none"> <li>• Not suited to industry (1)</li> <li>• Process safety gateway (1)</li> <li>• Duplication for multiple establishment operators (1)</li> <li>• Clarify inspector requirements (1)</li> </ul>
Competent Authority (CA) survey	<p><math>n = 9</math> (full or partial responses to survey)</p> <p>Of which 2 provided a response to this question.</p>	<ul style="list-style-type: none"> <li>• Reduce burden of 5-year reviews on less complex unchanged establishments (2)</li> </ul>

21. (Please note that the details included after the below quotes reflect the following information [where available]:

- establishment status under CLP regime [COMAH 2015] [e.g. Upper Tier, Lower Tier, Out of Scope];
- main business activity of respondent's company/organisation; and
- approximate number of people working at respondent's company/organisation across Great Britain [GB]).

22. In terms of possible approaches for regulating onshore industrial major accidents with less regulation, those responding to the COMAH operators, etc. survey suggested that there was already effective coverage of the risks in other pieces of legislation. It was felt that the use or storage of small amounts of certain materials already covered by DSEAR (Dangerous Substances and Explosive Atmospheres Regulations 2002) or Office for Nuclear Regulation (ONR) regulation 'trapped' them into compliance with COMAH regulations. Some respondents suggested that integrating existing sets of regulation could help prevent major on-shore accidents while reducing regulation overall. For instance:

*"...A lot of the major accident hazards can be regulated using DSEAR, COSHH [Control of Substances Hazardous to Health 2002], EPR [Environmental Permitting Regulations 2010] without any loss of impact" (Upper Tier; Chemicals/Manufacture of chemical products, including plastic, rubber, pharmaceuticals or man-made fibre; 250-999)*

*“...we are highly regulated under the Environmental Permitting Regulations and Human Health risks are well controlled by UK HSE regulations”* (Upper Tier; Other types of Manufacturing (i.e. not explosives or chemicals); 250-999)

*“... Much of the controls required by DSEAR would prevent major accidents, without the need for those sites to be covered by COMAH”* (Spirit's Company; 250-999)

23. A number of respondents to the COMAH operators, etc. survey also indicated that the process needs to be more focused on what the objectives of the regulations are *actually* trying to achieve, rather than simply ‘ticking the boxes’ or chasing compliance. By realigning the focus of COMAH (*“Less Theory more practice”*) [Lower Tier; Chemicals/Manufacture of chemical products; 250-999] the same protections can be retained with less regulation. In addition, this ‘simplification’ approach should place less emphasis on paperwork such as report submissions. For example:

*“The focus should be on simplification of application rather than the scope of the Regulations, e.g regulatory expectations for safety report content are excessive, driving resource commitment disproportionate [sic] to risk reduction benefit...”* (Upper Tier; Oil refining; 250-999)

*“By concentration on the objectives of the regulations rather than by detailing processes to be followed...”* (Upper Tier; Public services)

*“Value of COMAH Regulations not in question, rather the SRAM and level of detailed reporting requirements lead to a focus on academic/presentational matters with a significant cost/time burden to address...”*

24. Similarly, several comments reflected the feeling that report submission should be made easier, that there was too much emphasis on reports and that the submission and update requirements had become onerous. For example:

*“less onerous reporting requirements”*

*“Predictive part of COMAH Reports are too onerous and prescriptive”* (Upper Tier; Chemicals/Manufacture of chemical products; 250-999)

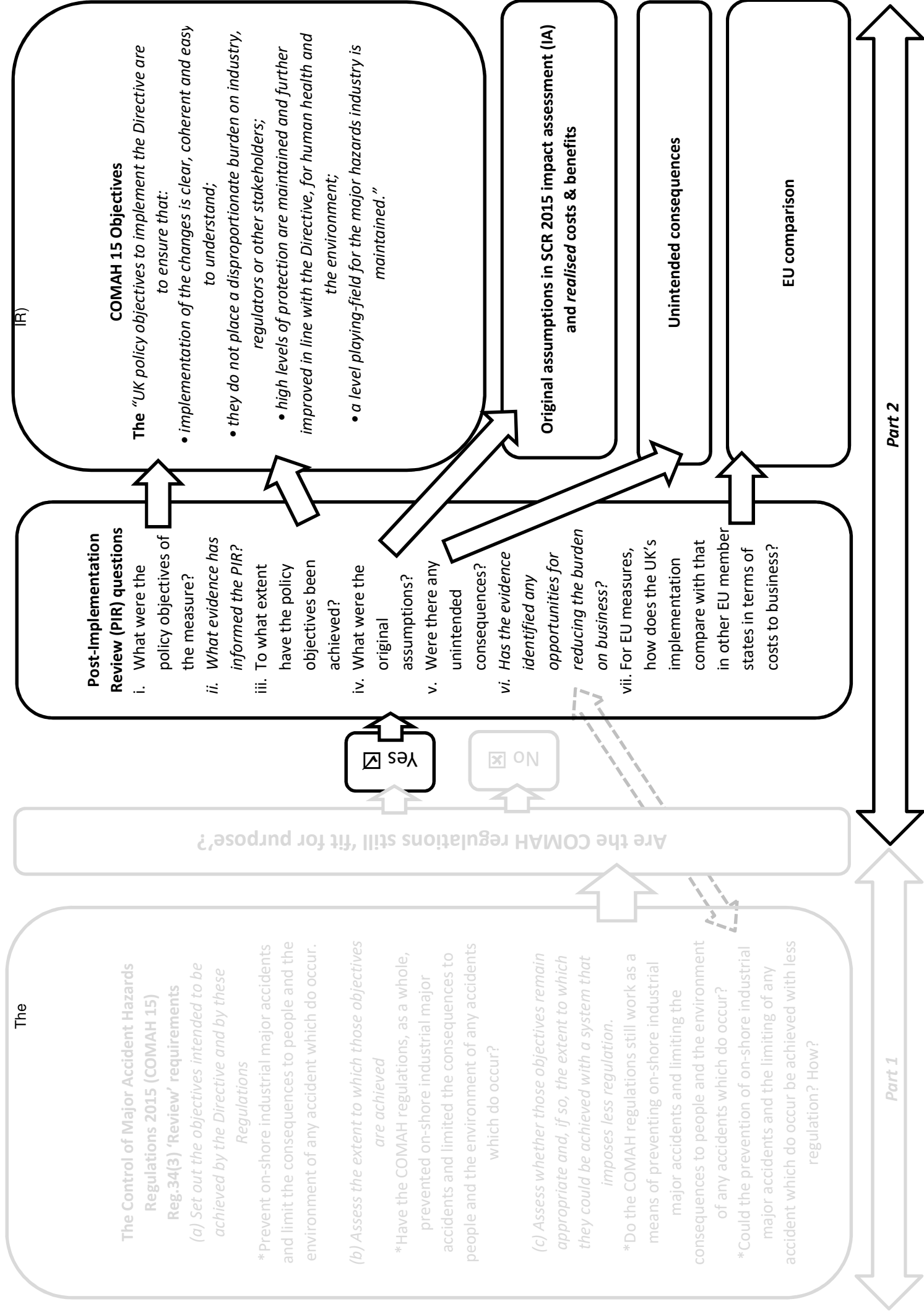
25. Finally, it was suggested that collaboration between industry/industrial bodies and Competent Authorities is the answer to less regulation whilst maintaining standards. These responses promoted a ‘mutually beneficial’ approach which could rely on ‘business drivers’ to improve safety standards and Competent Authorities’ ‘effective’ implementation of regulations. It should be noted, however, that industry and the CA already meet and collaborate regularly,

including via the COMAH Strategic Forum (CSF) and the Chemicals and Downstream Oil Industries Forum (CDOIF).

26. In respect of the CA survey, only two respondents provided a comment in relation to this question with both indicating that requirements of the five-year review of safety reports could be 'rationalised' for those establishments which both are less complex and have not changed over the intervening period.
27. In conclusion, the majority of respondents to the COMAH operators, etc. survey and the CA survey support the contention that the current major accident hazard regulatory regime, and the COMAH regulations, has achieved its objective and still works as a means of preventing major onshore industrial accidents. There is, however, less support for the current *level* of regulation, with a sizeable minority of respondents indicating that it could be achieved with less regulation. Even taking into account this more ambivalent finding, on the balance of evidence, it would seem that the aforementioned regulatory regime is still 'fit for purpose'.
28. By clearing the 'fit for purpose hurdle' the PIR now moves from Part 1 to Part 2, which involves looking at the specific objectives and issues around the 2015 COMAH regulations.



Diagram 2: Structure of COMAH 15 PIR evidence review (Part 2)



## **Part 2**

### **Summary of the Control of Major Accident Hazards Regulations 2015 (COMAH 15)**

29. Although many duties are similar from the 1999 COMAH Regulations, the 2015 COMAH Regulations contain some new or changed duties. These changes include the following:

<b>Summary of differences between COMAH 1999 and COMAH 2015</b>
<ul style="list-style-type: none"><li>• The list of substances covered by the Regulations has been updated and aligned to the Classification, Labelling and Packaging Regulations 2008 (CLP).</li><li>• Some definitions have been changed.</li><li>• There are transition arrangements for safety reports.</li><li>• For emergency planning, there is a new requirement for co-operation by designated authorities in tests of the external emergency plan.</li><li>• There are stronger requirements for public information, including a duty for lower-tier establishments to provide public information. There are provisions for electronic access to up-to-date public information.</li><li>• The domino effects duty is broader<sup>16</sup>.</li><li>• Stronger requirements for the competent authority on inspection.</li><li>• Local authorities must now inform people likely to be affected following a major accident.</li></ul> <p>(<u>Source</u>: ‘<i>The Control of Major Accident Hazards Regulations 2015: Guidance on Regulations</i>’ document (L111, 3<sup>rd</sup> edition)<sup>17</sup>)</p>

### **Post-Implementation Review (PIR) questions**

30. As detailed in Diagram 2 ‘Structure of COMAH 15 PIR evidence review (Part 2)’ (above), the first part of the PIR considered whether the underlying aspects of the on-shore industrial major accident regulatory regime were still considered the most effective way to prevent such events. If the overarching legislative structure is still seen as ‘fit for purpose’, only then should the PIR move onto considering the specific aspects of the changes detailed within COMAH 15. To this end, the evidence in Part 1 of this PIR suggests that the on-shore industrial major accident regulatory regime is still working and is still effective. Part 2 of the PIR therefore considers the legislative changes made by COMAH 15 in terms of the following questions:

<sup>16</sup> ‘Domino groups’ refers to groups of sites within sufficiently close proximity such that an incident at one may trigger an event at another.

<sup>17</sup> *Ibid* 4, paragraph 15, pages 6 and 7

- i. **What were the policy objectives of the measure?**
- ii. **What evidence has informed the PIR?**
- iii. **To what extent have the policy objectives been achieved?**
- iv. **What were the original assumptions?**
- v. **Were there any unintended consequences?**
- vi. **Has the evidence identified any opportunities for reducing the burden on business?**
- vii. **For EU measures, how does the UK’s implementation compare with that in other EU member states in terms of costs to business?**

**i. What were the policy objectives of the measure?**

**SCR 2015 Objectives**

31. While COMAH 15 and the overarching on-shore industrial major accident regulatory regime ultimately have the same ‘end-goal’, the changes implemented by COMAH 15 had specific objectives. These objectives were defined in the final COMAH 15 impact assessment which stated that the “UK policy objectives to implement the Directive are to ensure that:

- *implementation of the changes is clear, coherent and easy to understand;*
- *they do not place a disproportionate burden on industry, regulators or other stakeholders;*
- *high levels of protection are maintained and further improved in line with the Directive, for human health and the environment;*
- *a level playing-field for the major hazards industry is maintained.”<sup>18</sup>*

32. As to whether these stated policy objectives of SCR15 have been achieved, this will be covered below in section ‘iii. To what extent have the policy objectives been achieved?’.

**ii. What evidence has informed the PIR?**

33. The evidence which has informed the COMAH 15 PIR is detailed in this document, the ‘Evidence Review’.

34. In order to ensure that the PIR was representative of the various stakeholders affected by COMAH 15, HSE attempted to directly engaged with the following groups:

<b>COMAH Operators, Emergency Planners &amp; Core Responders</b>	<b>Competent Authority (CA)</b>
COMAH Operators	Health and Safety Executive (HSE)

<sup>18</sup> Impact assessment for the transposition of the Seveso III Directive into UK Law through the COMAH Regulations 2015 (IA No: HSE 0082) Paragraph 18, page10 and 11

<b>COMAH Operators, Emergency Planners &amp; Core Responders</b>	<b>Competent Authority (CA)</b>
<p>These are operators of establishments which come into scope of the COMAH regulations if they have dangerous substances at or above the threshold quantities in Schedule 1 of COMAH 2015. There are two tiers of regulatory control, known as Upper Tier (UT) and Lower Tier (LT), depending on the quantity and nature of dangerous substances present.</p>	<p><a href="https://www.hse.gov.uk/comah/">(https://www.hse.gov.uk/comah/)</a></p> <p>Office for Nuclear Regulation (ONR) (http://www.onr.org.uk/)</p> <p>Devolved Environmental Agencies:</p> <ul style="list-style-type: none"> <li>- Environment Agency (EA) (England) <a href="https://www.gov.uk/government/organisations/environment-agency">https://www.gov.uk/government/organisations/environment-agency</a>);</li> </ul>
<p><b>Emergency Planners</b></p> <p>COMAH requires internal and external emergency plans to deal with potential major accidents for those establishments with the greatest hazards. In terms of responsibility, the COMAH operator is responsible for the internal plan, and the local authority has responsibility for the external plan. Emergency planners are therefore the individual(s) who discharge these emergency planning duties on behalf of the COMAH operator and local authority.</p>	<ul style="list-style-type: none"> <li>- Natural Resources Wales (NRW) (Wales) <a href="https://naturalresources.wales">https://naturalresources.wales</a> and</li> <li>- Scottish Environment Protection Agency (SEPA) (Scotland) <a href="https://www.sepa.org.uk/">https://www.sepa.org.uk/</a><sup>19</sup>.</li> </ul>
<p><b>Core Responders</b></p> <p>Core responders are Category 1 responders as defined in the Civil Contingencies Act 2004<sup>20</sup>. They include, in turn, the ‘blue lights’ emergency services, accident and emergency services, local council, Primary Care Trust, local health board, port authority and appropriate agency for the environment.</p>	

<sup>19</sup> All devolved environmental agencies had the opportunity to contribute to the ‘COMAH Operators, Emergency Planners & Core Responders’ survey as Core responders / Category 1 responders.

<sup>20</sup> <https://www.hse.gov.uk/comah/inspectors-emergency-arrangements-comah-£s.pdf>, Annex 2, page 21

35. In order to capture views on the overarching COMAH regulations, as well as the new requirements added in 2015, surveys were developed using the online survey tool SurveyMonkey<sup>21</sup>. Two separate online surveys were subsequently developed in order to target COMAH operators, emergency planners and core responders, and the Competent Authority (CA). In order to ensure that respondents only answered questions which were relevant to them, the surveys were structured with a core set of ‘shared’ questions for both and then more topic specific questions where appropriate – for example, it was considered unlikely that regulators would have detailed knowledge of the costs associated with making the changes required to comply with COMAH15. As such, each survey considers different costs identified by the original impact assessment. (Blank copies of the surveys can be found at Annex A).

36. In order to reach as many of these stakeholders as possible, a variety of different channels were used to promote and disseminate the two online surveys. These included:

- A web-link to the survey being provided to the following trade associations / representative bodies who were asked to publicise it to their members - Chemicals and Downstream Oil Forum (CDOIF); Emergency Planning Society (EPS); Resilience Direct; UK Onshore Oil and Gas (UKOOG); COMAH Strategic Forum (CSF) and Scotch Whisky Association (SWA).
- A web-link to the survey on HSE’s COMAH homepage under the heading “COMAH Post Implementation Review – have your say here”.
- A web-link with some basic introductory text being added to the following e-bulletins - Seveso Directive; COMAH Strategic Forum (CSF) (227 addressees); and COMAH sites (655 addressees).
- Details put on HSE’s news feed, HSE’s Weekly Digest and HSE’s home page.

37. Further details of the two online surveys are provided below including number of responses, length of time the online survey was ‘live’ and demographics of respondents:

<b>Title of survey</b>	<b>Date undertaken</b>	<b>No. of respondents</b>
COMAH Operators, Emergency Planners & Core Responders survey	28 <sup>th</sup> June to 31 <sup>st</sup> July 2019	<i>n</i> = 134 (full or partial responses to survey)
<i>Details of Respondents</i>		
Approximately how many people work in your organisation across Great Britain (GB)?		

<sup>21</sup> <https://www.surveymonkey.co.uk/>

Title of survey	Date undertaken	No. of respondents
*2% (3)	Under 10	
*5% (7)	10 to 49	
*6% (8)	50 to 99	
*6% (8)	100 to 249	
*20% (27)	250 to 999	
*20% (27)	1000+	
*4% (5)	Don't know	
*37% (49)	No response	
Which of the following best describes the main business activity of your company/organisation?		
*19% (26)	Chemicals/Manufacture of chemical products	
*1% (1)	Explosives	
*4% (5)	Gas and pipeline	
*3% (4)	Logistics & transport	
*2% (3)	Onshore oil & gas	
*15% (20)	Other	
*7% (10)	Other types of Manufacturing	
*17% (23)	Public services	
*2% (3)	Utilities	
*29% (39)	No response	
Is the site where you work ...		
*47% (63)	One of a number of sites/establishments within a larger organisation which operates internationally	
*13% (17)	The only site/establishment in the organisation	
*40% (54)	No response	

Title of survey	Date undertaken	No. of respondents
Competent Authority (CA) survey	28 <sup>th</sup> June to 31 <sup>st</sup> July 2019	$n = 9$ (full or partial responses to survey)

**iii. To what extent have the policy objectives been achieved?**

38. In order to capture whether the policy objectives for COMAH15 had been achieved, each objective detailed in section '*i. What were the policy objectives of the measure?*' (above) will be considered alongside any evidence either supporting or challenging it.

**The ‘implementation of the [COMAH 15] changes is clear, coherent and easy to understand’**

39. Respondents to the online survey were asked on a scale of 1 to 5 (where 1 means ‘absolutely’ and 5 means ‘absolutely not’) whether they thought the changes introduced in COMAH were clear, coherent and easy to understand.

Research instrument	No. of respondents	Evidence
COMAH operators, emergency planners & core responders survey	n = 134 (full or partial responses to survey)	<p>Respondents indicated whether they thought the COMAH 15 changes were:</p> <p>*Clear: in total 124 people responded to this element of the question with nearly three-quarters (71%, 88) agreeing that the changes were clear (so ‘1’ or ‘2’ on the answer scale). Elsewhere, nearly a quarter (22%, 27) of the respondents were neutral with the remaining seven per cent (9) disagreeing.</p> <p>*Coherent: slightly more people responded to this change, with 126 responses. Of these, over two-thirds (70%, 88) agreed that the COMAH 15 changes were coherent. About one in six (17%, 22) were neutral, while a further one in six (13%, 16) disagreed.</p> <p>*Easy to understand: there were 124 responses to this question, with only six in ten (62%, 77) agreeing that the changes were easy to understand. Over a quarter (27%, 33) were neutral, while the remaining one in ten (12%, 14) disagreed.</p>
Competent Authority (CA) survey	n = 9 (full or partial responses to survey)	<p>All 9 respondents indicated their thoughts about the COMAH 15 changes and whether they were:</p> <p>*Clear: two-thirds (66%, 6) of respondents felt that the COMAH 15 changes had been clear, with nearly a quarter (22%, 2) taking a neutral stance. The final response (11%) answered ‘4’, so disagreed that the changes were clear.</p>

Research instrument	No. of respondents	Evidence
		<p>*Coherent: over half (55%, 5) felt that the changes had been coherent, with a third (33%, 3) being ambivalent. Finally, the remaining one respondent disagreed that the changes had been coherent.</p> <p>*Easy to understand: over half (55%, 5) of the respondents felt that the changes had been easy to understand. About a quarter (22%, 2) of them, however, were less positive and felt that the change hadn't been easy to understand. The same number of people (22%, 2) were neutral on the matter.</p>

40. The consensus from the online survey seems to be largely positive, with both sets of respondents suggesting that the COMAH 15 changes were clear, coherent and easy to understand.

**The COMAH 15 changes ‘do not place a disproportionate burden on industry, regulators or other stakeholders’**

41. Respondents to the online survey were asked on a scale of 1 to 5 (where 1 means ‘absolutely’ and 5 means ‘absolutely not’) whether they thought the requirements of COMAH 2015 on their business were proportionate to the risks being controlled.

Research instrument	No. of respondents	Evidence
COMAH operators, emergency planners & core responders survey	n = 134 (full or partial responses to survey)	<p>Responses from the 119 people who answered this question were relatively evenly distributed with over four in ten (45%, 54) indicating that they thought COMAH 15 was proportionate to the risk in their business. Nearly a third (30%, 36), however, indicated that they felt that the changes were disproportionate on their business. The remaining quarter (24%, 29) of responses were neutral.</p> <p>Of the 33 responses which provided further details about why they thought the changes</p>



Research instrument	No. of respondents	Evidence
		<p>were disproportionate, the following reasons were given:</p> <ul style="list-style-type: none"> <li>*Not suited to their particular industry (8)</li> <li>*Regulation is onerous (6)</li> <li>*Low hazard (5)</li> <li>*Over-emphasis on safety report (4)</li> <li>*Too broadly applicable (3)</li> <li>*Already covered by other regulations (2)</li> <li>*Need more focus on poor operators (2)</li> <li>*Unclear (2)</li> </ul> <p>A number of respondents highlighted the fact that the COMAH 15 regulations are not suited to their particular industry. For instance, the storage and/or transportation of hazardous substances was mentioned and compared to the processing of hazardous substances. For example, one response stated that <i>“we undertake storage of packaged goods only yet regulation is same as high hazard processing sites”</i> (Upper Tier; Logistics &amp; transport; 250-999). Others mention that their processes only involve small amounts of substances hazardous to the environment. Most felt that COMAH regulation is more suited to larger, more ‘volatile’ industries.</p> <p>Responders also articulated beliefs that the regulations are too onerous, either because of the Competent Authority’s interpretation and application of them, because the regulations themselves are inflexible, or because the operator was assigned too high a tier classification. For instance, a respondent commented that their <i>“main</i></p>

Research instrument	No. of respondents	Evidence
		<p><i>concern is with the CA's interpretation/application of the Regulations ... rather than with the Regulations themselves</i>" (Upper Tier; Oil refining; 250-999).</p> <p>Some respondents felt that they were low hazard and therefore the COMAH 2015 requirements were disproportionate in relation to their operations. In addition, the charging regime was seen as disproportionately high for lower tier operators. <i>"The charging regime is not proportionate to the risk as lower tier sites are charged at the same rate as upper tier sites. Lower tier sites are less risky by definition"</i> (Upper Tier; Chemicals/Manufacture of chemical products; 250-999).</p> <p>Finally, the over-emphasis on safety reports was again mentioned. The issue being the burden of having to produce them or an over-reliance on them among inspectors, resulting in missed opportunities to lower risk in more practical ways. To this end, one person said <i>"[t]oo much emphasis on a detailed safety report which costs a fortune to prepare and produce"</i> (Upper Tier; Onshore oil &amp; gas; Under 10).</p>

42. While a slight majority of respondents indicated that they thought the requirements of COMAH 15 were proportionate to the risk in their business, a significant minority of responses indicated dissatisfaction with this proposition. There seems to be unhappiness about the lack of flexibility within COMAH 2015 and its scope. For a number of respondents COMAH was seen as being not appropriate to the needs to their business. In addition, the amount of work required as a COMAH establishment was mentioned. If these comments are taken together, it suggests that some respondents feel that they are completing lots of paperwork for a regulation they don't feel is appropriate for their

business. (It should be noted, however, that the Seveso Directive is only focused on those establishments where dangerous substances are present in *sufficiently large quantities* to create a major-accident hazard. As such, some businesses may not appreciate that the scope of the regulations are about the risk posed by the presence of the substances, rather than the type of business or what is being done with the substances). Taking these concerns into account, the acceptance of this objective is slightly caveated.

**The COMAH 2015 changes ensure that the ‘high levels of protection are maintained and further improved in line with the Directive, for human health and the environment’**

43. Respondents to the online survey were asked how COMAH 2015 compares to COMAH 1999 (from ‘much better’ to ‘much worse’) in terms of: safety standards; protection for human health; and protection for the environment.

Research instrument	No. of respondents	Evidence
COMAH operators, emergency planners & core responders survey	<i>n</i> = 134 (full or partial responses to survey)	<p>Respondents provided feedback about the comparison between COMAH 2015 and COMAH 1999 in terms of:</p> <p>*Safety standards: in total 117 people answered this question. Of those answering, nearly six in ten (56%, 66) felt that COMAH 2015 was better than the previous set of regulations. Four in ten (40%, 47) thought that nothing had changed and that it was the same as before. On a positive note, only four per cent (4) of responses said that safety standards had got worse with the new regulations.</p> <p>*Protection for human health: of the 118 people who tackled this question, over half (55%, 66) said that protection for human health had improved under COMAH 2015. Again, four in ten (42%, 50) said that there had not really been a change. Only three people (3%) felt that things had got worse under the new regulations.</p> <p>*Protection for the environment: six in ten (60%, 70) of the 117 respondents were positive about the new COMAH regulations and felt that it had improved protections for the environment. Just under four in ten (38%, 44) said that the status quo had been maintained and it was the same as before.</p>

Research instrument	No. of respondents	Evidence
		<p>Finally, only three people (3%) indicated things had got worse under COMAH 2015.</p> <p>Of those people who indicated that things had worsened under COMAH 2015, five people provided further details. The concerns highlighted include:</p> <ul style="list-style-type: none"> <li>- <i>“...We now find ourselves discussing items at such a detailed level that we are losing sight of the bigger picture”</i> (Upper Tier; Oil refining; 250-999).</li> <li>- <i>“Standards are ... only lessons from the large petro chem incidents”</i> (Lower Tier; Chemicals/Manufacture of chemical products; 250-999)</li> <li>- <i>“Predictive requirements part of COMAH Reports are too prescriptive/onerous”</i> (Upper Tier; Chemicals/Manufacture of chemical products; 250-999).</li> </ul>
Competent Authority (CA) survey	n = 9 (full or partial responses to survey)	<p>CA respondents provided their thoughts about the comparison between COMAH 2015 and COMAH 1999 in terms of:</p> <p>*Safety standards: of the 9 respondents, a third (33%, 3) indicated that they thought that COMAH 15 had made things better, whilst the remaining two-thirds (67%, 6) suggested that nothing had changed.</p> <p>*Protection for human health: again, 9 people responded with a third (33%, 3) suggesting that things had got better and the remaining two-thirds (67%, 6) indicating that things are the same as before.</p> <p>*Protection for the environment: only 8 people responded to this question, with nearly nine in ten (88%, 7) indicating that in terms of protection for the environment nothings really changed. The remaining respondent (13%, 1), however, feels that things have got better.</p>

Research instrument	No. of respondents	Evidence
		No-one made any subsequent comments about any aspects which had worsened.

44. The results for this question are encouraging as they strongly suggest that COMAH 15 has either maintained or strengthened protections for safety, human health and the environment. There appears to be little disagreement about this conclusion. Even the ‘disagree’ qualitative comments – which were few and far between – do not really make a strong case for there being a decrease in protections under the new regulations. As such, this objective can be seen to have been met.

**iv. What were the original assumptions?**

45. The original assumptions underlying the costs and benefits of the COMAH 15 regulations are detailed in the impact assessment (IA)<sup>22</sup>. In summary, the main drivers of costs for industry were updating safety reports, redacting safety reports and managing public information. The cost of requiring emergency responders to attend external emergency plan tests at Upper Tier (UT) COMAH establishments would also mainly fall on business. The main savings arose from an expected net decrease in the number of establishments in scope of COMAH. This resulted in direct ongoing savings to business.

46. Based on the survey responses some of the compliance costs have changed. Using actual data we have been able to better estimate the number of establishments moving in and out of scope in this PIR. The original 2014 IA estimated that after implementation of COMAH 15 the number of establishments at each tier would be as follows:

- Upper Tier = 340
- Lower Tier = 592
- Total number of establishments = 932

Based on the evidence collected as part of the PIR, however, it now seems that the ‘actual’ figures are more likely to be:

- Upper Tier = 348

<sup>22</sup> <https://webcommunities.hse.gov.uk/gf2.ti/f/21986/616261.1/PDF/-/pocbt1476d.pdf>

- Lower Tier = 531
- Total number of establishments = 879

47. Despite the decrease in the overall number of tiered COMAH establishments, there are now more Upper Tier (UT) establishments. This increase has an uplifting effect on costs because many of the additional duties from COMAH 15 fell to these UT establishments. However the decrease in compliance cost more than offsets this uplift, driven by improved understanding about how safety reports would be redacted by the competent authority and a reduction in the estimated time for updating safety reports.

48. In conclusion, the equivalent annual net cost to business (EANCB) of COMAH 15, estimated as part of this PIR with the most up to date assumptions and actual data is £3.56m. The EANCB of COMAH15 as estimated in the original IA was £4.57m<sup>23</sup>. The difference between these estimates is a decrease of £1.0m (or 22% ). The total costs to society as estimated by this PIR has an NPV of £32.15m compared to the IA estimate of £40.23m, a decrease in total costs to society of NPV £8.08m (or 20%).

49. Full details of the estimated costs and benefits of COMAH 15 are included in the ‘Economic Analysis - COMAH 2015 PIR’ document (attached).

**v. Were there any unintended consequences?**

50. Respondents to the online survey were asked whether there had been ‘any unintended consequences due to the changes introduced as part of COMAH 2015?’ and provided with a ‘free-text’ box in which to provide their thoughts.

Research instrument	No. of respondents	Theme (no. of responses which mention theme)
COMAH operators, emergency planners & core responders survey	<i>n</i> = 134 (full or partial responses to survey)  Of which 57 provided a response to this question	<ul style="list-style-type: none"> <li>• No / not applicable (25)</li> <li>• Cost of compliance (7)</li> <li>• Excessive burden of regulation (4)</li> <li>• Changes to establishment (3)</li> <li>• Information security concerns (2)</li> <li>• Regs disproportionate to risk (2)</li> <li>• Change of terms (1)</li> <li>• Disproportionate to risk (1)</li> </ul>

<sup>23</sup> The Equivalent Annual Net Cost to Business (EANCB) was estimated to be around £4.57m in 2014 prices. For the purposes of One In, Two Out (OITO) purposes when the IA was written, this was also expressed in 2009 prices as £3.69m.

Research instrument	No. of respondents	Theme (no. of responses which mention theme)
		<ul style="list-style-type: none"> <li>• Inspectors lack industrial knowledge (1)</li> <li>• LA charges (1)</li> <li>• Lack of understanding of regs (1)</li> <li>• Regs inconsistently applied/interpreted (1)</li> </ul>
Competent Authority (CA) survey	<p><math>n = 9</math> (full or partial responses to survey)</p> <p>Of which 8 provided a response to this question</p>	<ul style="list-style-type: none"> <li>• No comment / not applicable (6)</li> <li>• HFO moving to petroleum products takes it out of scope of COMAH (1)</li> <li>• Unclear whether COMAH applies to shale gas activities (1)</li> <li>• Self-classifying under CLP has led to unintended establishments coming into scope (1)</li> </ul>

51. Of those responding to this question a large proportion highlighted the fact that, in their eyes, there had not been any unintended consequences as a result of the changes introduced as part of COMAH 2015. Where more substantive comments were made, a few consistent themes did emerge among the relevant responses.

52. It seems that the cost of compliance with the new regulations was the main issue for a number of COMAH operators, etc. respondents; they expressed a sense of a 'waste' of resources for businesses and for HSE in having to regulate low-risk establishments already subject to other regulatory schemes. Other respondents also articulated their consciousness of Competent Authority and Local Authority 'cost recovery' pressures, while one responder felt that their business was unlikely to seek advice on COMAH from HSE because this may incur additional costs. For example:

*"...I am sure it is a total waste of limited resource for HSE to have to regulate a site like ours that does not have a PIZ, no major MAH or MATTE risk, and is already heavily and well regulated by HSE and EA regulations"* (Upper Tier; Other types of Manufacturing; 250-999)

*"Charging the COMAH site for all work (however minimal) undertaken by the Competent Authority means that we are less likely to ask for advice*

*or send in additional information for review in response to a request, given that we will be charged for this each time” (Upper Tier; Gas Storage; 1,000+*

53. Several responders voiced concerns related to an excessive burden of regulation, with increased administrative work and confusion about different sets of regulations among operators. For instance:

*“... [I]t is [the] excessive burden associated with the need to “demonstrate” everything within the report...” (Upper Tier; Oil refining; 250-999)*

54. Finally, a few respondents said that they had either made changes to their establishments in preparation for the regulatory change (*“... design of storage within the building”* [Lower Tier; Chemicals/Manufacture of chemical products; 250-999]) or that the new regulations’ method of measuring the establishment from the centre needed to be changed. In terms of this last point the following example was given:

*“The PIZ is determined by HSE identifying the centre of the site and measuring it from that. That is ridiculous. Many sites have hazards near perimeters so the PIZ is innacurate [sic]. The HSE states they will not change the same which is at best ridiculous and at worst reckless and dangerous” (Public services; 10-49)*

55. While there were a variety of different issues defined as being ‘unintended consequences’ in many cases they tend to be more operational in nature and relate to how the regulation is being implemented, rather than a function of the regulation itself. As such, based on the number of responses either saying ‘no’ or ‘not applicable’, and the ‘practical’ nature of many of the comments, it seems that there has not been any significant unintended regulatory consequence as a function of the new COMAH regulations being implemented.

**vi. Has the evidence identified any opportunities for reducing the burden on business?**

56. The comments provided in responses to the question about whether the COMAH regulatory regime can achieve its goals with less regulation are not consistent enough to offer viable means of reducing the burden on business. The PIR will be reviewed in five years’ time to consider if the objectives remain appropriate. At the next five-year review, however, there will be an opportunity to reconsider the requirements of COMAH in the context of the current UK sector and regulatory landscape.

**vii. For EU measures, how does the UK’s implementation compare with that in other EU member states in terms of costs to business?**



57. Regulation 34 of COMAH 15 includes a requirement to have regard, as far as is reasonable, to how the Directive has been implemented in other member states. Ongoing engagement with EU officials at meetings, conferences, and as a member of the Seveso Expert Group etc. has not highlighted any significant areas of concern in terms of the implementation of the COMAH regulations in the EU compared to the UK, including areas such as costs to business.

## Appendix 3

# Economic Analysis - COMAH 2015 PIR

### Introduction

1. This economic assessment has been undertaken by the Health and Safety Executive (HSE) to accompany and support the Post Implementation Review (PIR) of The Control of Major Accident Hazards Regulations 2015 (SI2015/0483) ('COMAH 15').
2. COMAH 15 implements the European Seveso III Directive<sup>24</sup> in Great Britain (GB). The European Commission replaced the Seveso II Directive (96/82/EC) with a new Seveso III Directive (2012/18/EU) which entered into force on 13 August 2012. The Seveso III Directive was required because the hazard-based classification system, the Chemicals (Hazardous Information and Packaging for Supply) (CHIP) Regulations 2009, was being replaced by the Classification, Labelling and Packaging Regulation (CLP). The scope of Seveso II and therefore the GB implementing Regulations, The Control of Major Accident Hazards Regulations 1999 (COMAH 99) was determined by CHIP. Thus, the move to CLP meant that Seveso II and COMAH 99 would no longer function unless there was a link to CLP, hence the development of Seveso III and the GB implementing regulations COMAH 15. There are two tiers of regulatory control in Seveso and COMAH: upper tier (UT) and lower tier (LT) depending on the quantities of dangerous substances present. Due to the alignment with CLP and the change in substances and quantities in scope of COMAH 15, this in turn means there was expected to be a change in the number of establishments in scope of COMAH 15 at both LT and UT. The Commission also took the opportunity to modernise the Seveso Directive in line with other environmental legislation and these measures were also implemented in GB through COMAH 15.
3. This report re-estimates the costs and benefits of implementing COMAH 15 using the evidence we collected as part of this PIR. HSE produced an IA that accompanied the COMAH 15 Regulations when they were brought into force<sup>25</sup>, hereafter referred to as the 2014 IA. We hold everything constant in that 2014 IA, but update the assumptions where our evidence has improved and so re-state the estimated costs of implementing COMAH 15 in 2014 prices. We also compare these estimates to the costs and benefits estimated by HSE in the 2014 IA.
4. The costs and benefits in the 2014 IA were estimated using a variety of methods, including a survey of all major hazard establishments, detailed discussions with industry and scientific review of substances held by establishments. All the estimates in the 2014 IA were projections about what might be experienced in the future and

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<sup>24</sup> Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC

<sup>25</sup> COMAH 15 Regulation: "Impact assessment opinion: Impact assessment for the transposition of the Seveso III Directive into UK Law through the COMAH Regulations 2015"

[http://www.legislation.gov.uk/ukia/2015/128/pdfs/ukia\\_20150128\\_en.pdf](http://www.legislation.gov.uk/ukia/2015/128/pdfs/ukia_20150128_en.pdf)

based on different expected scenarios. The estimated costs and benefits collected via this PIR have been based on dutyholders' actual experience of complying with COMAH 15 and actual data collected since 2015.

### **2014 IA**

5. The 2014 IA for COMAH 15 estimated that the Net Present Value (NPV) of the costs to society of the Regulations was between around £18.2 million and £62.3 million with a best estimate of around £40.3 million.
6. The total estimated NPV of the costs to business were estimated to be between £17.4 million and £61.2 million with a best estimate of around £39.3 million.
7. The Equivalent Annual Net Cost to Business (EANCB) was estimated to be around £4.6m in 2014 prices. For the purposes of One In, Two Out (OITO) purposes when the IA was written, this was also expressed in 2009 prices as £3.7m.
8. The 2014 IA analysed the gold-plating of COMAH 15. It was estimated that the total EANCB in scope of OITO was £0.1m in 2009 prices. This arose from the new requirement for Category 1<sup>26</sup> responders (CAT 1s) to attend external emergency plan tests at UT establishments. This is one of the cost categories that has been analysed and updated in this PIR.

### **Testing the assumptions and re-estimating costs**

9. The aim of this economic assessment is to provide information about costs and benefits of COMAH 15 for the PIR, including a re-estimation of the costs and benefits of COMAH 15, using a proportionate analysis of some of the larger costs identified in the 2014 IA; and to compare this re-estimation of costs and benefits to those estimated in the 2014 IA.

### **Method**

10. Revised estimates of the costs and benefits of COMAH 15 have been made using a combination of actual data on the number of establishments; and updating cost assumptions using survey data provided by 134 establishments. One survey was sent to each of the COMAH operators, emergency planners and core responders; and another to the Competent Authority (CA)<sup>27</sup>. For more information about the surveys please see the 'Evidence Review' section of this PIR.
11. The re-estimated costs are calculated by applying the new evidence about baseline number of establishments, scope changes and compliance cost assumptions to the original 2014 IA cost model. The final PIR re-estimate can then be used to compare

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<sup>26</sup> Category 1 responders are those organisations at the core of the response to most emergencies (the emergency services, local authorities, NHS bodies)

<sup>27</sup> Under COMAH the CA has statutory responsibility to provide regulatory oversight of high-hazard industries using or storing quantities of dangerous substances that fall into the scope of the Regulations, see <https://www.hse.gov.uk/comah/guidance/understanding-comah-operators.pdf>

the reasonableness of the 2014 IA and to provide a more up-to-date estimate of the cost of COMAH 15.

12. The analysis focuses on the larger cost impacts identified in the 2014 IA or those where the original evidence in the 2014 IA was limited. As this review has been classified by HSE as low-medium, it was not thought to be proportionate to re-estimate all of the costs identified in the 2014 IA because this would put a disproportionate burden on businesses and the marginal change in the estimates from using a more up to date survey would not be expected to change decision-making around COMAH 15.
13. The 2014 IA analysed costs according to 5 key themes:
  - a) The change in scope as a result of the changes in the classification system and knock-on effects to existing establishments;
  - b) Notifications and safety reports;
  - c) An increase in requirements to provide access to information for the public;
  - d) Changes to the emergency planning system;
  - e) Other changes including the streamlining of information provision to the CA.
14. Each of the changes in (a) to (d)) have been covered by this PIR, but not those in (e)), which are less significant costs and on the grounds of proportionality have not been analysed again.
15. The PIR survey (see Evidence Review section of this PIR) asked seven questions covering the main cost categories: scope, safety reports, re-notifications, public information and testing external emergency plans. The survey concentrated on the compliance duties that had the most significant costs or where the 2014 IA evidence was more uncertain. The survey only asked questions about costs that were directly borne by business (as opposed to Government) and specifically not those charges to industry for inspection work by the CA. This approach was adopted on the grounds of proportionality, based on this review being classified as low-medium.<sup>28</sup> So, while not all cost categories have been re-analysed in this PIR, the bigger costs have been re-estimated using updated assumptions. This analysis aims to provide assurance about whether the 2014 IA was reasonably stated and to provide an approximate update to those estimates where better evidence is readily available.
16. Table 1 below shows a break-down of the costs and cost-savings as estimated in the 2014 IA and notes which ones have been updated as part of this PIR.

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<sup>28</sup> Based on the Government's PIR guidance

Table 1: Summary of best estimate costs and cost-savings from 2014 IA

2014 IA Cost and Saving category	Best estimate of NPV cost (£m)	Best estimate of EANCB (£m)	Re-estimated as part of this PIR?
<b>COSTS TO BUSINESS</b>			
<b>Direct costs to Business</b>			
Changes in scope	2.23	0.26	<b>Yes</b>
Updating safety reports	20.9	2.43	<b>Yes</b>
Reviewing inventories	0.07	0.008	<b>No</b>
Re-notifications	0.15	0.02	<b>Yes</b>
Notifying neighbours	2.31	0.27	<b>Yes</b>
Public information template	2.49	0.29	<b>No</b>
Public information review	0.45	0.05	<b>Yes</b>
Redacting safety reports	11.39	1.32	<b>No</b>
Testing external emergency plans	1.05	0.12	<b>Yes</b>
Familiarisation	0.31	0.04	<b>No</b>
<b>Total direct costs to Business</b>	<b>41.4</b>	<b>4.80</b>	
<b>CA costs recovered from Business</b>			
Review of new safety reports	0.26	0.03	<b>No</b>
Notifications from new sites	0.0004	0.000	<b>No</b>
Renotifications	0.04	0.004	<b>No</b>
Review of updated safety reports	1.56	0.18	<b>No</b>
<b>Total CA costs recovered from Business</b>	<b>1.86</b>	<b>0.22</b>	
<b>TOTAL COSTS TO BUSINESS</b>	<b>43.21</b>	<b>5.02</b>	
<b>COSTS TO GOVERNMENT</b>			
IT system	0.4	0.05	<b>No</b>

<b>2014 IA Cost and Saving category</b>	<b>Best estimate of NPV cost (£m)</b>	<b>Best estimate of EANCB (£m)</b>	<b>Re-estimated as part of this PIR?</b>
Testing external emergency plans	0.53	0.06	<b>No</b>
<b>TOTAL COSTS TO GOVERNMENT</b>	<b>0.93</b>	<b>0.11</b>	
<b>COST-SAVINGS TO BUSINESS</b>			
Scope	-3.65	-0.42	<b>Yes</b>
Five-year review of safety reports	-0.26	-0.03	<b>No</b>
<b>TOTAL COST-SAVINGS TO BUSINESS</b>	<b>-3.91</b>	<b>-0.45</b>	
<b>TOTAL NET COSTS</b>	<b>40.23</b>	<b>4.67</b>	
<b>Net Cost to Business</b>	<b>39.3</b>	<b>4.57</b>	

### Risks and Assumptions

17. The baseline used is the COMAH 99 regulations, the regulatory regime for major accident hazards that was in place before COMAH 15 was implemented.
18. All costs and benefits are appraised over a period of 10 years in the 2014 IA. The appraisal period has been kept consistent between this PIR and the 2014 IA to enable a fair comparison and to re-estimate the costs and benefits as they should have been stated in 2014.
19. The IA included costs and benefits that extended into the future. Consequently, it was important that any monetised impacts were expressed in present values, to enable comparison over time. The discount rate used to generate these present values is defined in the Green Book<sup>29</sup> as 3.5% for any appraisal period of less than 30 years. This has been kept consistent with the analysis in this PIR.
20. Costs in both the 2014 IA and the PIR are in terms of opportunity and financial costs. Where market values are not available, costs are expressed in terms of the best proxy value, where relevant. For instance, for any compliance activities that take up the time of a worker or dutyholder, there is a cost of that time. The best proxy for the value of this time is what they could have produced during that time if they were not required to perform these compliance tasks. It is assumed that the worker's productivity is best reflected by the true cost of employing that person (they create as much value as they are paid). In reality this could be conservative for some occupations and staff, but is the best estimate available and is recommended by Government in the HM Treasury

<sup>29</sup> Available at: <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government>

Green Book (see footnote 29). The true economic cost of employing the person is assumed to be their gross hourly wage rate inflated by 30% to reflect the non-wage costs of employment (such as employer tax and NI contributions, employer contributions to pension and overheads).

21. Based on research for the 2014 IA it was ascertained that in large businesses, most of the compliance work would be undertaken by a science professional. Using ASHE 2013(p)<sup>30</sup>, the gross hourly wage rate of a Science, Technology and Engineering professional is £20.93 an hour.<sup>31</sup> The true economic cost of the employee's time is £27.21<sup>32</sup> an hour and this is used in the 2014 IA for large businesses unless stated otherwise. For small and medium sized businesses, the 2014 IA assumed that the compliance tasks would mostly be undertaken by senior management or Board-level Directors. Using ASHE, the gross hourly wage rate for Corporate Managers and Directors in 2013 was £26.71<sup>33</sup>. The true economic cost of this time was therefore stated as £34.72 an hour and this was used in the 2014 IA for the cost of small and medium sized companies' time, unless otherwise stated. These wages and full economic cost of time estimates are kept constant in the PIR calculations, in order to achieve the objective of re-estimating the 2014 IA using the updated assumptions but expressing the estimate in 2014 prices to facilitate comparison.
22. It was necessary to estimate what proportion of affected businesses are small, medium and large. The 2014 IA estimated that 13% of all establishments were part of companies that were small (1-49 employees); 9% were medium (50-249 employees); and 78% were large (250+ employees). These proportions were used throughout the 2014 IA for both tiers of COMAH establishment when estimating the cost of time and which wage rates to use, unless otherwise stated. These percentage shares of small, medium and large companies were assumed to be the same in both UT and LT, and for those establishments changing tier. This gave an average cost of time per hour of £28.89. The 2014 IA assumed 7.5 hours in a working day. This PIR has kept these assumptions consistent with the 2014 IA, so that the PIR re-states the cost of COMAH 15 in 2014 prices but using the updated assumptions for some of the cost categories.
23. The estimated baseline number of COMAH establishments in the 2014 IA was 947, with 596 of these at LT and 351 at UT. Improved understanding and interpretation of the HSE data for this PIR means that this baseline has been revised to 880 COMAH establishments, with 539 at LT and 341 at UT. This update to the baseline and how this impacts the re-estimated figures is described in paragraphs **Error! Reference source not found.** to **Error! Reference source not found.**
24. The following sections explain how we have collected more information about the main costs of COMAH 15 and provide a re-estimate of these costs and compare the re-estimations to the 2014 IA.

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<sup>30</sup> Annual Survey of Hours and Earnings 2013 (revised), available at:

<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/bulletins/annualsurveyofhoursandearnings/2013-12-12/relateddata>

<sup>31</sup> Based on ASHE 2013(p), Table 14.5a, SOC Code 21: Science, research, engineering and technology professionals

<sup>32</sup> The gross hourly wage rate is inflated by 30% to reflect the true cost of employing that person (employer tax, pension, NICS etc).

<sup>33</sup> Based on ASHE 2013(p), table 14.5a, SOC Code 11: Corporate managers and directors

## Re-estimation of Costs and Benefits

### Scope and baseline

25. The alignment of scope in COMAH 15 to CLP rather than to CHIP meant there were some differences in terms of what substances and quantities would be in scope of COMAH 15 compared to COMAH 99. There are two tiers of regulatory control in Seveso and COMAH: upper tier (UT) and lower tier (LT) depending on the quantities of dangerous substances present. Due to the alignment with CLP and the change in substances and quantities in scope of COMAH 15, this in turn means there was expected to be a change in the number of establishments in scope of COMAH 15 at both LT and UT. Estimating the actual movement of establishments in/out of scope and between tiers for COMAH 15 was a challenging exercise for both the 2014 IA and this PIR. The following section explains how this was done for the 2014 IA (see paragraphs 26 to 27) to provide some context and paragraphs 28 to 30 explain how this has been updated for this PIR analysis.

### 2014 IA Method for estimating movements in / out of scope and between tiers

26. For the 2014 IA, HSE scientists commissioned ORC International, a research agency, to carry out a survey of all UK COMAH establishments to gather information about what substances establishments were holding and to gather information about the costs of compliance. Annex 2 of the 2014 IA contains all of the information about this research into scope impacts.
27. Based on this research, HSE experts provided a range for the effect on scope, estimate A and estimate B, of between 13 and 18 establishments moving out of scope of COMAH 15 (see Table 2).

### PIR Method for estimating movements in / out of scope and between tiers

28. Actual movements in and out of scope and between tiers in the PIR were counted using actual notifications available on HSE internal databases. Available data was counted from June 15 up to June 2017 i.e. two years after the coming into force of COMAH 15. The two-year period is precautionary, given that establishments were allowed 12 months within which to notify, so HSE considers that twice this amount of time is sufficient to capture the vast majority of the movements due to COMAH 15.
29. Within the two-year period, all changes in scope that could be directly attributed to COMAH 15 were counted; and changes in scope for unknown reasons were also included to produce a cautious estimate.
30. This PIR has updated the estimate of movements in/out and between tiers to a net position of one establishment moving out of scope. The PIR therefore differs from the 2014 IA by between 13 and 18 establishments moving out of scope and these



assumptions are summarised in Table 2 below.

*Table 2 – Summary of assumptions about scope changes*

<b>Movement</b>	<b>2014 IA estimate A</b>	<b>2014 IA estimate B</b>	<b>PIR revised estimate</b>
Upper Tier to Lower Tier (A)	12	21	4
Lower Tier to out of scope (B)	24	30	13
Not in scope to Lower Tier (D)	5	14	9
Lower Tier to Upper Tier (E)	1	8	8
Not in scope to Upper Tier (F)	<1	3	4
Upper Tier to out of scope (G)	-	-	1
Net movement UT = F+E-A-G	-11	-11	7
Net movement LT = D+A-B-E	-7	-2	-8
Net movement into scope	-18	-13	-1

31. This means that after the changes in scope, the 2014 IA estimated the number of COMAH establishments would be:
- a) In total, between 929 and 934 establishments, with a best estimate of 932, of which:
    - i. 340 would be UT;
    - ii. and between 589 and 594, with a best estimate of 592, would be LT.
32. The revised estimate in this PIR is:
- a) In total, 879 establishments, of which:
    - i. 348 were UT;
    - ii. and 531 we LT.

Costs and cost savings arising from the change in scope

33. The total cost impacts of establishments moving between tiers or out of scope completely depend on the estimated annual baseline costs - the annual cost of compliance with the COMAH 99 Regulations at the time COMAH 15 came into force. There were also one-off costs of moving into scope or changing tier for the first time. For those establishments moving out of scope or from UT to LT, they would experience some savings from a reduction or removal of regulatory duties. They may incur a small one-off cost in terms of updating procedures, but this is expected to be part of the process of familiarisation that was counted elsewhere in the 2014 IA.
34. The 2014 IA estimated the annual baseline COMAH 99 compliance costs by means of a survey of all COMAH establishments (see paragraph 56 of the 2014 IA). The findings were corroborated qualitatively using focus groups and in-depth interviews.

The establishments provided estimates in terms of the time taken to comply and these were converted to costs using the full economic cost of time for a manager in those industries (see paragraph 21). From the time estimates and wage rate data, the 2014 IA estimated that the annual costs for an UT establishment were between £24,000 and £29,000 with a best estimate of £27,000. For LT establishments, the annual costs were estimated to be between £9,000 and £11,000 with a best estimate of £10,000.

35. The 2014 IA also estimated that there would be one-off costs of compliance for moving into scope or when an establishment moves from LT to UT. Using discussions with trade associations and a survey of chemical businesses, it was estimated that for an establishment moving into scope at LT for the first time, the one-off costs would be between £15,000 and £23,000 with a best estimate of £20,000. This one-off cost was predominated by the need for a LT establishment to produce a major accident prevention policy (MAPP) and HSE charges for regulatory activity. The one-off costs for an establishment moving to UT for the first time were estimated to range from £100,000 to £135,000 with a best estimate of £120,000. This cost was predominated by the need to produce a safety report.
36. For establishments moving into scope for the first time, they would incur the annual costs and one-off specific to their tier. For establishments leaving scope completely it is assumed that they would no longer incur any compliance costs. For establishments moving from LT to UT, the additional costs to the establishment would be the difference in the annual compliance costs between LT and UT, plus the difference in one-off costs between LT and UT, based on the LT one-off cost (producing a Major Accident Prevention Policy report) contributing towards the UT one-off costs.
37. The additional and saved costs as a result of establishments moving scope are summarised in Table 3 below.

*Table 3 – Summary of costs and savings estimated for a change in scope of COMAH 15 (best estimates)*

<b>Scope Movement</b>	<b>Estimated annual cost/ saving (£'000)</b>	<b>Estimated additional one-off cost of compliance (£'000)</b>
UT to LT	-17	0
LT to UT	17	98
UT to out of scope	-27	0
LT to out of scope	-10	0
Out of scope to UT	27	120
Out of scope to LT	10	20

38. This PIR has not updated the baseline compliance cost estimates for establishments, as originally estimated in the 2014 IA. This is because these estimates were made using a thorough process and significant resource was spent on the estimates at the time. No significant comments about these estimates were received when the 2014 IA was consulted on. In order to update these estimates a large scale survey would need to be repeated which would put a lot of burden on COMAH establishments and would require significant government officials' time. This would not be proportionate to this

low – medium level PIR. Instead, the scope costs and savings have been improved in this PIR by combining the improved actual movements in establishments when COMAH 15 came into force (see Table 2) with the original 2014 IA estimates of the baseline cost of compliance (see Table 3).below summarises the re-estimated NPV of the additional costs and savings of establishments moving into and out of scope and between tiers using the PIR data.

*Table 4: PIR re-estimation of costs of change in / out of scope and between tiers*

Scope movement	Estimated number of establishments	One-off costs per establishment (£)	One-off annual costs per establishment (£)	Estimated NPV of cost of movement (£m)	Estimated EANCB of movement (£m)
UT to LT	4	0	-£17,000	-£0.44	-0.05
LT to out of scope	13	0	-£10,000	-£0.85	-0.1
Not in scope to LT	9	20,000	£10,000	£0.75	0.09
LT to UT	8	98,000	£17,000	£1.65	0.19
Not in scope to UT	4	120,000	£27,000	£1.16	0.13
UT to out of scope	1	£0	-£27,000	-£0.18	- 0.02
Net movement UT	7		<b>Total estimated net cost of scope change</b>	<b>£2.09</b>	<b>0.24</b>
Net movement LT	-8			-	
Net movement into scope	-1				

\*It is important to note that the NPV is calculated over a 10 year appraisal period in the 2014 IA, from time 0 to time 9, with all costs starting in time 1 (2015) compared to when the IA was written in time 0 (2014).

\*\* in this table which refers to 'costs' any negatives represent cost savings.

39. The following table compares the re-estimated NPV of the scope changes in this PIR to the estimates of the scope changes in the 2014 IA.

*Table 5 – summary of cost difference between 2014 IA and the updated PIR estimates: scope changes*

	NPV Cost to Society (£m)	NPV Cost to Business (£m)	EANCB (£m)
2014 IA	-1.42*	-1.42*	-0.16*
2014 IA re-estimated for PIR	2.09	2.09	0.24
Difference	3.51	3.51	0.41

\*these estimates are negative because they are cost savings rather than costs.

40.

41. Table 5 shows that the 2014 IA estimated that aligning the scope of COMAH 15 to CLP, holding all else equal, had an estimated cost saving of NPV £1.42m and an EANCB of -£0.16m. This PIR has used the actual data collected on establishment moves following implementation of COMAH 15 and when this data is input to the 2014 cost model, the NPV to society and business is estimated as £2.09m and the EANCB is £0.24m. The difference between the 2014 IA and the updated re-estimated PIR is £3.5m NPV of total and business costs and £0.41m in terms of the EANCB. Importantly, the updating of the scope estimates from the predicted 2014 IA to the actual PIR turns a net saving into a net cost.

### **Additional compliance costs introduced by COMAH 15**

42. As explained in paragraph 2 and 12 to 13, COMAH 15 was modernised compared to the COMAH 99 baseline in a number of ways which created additional duties on establishments. Some of these were directly associated with the Seveso III Directive and other areas were GB gold plating. The 2014 IA estimated one area of gold plating in relation to the testing of emergency plans at UT establishments, estimated as £0.1m EANCB for One In Two Out and this has been covered in the analysis that follows.
43. Additional compliance costs were re-estimated for this PIR in four main areas, being safety reports; notifications; public information; and testing emergency plans. These match the main themes that the 2014 IA categorised, (see paragraph 13) with just one theme not re-visited in this PIR - streamlining information provision to the CA. The costs and savings in this area are much smaller than in the other additional compliance cost areas and so on the grounds of proportionality the PIR has not revisited these impacts
44. As detailed in the 'Evidence Review' section, COMAH operators, emergency planners and core responders were provided with an online survey which asked 7 questions about these main themes. The survey received 134 responses although not all respondents answered all of the questions. Table 6 below includes responses to the survey questions that affected the cost benefit analysis.

Table 6– Compliance cost from COMAH Operators survey

Question	Units	IA Best Estimate	PIR estimate	Difference between 2014 IA and PIR
Updating safety reports	Months	9	7.6	-1.4
Re-notifications	Days	1.3	5.7	4.5
Information about neighbouring establishments	Hours	11	6.9	-4.4
Keeping public information up to date	Hours per annum	6	16	10
CAT 1 responders at all emergency plan tests: live test	£	16,000	18,000	2,000
CAT 1 responders at all emergency plan tests: table top test	£	8,400	6,500	-1,900
Estimated % of live tests that CAT 1 responders attended under COMAH 99	%	85	76	-8.2

**\*Calculation in this table have been completed using unrounded figures and may not sum.**

45. The 2014 IA cost model has been updated with these new assumptions collected via this PIR. These survey responses have been provided after the implementation of COMAH 15 and are based on actual experience of the Regulations, so it is assumed that they are more reasonably stated than the assumptions we used in the 2014 IA which were based on predictions about the future. Each of these revised assumptions is built into the 2014 IA and the effects are described in the following paragraphs 49 to 57.

### **Baseline number of establishments**

46. Before analysing the update to the additional compliance costs, it is important to explain that the PIR has also obtained improved data about the number of COMAH establishments that existed immediately prior to implementation of COMAH 15. We refer to these establishments as the baseline establishments.
47. In the 2014 IA, HSE experts estimated that this baseline was 947 establishments, of which 351 were TT and 596 were LT. For the PIR we have updated our evidence with the assistance of HSE experts to establish a known baseline number of establishments at 31st May 2015 of 880. This is 67 fewer than in the 2014 IA. Of the

880 establishments, 341 were UTs and 539 were LTs.

48. The additional compliance costs depend on the number of establishments in scope of COMAH as well as the assumptions about the cost of those duties such as time taken, the economic cost of that time and the cost of goods and services. The number of establishments used for every re-estimation is the PIR baseline of 880. When re-estimating the additional compliance costs the revised costs are presented per establishment as well as in total.

### **Updating Safety reports**

49. Due to the changes in scope it was estimated that nearly all UT establishments had to update their safety reports, but the extent of the changes depended on what substances the establishment stored and therefore how significant the changes were for that establishment.
50. The 2014 IA (see section 9.3 of the 2014 IA) assumed that a full safety report update would take between 1,365 and 2,730 working hours per establishment, with a best estimate of 2050 working hours. It was also assumed that consultants would do half of the updates and the remaining half would be done in-house by the establishments. The average full economic cost of time for a member of staff in a large business is around £27 per hour and for a small business around £35 per hour in the 2014 IA and in this PIR (see paragraph 22). The full economic cost of time for a consultant is estimated to be about £150 an hour (with a range between £135 and £165) and so just over £1,000 a day. Finally, it was assumed that between 20% and 40% of establishments would need to undertake a full update, the remainder would make small amendments which were classified as business as usual updates.
51. The cost per safety report in the 2014 IA was estimated as follows, using a large business that needs to update their safety report and the mid-point as illustrator:
- a) Cost per establishment = cost of time x number of hours.
  - b) Cost of time =  $(0.5 * £150) + (0.5 * £27) = £88.50$ .
  - c) Number of hours (midpoint) = 2,050
  - d) Total cost =  $£88.50 * 2,050 = £0.18m$  per large business.
52. For small businesses that needed to update their safety report: using the same approach as above but with the internal cost of time of £35 per hour the estimated cost for each small business is £0.19m.
53. In the 2014 IA, the estimated number of UT establishments was between 330 and 339. Factoring in the assumptions of between 20% and 40% of establishments updating their safety reports and that 78% of COMAH businesses are assumed to be large and 22% small and medium sized, (see paragraph 22) the estimated present value cost of updating safety reports in 2015 (year 1 of the appraisal period) was estimated in the 2014 IA as between £7.1million and £34.7million, with a best estimate of around £20.9million. The EANCB is estimated as between £0.82m and £4.03m with a best estimate of £2.4m.
54. The PIR survey results suggest that the length of time to update the safety reports

would be more like 1,729 hours. This has been used to calculate a cost per establishment for this PIR as follows, using a large business and the mid-point as illustrator:

- i. Cost per establishment = cost of time x number of hours.
- i. Cost of time =  $(0.5 \times £150) + (0.5 \times £27) = £88.50$ .
- ii. Number of hours (midpoint) = 1,729
- iii. Total cost =  $£88.50 \times 1,729 = £0.15\text{m}$  per large business.

55. For small businesses: using the same approach as above but with the internal cost of time of £35 per hour the estimated cost for each small business is £0.16m.

56. In the PIR, the baseline number of establishments is 880 of which 341 are UT (see paragraph 47). The PIR has also predicted that there will be 5 establishments that move out of UT (4 moving to LT and 1 to out of scope) following the alignment of scope (see Table 2) giving an estimate of 336 UT establishments that were at UT before COMAH 15 and so which need to update their safety reports.<sup>34</sup> Factoring in the assumptions of between 20% and 40% of establishments updating their safety reports and that 78% of COMAH businesses are assumed to be large and 22% small and medium sized, (see paragraph 22) the estimated present value cost of updating safety reports in 2015 (year 1 of the appraisal period) re-estimated for this PIR is between £9.20million and £21.77million, with a best estimate of around £15.48million. The EANCB is estimated as between £1.1m and £2.52m with a best estimate of £1.80m.

57. Table 7 summarises the comparison between the 2014 IA and the PIR for the compliance cost of updating safety reports:

*Table 7- summary of cost difference between 2014 IA and the updated PIR estimates: updating safety reports*

	Cost per establishment of updating safety reports				
	Large business	Small and medium business	Best estimate of NPV society (£m)	Best estimate NPV business (£m)	EANCB (£m)
2014 IA	0.18	0.19	20.9	20.9	2.43
PIR update	0.15	0.16	15.48	15.48	1.80
Difference in PIR compared to 2014 IA	-0.03	-0.03	-5.42	-5.42	-0.63

<sup>34</sup> N.B. any establishments that move into UT for the first time will have to produce a safety report for the first time, rather than update a safety report, the costs of which are captured in the costs of alignment of scope, see paragraphs 33 to 40.



## Re-notifications

58. Operators are required to notify the CA if their establishment comes under the COMAH regime. The 2014 IA identified that on implementation of COMAH 15 there were three groups of establishments to consider in terms of impact:
- **Existing establishments** – the 2014 IA anticipated that all establishments within scope of COMAH 99 (existing establishments) would have to re-notify the CA under COMAH 15 because of the change from CHIP to CLP classification, with one year to notify.
  - **New establishments** coming into scope purely because of the changes to Annex 1 - the 2014 IA assumed that whilst the cost of notification would be a relevant additional cost, it is already captured in the costs of scope alignment, (see paragraphs 33 to 40).
  - **New establishments** coming into scope as a result of a business decision (e.g. they begin to use a new hazardous substance) – these establishments will have incurred costs of notification but not as a result of COMAH 15 and so the 2014 IA did not include these notifications as additional costs of COMAH 15.
59. Therefore, the only relevant notifications are the re-notifications by existing COMAH establishments.
60. The 2014 IA assumed that for most establishments, this time to re-notify would be between 0.5 and 1 day. However, for any establishments changing between tiers, the re-notification would take longer. The 2014 IA assumed that for those establishments increasing tier from LT to TT, this additional time for re-notification would be captured in the one-off costs of changing scope; however, for those establishments decreasing tier (UT to LT) then the cost of re-notification wasn't captured in the scope costs of the 2014 IA. So, for those establishments decreasing tier from UT to LT, it was estimated that the time to renotify could take between 1 and 2 days.
61. Using the baseline number of establishments in the 2014 IA, this translates to between 12 and 21 establishments taking between 1 and 2 days to re-notify and between 926 and 935 establishments taking between 0.5 days and 1 day to re-notify.
62. Applying these assumptions to the average full economic cost of £28.89 per hour (see paragraph 22), the 2014 IA estimated the cost per existing establishment was between £110 and £220 with a best estimate of £160. The 2014 IA estimated that the cost for those establishments changing tier from UT to LT would be between £220 and £430 per establishment with a best estimate of £330. The 2014 IA estimated that the costs would be incurred in year 1 of the appraisal period, i.e. in 2015, and so the net present value of the total costs would be between £0.10m and £0.20m, with a best estimate of around £0.15m.
63. The PIR survey updated the time that would be required for renotification to 5.7 days for all establishments. This equates to 42 hours per establishment. Using the full economic cost of time per hour of £28.89 (see paragraph 22) then this equates to £1,200 per establishment.
64. Applying this cost per establishment to the total estimated number of establishments

at the time COMAH 15 was implemented, of 880, and a movement from UT to LT of 4 (see Table 2) gives a best estimate of the total net present value of the renotifications of £1.04m.

65. Table 8 below summarises the cost per establishment in the 2014 IA compared to the cost per establishment in this PIR for renotifications and how this impacts the total estimated NPV and EANCB

*Table 8 - summary of cost difference between 2014 IA and the updated PIR estimates: renotifications*

	Cost per establishment of renotifications (£)		Best estimate of NPV (Society) (£m)	Best estimate of NPV (Business) (£m)	Best estimate of EANCB (£m)
	Existing	Tier change			
2014 IA	160	330	0.15	0.15	0.02
PIR	1,220		1.0	1.0	0.12
Difference in PIR compared to 2014 IA	1,060	900	0.9	0.9	0.1

### **Collecting information about neighbouring establishments**

66. COMAH 15 also contained a new requirement that notifications should include, where available, details of neighbouring establishments which would include establishments that fall outside the scope of the Directive and could increase the risk or consequences of a major accident. HSE research for the 2014 IA showed that, while the burden of gathering this information and adding it to the notification would not be great, establishments would need to keep their information up to date on an ongoing basis to take account of any changes to their neighbours or to their processes.
67. In the 2014 IA, HSE estimated that each COMAH establishment would spend between 1 and 2 days per annum gathering and updating information about their neighbouring establishments, with a best estimate of one and a half days. Costed at the average cost of time of £28.89 an hour, this equates to between £220 and £430 per annum for each establishment with a best estimate of £330. Across the 929 to 934 baseline COMAH establishments, this gives between around 7,000 and 14,000 hours per annum, with a best estimate of around 10,500.
68. Costed at the average cost of time of £28.89, the 2014 IA estimated an average annual cost of between around £0.2m and £0.4m, with a best estimate of around £0.3m.
69. Borne from Year 1 to Year 9 of the appraisal period, this gives a present value cost to business of between around £1.5 million and £3.1 million, with a best estimate of around £2.3 million.
70. The 2014 IA also assumed that there was no additional cost of the neighbouring non-

COMAH establishments participating in or assisting the COMAH establishments in gathering this information as the new Regulations would not place a duty on them to do so. If they chose to engage with the COMAH establishment, this would be their own business decision and this analysis assumes that they would only do so if they assessed that the benefits at least equalled the costs.

71. In the PIR survey, establishments that responded have told us that the average time per annum spent gathering and updating information about their neighbouring establishments is around 6.9 hours per annum. Using the average economic cost of time of £28.89 per hour, described above, this equates to an annual cost per establishment of £200 per annum.
72. As this is an on-going annual cost, we need to apply it to the estimated on-going number of COMAH establishments following introduction of COMAH 15, which is the baseline number of establishments (880) plus the net movement in establishment (-1), in other words 879 establishments.
73. The re-estimated number of hours to include information about neighbouring establishments is 6,070 for all establishments. Applying the average economic cost of time of £28.89 this equates to an annual cost of £0.18m.
74. Borne from Year 1 to Year 9 of the appraisal period, this gives a present value cost to society and to business of around £1.3 million.
75. Table 9 below summarises the cost per establishment in the 2014 IA compared to the cost per establishment in this PIR for renotifications and how this impacts the total estimated NPV and EANCB.

*Table 9 - summary of difference between 2014 IA and the updated PIR estimates: neighbouring establishments*

	Best estimate of cost per establishment of information about neighbours (£)	Best estimate of NPV (Society) (£m)	Best estimate of NPV (Business) (£m)	Best estimate of EANCB (£m)
2014 IA	330	2.31	2.31	0.27
PIR	200	1.33	1.33	0.15
Difference in PIR compared to 2014 IA	-130	-0.97	-0.97	-0.11

### **Keeping public information up to date**

76. Public information requirements were another key area of change to be carried into COMAH 15. COMAH 99 required UT establishments to regularly send every person likely to be affected in the event of a major accident (in the Public Information Zone - PIZ) clear information on safety measures and what to do in the event of a major accident at the establishment. COMAH 15 also required that the safety report and

inventory of dangerous substances be made available to the public upon request and that certain information regarding all major hazard establishments and their hazards would be made permanently and electronically available to the public and for the information to be kept up to date. It was intended that the CA would host a database which operators would use to upload the relevant information which would then be accessible to the public.

77. The 2014 IA estimated that the one-off costs to UT establishments of completing the information required of them would be between £0.7m and £4.3m with a best estimate of £2.5m. These one-off costs have not been tested as part of this PIR because on the grounds of proportionality, just one of the costs associated with public information has been tested. The annual recurring cost has been chosen instead of the one-off cost, as the improved assumptions about the recurring cost could assist with future analysis of the on-going costs of COMAH 15, whereas the one-off cost will not be relevant for future decision making around COMAH 15.
78. The 2014 IA used HSE’s best assumption based on its own expert experience that it would take at most 0.5 hours a month per top tier establishment, or 6 hours per annum (with a range of +/- 10% either side). Based on the average estimated cost of time for large and small businesses, of £28.89 per hour, this equates to a cost per establishment of between around £160 and £190 with a best estimate of £170. The best estimate of the NPV of the cost of the time to review public information for UT establishments was estimated to be between around £0.4m and £0.5m, with a best estimate of around £0.45m.
79. The PIR survey gave an estimate of 16 hours per annum to keep public information up to date for UT establishments. Using the average estimated economic cost of time for large and small businesses, of £28.89 per hour, gives an estimated cost per establishment of £470 per annum. Based on the revised estimate of 348 UT establishments in this PIR, the annual cost of keeping public information up to date is estimated as £0.16m. The best estimate of the net present value over the appraisal period is around £1.25m.
80. Table 10 below summarises the difference between the PIR and the 2014 IA in terms of the best estimate of per establishment cost, NPV and EANCB.

*Table 10 - summary of difference between 2014 IA and the updated PIR estimates: public information*

	Best estimate of cost per establishment of public information (£)	Best estimate of NPV (Society) (£m)	Best estimate of NPV (Business) (£m)	Best estimate of EANCB (£m)
2014 IA	170	0.45	0.45	0.05
PIR	470	1.25	1.25	0.15
Difference in PIR compared to 2014 IA	300	0.81	0.81	0.09

## **CAT 1 responders at the testing of all emergency plans**

81. COMAH 15 requires 'designated authorities' which includes CAT 1 responders to take part in the testing of external emergency plans for UT establishments when requested to do so by the local authority (LA). At present, LAs have a duty to test the external emergency plan and take reasonable steps to arrange for the emergency services to participate. However, in COMAH 99 there was no specific duty on emergency services (or other CAT 1 responders) to take part. At the time of writing the 2014 IA HSE was made aware that in some parts of the UK key partners fail to take part, but the picture was patchy across the country. However, HSE also understood that where CAT 1 responders fail to co-operate the effectiveness of tests will be significantly reduced which could have a potential impact on the health and safety of the surrounding population.
82. COMAH 15 introduced the legal requirement for CAT 1 responders to take part in the testing of emergency plans for UT establishments. As noted, this was classed as gold plating in the 2014 IA. Using a variety of research methods, the 2014 IA estimated that the average cost for a full live test ranged between £15,000 and £18,000 with a best estimate of £16,000. If the establishment opted for a table-top exercise, the average cost was estimated in the 2014 IA as between £7,000 and £10,000 with a best estimate of £8,500. The 2014 IA assumed there would be an equal split of the costs between the two type of test, giving an average cost of testing emergency plans as £8,500 to £16,000 with a best estimate of £12,000.
83. COMAH 15 also requires that the plan is tested every 3 years so the 2014 IA assumed a third of UT establishments would test their plan per annum. Based on the research at the time, the 2014 IA also assumed that CAT 1s were currently attending 85% of the tests. Research for the 2014 IA also revealed that approximately 2/3 of tests are paid for by the COMAH establishments and for the remaining 1/3, the costs are split between the LAs and the CAT 1s.
84. In the 2014 IA the number of UT establishments following net movements out of scope was estimated as 333 to 339. This gave an average number of tests per annum of between 111 and 113 with a best estimate of 112. Using the assumption that CAT 1s attend 85% of tests, this equates to between 94 and 96 tests being attended by CAT 1s under COMAH 99 with a best estimate of 95. The additional tests that would need to be attended by CAT 1s per annum is therefore the difference between what was being attended under COMAH 99 (94 – 96 tests) and what is required under COMAH 15 (111 to 113 tests). In other words, around 17 extra tests would need CAT 1 attendance per annum. Using the assumption that the cost of a test would be between £8,500 to £16,000 (paragraph 82) the total annual estimated cost of the additional CAT 1 attendance was estimated to be between £0.14m and £0.28m with a best estimate of £0.21m. Between around £0.094m and £0.18m is borne by COMAH operators (cost to business); with the remainder split between LAs and CAT 1s, i.e. between £0.02m and £0.05m each by CAT1s and LAs.
85. Splitting this cost to COMAH operators between all UT establishments (estimated as between 333 and 339 following alignment of scope) gives an average cost per establishment of between £280 and £830 with a best estimate of £550.

86. The estimated total NPV of the cost of CAT 1 responders attending all UT emergency plan tests was estimated in the 2014 IA as between £1.07m and £2.10m with a best estimate of £1.58m. This was the estimated cost to business, local authorities and CAT 1 responders. The total NPV of the cost that fell to business was estimated to be between £0.71m and £1.4m, with a best estimate of £1.05m. The 2014 IA estimated that the EANCB that was relevant for OITO calculations as a result of this gold plating, was equal to around £0.1m (in 2009 prices).
87. The PIR survey tested three of the assumptions behind the requirement for CAT 1 responders to attend emergency plan tests; the cost of live test; the cost of a table top exercise; and the baseline percentage of tests that CAT 1 responders were already attending prior to COMAH 15.
  - a. The survey found that the average cost of a live test to be £18,000
  - b. The survey found that the average cost of a table-top exercise to be £6,500
  - c. The survey found that on average that the CAT1 responders were attending 76% of tests prior to COMAH 15.
88. Inputting these new assumptions into the 2014 IA cost model, using the calculations and assumptions described in paragraphs 82 to 84, plus the improved estimate of UT establishments, the revised estimates show that around 116 establishments will require testing of their plans each year and that around 27 of these will require additional attendance by CAT 1 responders each year. The annual cost is estimated at around £0.34m. Of this, around £0.23m would be borne by COMAH operators and CAT 1 and LAs will split the rest at £0.06m per annum.
89. Splitting this cost to COMAH operators between all UT establishments (348 following alignment of scope) gives an estimated cost per UT operator as around £650.
90. The re-estimated NPV in this PIR, of CAT 1 responders being required to attend all UT emergency plan tests is estimated at around £2.60m. This is the estimated cost to business, local authorities and CAT 1 responders. The total NPV of the cost that falls to business is estimated to be around £1.73m.
91. Table 11 below summarises the difference between the PIR and the 2014 IA in terms of the best estimate of per establishment cost, NPV and EANCB.

*Table 11 - summary of difference between 2014 IA and the updated PIR estimates: emergency plan tests*

	Best estimate of cost per establishment of CAT 1 responders testing plans (£)	Best estimate of NPV Cost (Society) (£m)	Best estimate of NPV Cost (Business) (£m)	Best estimate of EANCB (£m)
2014 IA	550	1.58	1.05	0.12
PIR	650	2.60	1.73	0.20
Difference in PIR compared to 2014 IA	100	1.02	0.7	0.08

### Redacting safety reports

92. Under COMAH '99 there was a requirement on the CA to make safety reports available to the public via a public register, with operators being able to apply for information that was commercially confidential to be excluded. Following the September 11th 2001 terrorist attacks, there was a Secretary of State Direction in place that prohibited the disclosure of safety reports. The Secretary of State Direction fell on 1st June 2015 and from that date, under COMAH 15, each request for a COMAH safety report is dealt with on a case by case basis. Unless there are commercial confidentiality or national security issues, the CA is required to provide the full safety report.
93. The 2014 IA assumed that operators would be required to identify issues relating to national security or commercial confidentiality when they submit their notifications to the CA. The 2014 IA estimated that the safety reports would be redacted by HSE and that the amount of time required would be some combination of:
- a. A Band 3 inspector for between 270 and 330 hours, with a best estimate of 300 hours;
  - b. Or a Band 6 administration officer for between 150 and 225 hours with a best estimate of around 188 hours; plus a Band 3 inspector review estimated to take between 7.5 hours and 22.5 with a best estimate of around 15 hours
94. The 2014 IA assumed that the total time spent by the CA would be an average of these two above scenarios. The IA also estimated that the true economic cost of employing a Band 3 inspector was £155 per hour and £19.48 per hour for an administration officer. The cost per UT establishment to have their safety report redacted was estimated as between £23,000 and £30,000 with a best estimate of around £26,000.
95. The IA also estimated that there was a cost to industry of notifying HSE of these commercially and security sensitive pieces of information. The 2014 IA estimated this as between 10 person days and 60 person days. Using the same cost per hour as set out in paragraph 94, the estimated cost of notification was between £2,000 and £13,000 with a best estimate of £8,000.
96. The 2014 IA assumed that all the safety reports would be redacted in the first year of

the appraisal period. The total expected number of UT establishments from the 2014 IA was between 333 and 340 and so the total estimated NPV of the costs was estimated as between £8.36m and £14.44m with a best estimate of £11.39m. All of these costs were reported in the 2014 IA as costs to business, on the assumption that the cost of the CA redacting safety reports would be charged back to business.

97. In reality, HSE did not redact all safety reports pre-emptively, but instead did so only when safety reports were requested through public information provisions. Also, where HSE has done this, costs have not been recovered from the dutyholders as the IA assumed they would be.
98. HSE has monitored how many such requests for safety reports have been received. In the five years, only five requests have resulted in a safety report being redacted.
99. This means that the costs to business for notifying HSE which elements should be redacted remain, although spread across the updated estimate of 348 UT establishments. This comes to between around £0.75m and £4.52m with a best estimate of £2.6m.

Cost to CA: the average estimated cost per establishment is the same as in the 2014 IA, between £23,000 and £30,000 with a best estimate of £26,000. This PIR has used actual data to show on average the CA has redacted just one safety report per annum. If we assume that this rate of one per year will continue, this leaves us with an estimated net present value of the cost to the CA over 10 years, of between £0.17m and £0.22m with a best estimate of £0.20m.

100. The total cost from redacting safety reports has been re-estimated in this PIR to between £0.93m and £4.75m with a best estimate of £2.84m.

*Table 12 : summary of difference between 2014 IA and the updated PIR estimates: redacting safety reports*

	Best estimate of NPV (Society) (£m)	Best estimate of NPV (Business) (£m)	Best estimate of EANCB (£m)
2014 IA	11.39	11.39	1.32
PIR	2.84	2.64*	0.31
Difference in PIR compared to 2014 IA	8.55	8.75	1.02

\*the estimate of NPV to business is £0.2m less than the NPV to business in the PIR because although the majority of the cost is estimated to have been borne by business, there is also known to be a cost to the CA of redacting the safety reports which is not re-charged to business. In the 2014 IA it was assumed that the total NPV fell to business as it was assumed that all of the costs would be charged back to business and so no difference between the cost to society and business.



### Summary of Costs of COMAH 15 : PIR compared to 2014 IA

101. The following Table 13 compares the 2014 IA and PIR estimates of NPV total cost and EANCB, based on all the analysis from paragraphs 25 to 100, in other words for the cost impacts that have been re-visited as part of this PIR.

*Table 13 – Summary of cost categories analysed in this PIR: comparing the NPV and EANCB to the 2014 IA*

Cost impact	Best estimate Societal Cost NPV (£m)			Best estimate EANCB (£m)		
	2014 IA	PIR	Difference	2014 IA	PIR	Difference
Scope	-1.42	2.09	3.51	-0.16	0.24	0.41
Updating safety reports	20.9	15.48	-5.42	2.43	1.80	-0.63
Re-notifications	0.15	1.0	0.9	0.02	0.12	0.1
Information about neighbouring establishments	2.31	1.33	-0.97	0.27	0.15	-0.11
Keeping public information up to date	0.45	1.25	0.81	0.05	0.15	0.09
CAT 1 responders at all emergency plan tests	1.58	2.60	1.02	0.12	0.20	0.08
Redacting safety reports	11.39	2.84	-8.55	1.32	0.31	-1.02
Summary of differences from all assumptions tested			-8.72			-1.08

102. Table 13 above presents the assumptions that have been re-visited in this PIR and the summary of the effects that changing those assumptions have on estimated NPV for that cost category and EANCB. The table shows that while some of the assumptions in the 2014 IA have been found to be on the low side, others are higher, and the net effect of these is a decrease in total estimate NPV of £8.72m and a decrease in the estimated EANCB of £1.08m

### Cost categories not tested in this PIR

103. The cost categories that have not been specifically updated in this PIR are shown in Table 14 below. The table shows the 2014 IA societal NPV and EANCB for each cost category. The table also provides the PIR estimate for these costs, which have not been tested during this PIR but which do differ from the 2014 IA because they contain the new number of baseline establishments, updated as part of the PIR.

104. The 2014 IA expected that after implementation of COMAH 15 the number of establishments at each tier would be as follows:

- a. UT = 340
- b. LT = 592
- c. Total = 932

105. The PIR has updated those estimates using the best available evidence to the following:

- a. UT = 348
- b. LT = 531
- c. Total = 879

106. This baseline (see paragraph **Error! Reference source not found.** and **Error! Reference source not found.**) affects most of the costs and overall has the effect of increasing the NPV of the total costs estimated in the PIR compared to the 2014 IA by £0.64m and increasing the EANCB by £0.07m see Table 14 below.

Table 14 – List of un-tested costs from 2014 IA - with estimates adjusted in PIR by increasing the baseline number of establishments

Cost impact	Best estimate Societal Cost NPV (£m)		Best estimate EANCBS (£m)		Reference in 2014 IA ( <a href="#">link</a> )		
	2014 IA (£m)	PIR (£m)	Difference	2014 IA (£m)		PIR (£m)	Difference
<b>UNTESTED COSTS TO BUSINESS</b>							
<b>Untested Direct Costs to Business</b>							
Reviewing inventories	0.071	0.066	-0.005	0.008	0.008	0	2014 IA : paras 65 - 71
Providing public information	2.49	2.55	0.06	0.29	0.30	0.007	2014 IA: 115 – 127
Familiarisation	0.31	0.29	-0.022	0.04	0.034	-0.003	2014 IA: 194 - 199
<b>Total un-tested costs to business</b>	<b>2.87</b>	<b>2.91</b>	<b>0.03</b>	<b>0.33</b>	<b>0.34</b>	<b>0.004</b>	
<b>Untested Cost Savings to Business</b>							
5 year review of safety report	-0.26	0.17	0.43	-0.03	0.019	0.050	2014 IA: 176 - 177
<b>NET UNTESTED COSTS TO BUSINESS</b>	<b>2.61</b>	<b>3.07</b>	<b>0.46</b>	<b>0.30</b>	<b>0.36</b>	<b>0.05</b>	
<b>Untested CA review charged back to business</b>							
Review of new safety reports	0.26	0.45	0.19	0.031	0.053	0.022	2014 IA: 174 - 175
Notifications from new establishments	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	2014 IA: 170 - 173
Renotifications from existing sites	0.035	0.033	-0.003	0.004	0.004	Negligible	2014 IA: 182 - 183
Reviewing updated safety reports	1.56	1.55	0.008	0.18	0.18	0.001	2014 IA: 178 - 181
<b>TOTAL UNTESTED CA COST CHARGED BACK TO BUSINESS</b>	<b>1.86</b>	<b>2.04</b>	<b>0.18</b>	<b>0.22</b>	<b>0.24</b>	<b>0.02</b>	
<b>UNTESTED COSTS TO GOVERNMENT</b>							
Public information IT	0.4	0.4	0	n/a	n/a	n/a	
<b>Total UNTESTED COSTS TO GOVERNMENT</b>	<b>0.4</b>	<b>0.4</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	
<b>TOTAL UNTESTED COSTS</b>	<b>4.87</b>	<b>5.51</b>	<b>0.64</b>	<b>0.52</b>	<b>0.59</b>	<b>0.07</b>	
<b>TOTAL TESTED COSTS (Table 13)</b>	<b>35.36</b>	<b>26.64</b>	<b>-8.72</b>	<b>4.05</b>	<b>2.97</b>	<b>-1.07</b>	
<b>TOTAL COSTS</b>	<b>40.23</b>	<b>32.15</b>	<b>-8.08</b>	<b>4.56</b>	<b>3.56</b>	<b>-1.0</b>	
<b>UNTESTED COSTS AS % OF TOTAL</b>	<b>12%</b>			<b>11%</b>			

107. As can be seen from Table 14, the untested costs form around 12% of the total NPV per the 2014 IA and around 11% of the 2014 EANCB.
108. Table 14 also provides the references to where these costs were originally estimated in the 2014 IA, for reference.
109. The costs to Government have not been re-estimated on the grounds of proportionality, because they were much lower than some of the other categories.
110. Similarly, the costs to business that are recharged from the CA are not re-estimated; these costs are not within the control of business and so business would not have been able to comment on the validity of our assumptions via the survey. HSE did not think it was a proportionate use of resource to test these assumptions further as most of them fall under £1m NPV.
111. The only other costs which have a NPV greater than £1m are the cost of providing public information. Public information costs are comprised of the one-off costs of putting together the public information and the on-going annual costs of keeping this up to date. On the grounds of proportionality, just one of the costs associated with public information has been tested. The annual recurring cost has been chosen instead of the one-off cost, as the improved assumptions about the recurring cost could assist with future analysis of the on-going costs of COMAH 15, whereas the one-off cost will not be useful to future decision making about COMAH 15. The annual costs of public information are tested in paragraphs 76 to 80.
112. Table 15 below shows how the total costs of COMAH 15 compare between the 2014 IA and those re-estimated in this PIR.

*Table 15: Summary of estimated NPV and EANCB 2014 IA and PIR*

<b>Cost impact</b>	<b>Best estimate Societal Cost NPV (£m)</b>			<b>Best estimate EANCB (£m)</b>		
	2014 IA (£m)	PIR (£m)	Difference	2014 IA (£m)	PIR (£m)	Difference
Total costs	40.23	32.15	-8.08	4.57	3.56	-1.00

113. Using the updated assumptions in this PIR, the total costs of COMAH 15 (2014 prices) have an NPV of £32.15m and an EANCB of £3.56m. This is a decrease on the 2014 IA estimates of £8.08m in NPV and £1.00m in terms of the EANCB, 20.0% and 22% decrease respectively.
114. Given the decrease in estimated NPV and EANCB between the 2014 IA and the PIR, this provides relative assurance that the 2014 IA was not understated. As previously noted, the cost categories were tested on a sample basis and were either those which were more significant costs or those about which there was less certainty about the assumptions. On the grounds of proportionality and the relatively low variance found

between the 2014 IA and the PIR, it is not proposed that any more of the assumptions about costs need to be re-visited.

## Benefits

115. The main benefit of the COMAH regime is the prevention of catastrophic incidents which could cause serious harm to people, the environment and the economy and to provide public assurance that risks which could affect them are effectively regulated. For COMAH 15, most of these benefits are maintained from COMAH 99 and are not included in the assessment of the value of this regulation change. The change in scope to align COMAH 15 with CLP was not expected to deliver any health and safety benefits or change the health and safety profile of establishments. The 2014 IA identified benefits of COMAH 15 including better public information; involvement of emergency services in the testing of external emergency plans, and the sharing of information to neighbouring establishments. The 2014 IA was not able to monetise these benefits as there were no readily available market values with which to do this and the effort involved would be disproportionate. It is still not proportionate or possible to quantify these benefits for the purpose of this PIR.

## CONCLUSION

116. This PIR has re-estimated that at the time of implementation, the total estimated NPV of the cost to society of COMAH 15 was around £32.15m over a 10 year appraisal period. The EANCB has been re-estimated as £3.56m.

117. These estimates compare to those from the 2014 IA in which the total NPV of the cost to society was estimated as £40.23m. The EANCB was estimated as £4.57m. The difference between the NPV of the cost to society between the 2014 IA and the PIR is a decrease of £8.08m and the difference in the EANCB is a decrease of £1.00m. This equates to around a 20% and 22% decrease, respectively.<sup>35</sup>

118. The PIR has been updated using the best available and actual data about movements in establishments in and out of scope and between tiers; and also the revised and improved data about the baseline number of establishments as at the implementation date of COMAH 15. The survey on costs has also provided improved assumptions about some of the highest cost categories and / or those where there was more uncertainty in the 2014 IA.

119. The predicted benefits of COMAH 15 remain the same as those set out in the 2014 IA and also remain unquantified. The risk of a major accident was already low prior to COMAH 15. In addition, the alignment of scope between COMAH 15 and CLP was intended to maintain health and safety standards at the status quo. It is not possible to quantify the marginal effect that these regulations may have had on reducing risk.

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<sup>35</sup> N.B. the percentage increases are not the same because the NPV of the cost to society includes cost to Government, while the EANCB is just based on the cost to business.