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Consultation on the draft update to the National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants – A summary of responses

United Kingdom of Great Britain and Northern Ireland

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We are the Department for Environment, Food and Rural Affairs. We're responsible for improving and protecting the environment, growing the green economy, sustaining thriving rural communities and supporting our world-class food, farming and fishing industries.

We work closely with our 33 agencies and arm's length bodies on our ambition to make our air purer, our water cleaner, our land greener and our food more sustainable. Our mission is to restore and enhance the environment for the next generation, and to leave the environment in a better state than we found it.



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Introduction

Between 19 March and 14 May 2021 we invited views via a consultation on the 2021 draft update to the UK National Implementation Plan (NIP) for the Stockholm Convention on Persistent Organic Pollutants (POPs). The update is required by the Convention periodically to explain how changes to the convention have been implemented, including when new POPs substances are listed for restriction, elimination, reduction and / or elimination of unintentional production.

This document summarises the responses received for the consultation which was published on the Defra Citizen Space platform and which sought views and comments on specific questions.

The update to the NIP covers “new POPs”, which have been more recently listed under the Stockholm Convention in 2017 and we have also included work to date on the POPs added to the Convention in 2019. These were not covered in our last NIP update in 2017. It sets out the information available to us for these substances and our plans to monitor and eliminate them in the future. It also provides a short update on the older POPs and the actions taken since our last NIP update.

Defra and the devolved administrations have considered the views of all stakeholders with an interest in the updated NIP before finalising the document and sending it to the Stockholm Convention for publication on their website.

Overview

We received 18 responses to the consultation. Respondents were individuals, academics, industry associations, water companies, local authorities, businesses and charities.

We are grateful to everyone who took the time to respond and share their views and suggestions. This document highlights the main issues raised but is not an exhaustive commentary on every response received. Any comments received that are outside the scope of this NIP have been passed to the relevant policy or expert area.

The government is also developing a Chemicals Strategy which will look to set out our immediate priorities, alongside any actions we will need to take to achieve safer and more environmentally sustainable management of chemicals for present and future generations.

There was a mix of views on the information provided in the NIP and the level of ambition set out in actions for the next few years. Some comments have led to amendments to the final document and other comments will be considered for further policy development prior to the next NIP update. Where they apply to substances, such as PFOA, which will be the subject of the next NIP update, they will be considered as we develop further plans for these substances.

Summary of responses

Some of the comments received relate to substances that are not listed as POPs. The UK's updated NIP is specific to POPs i.e. those substances that have already been identified as fulfilling the criteria of remaining intact in the environment for long periods (persist), accumulating in the fatty tissue of humans and wildlife (bio-accumulate) have harmful impacts on human health or on the environment (toxic) and become widely distributed geographically, deposited far from their place of manufacture / release (long-range transport).

We also received comments relating to the assessment of the properties of substances. Evidence presented to the POPs Review Committee has been considered in the process of preparing an agreed risk profile prior to listing the substances as POPs. Therefore, it is outside the scope of this NIP and this consultation to consider further testing of these criteria; the focus being on management, monitoring and elimination of these known harmful substances.

Questions and responses

Q5. How do you judge the quantity of information provided in the NIP to inform you about the current baseline for decaBDE?

Number of responses

14 respondents answered this question with 6 written responses.

Of those who answered:

Far too little	1
Too little	7
Just right	5
Too much	1
Far too much	0

Key themes

Of the 6 written responses, the need for a better understanding of the use, monitoring and disposal of decaBDE were the main themes. One respondent felt that there needed to be a proper baseline and to have all the information consolidated. Another asked if there would be a ban on landfill and recycling. For incineration, more information was requested on appropriate destruction and what incineration conditions must be met. Another asked what steps are in place to ensure articles with decaBDE are adequately disposed of.

A number of respondents wanted more detail on the monitoring that has been undertaken to confirm that there are no stockpiles or sites contaminated with decaBDE identified in the UK. Phrases such as, 'data was limited', or 'a limited number of sampling stations', were felt to be too vague and needed quantification. One respondent felt that the monitoring section gives the impression that the methods are inadequate and there is no effort to improve these. One felt that there is also no indication of any effort to set standards of what are acceptable levels.

On specific article and waste types, waste electronic and electrical equipment (WEEE) attracted comments about the estimated lifespans of these products and current usage of electrical equipment. It was also felt that there was a lack of detail about how decaBDE is used for exempt uses such as manufacture of parts for aircraft and how we deal with obsolete aircraft. A respondent also felt that the NIP lacked understanding of chemical content in raw materials used in the manufacture of mattresses.

Government response

In response to the comment on monitoring, monitoring of the water column is considered to be less relevant compared to monitoring of other media because decaBDE is not readily water soluble. There are also technical challenges associated with water monitoring. We have now included a summary of the UK data in a recently published monitoring study. The publication details a European 8-year (2005-2012) monitoring program on trends of decaBDE concentrations in birds' eggs, sewage sludge and sediments from seven countries. We have also added some clarification of the monitoring results available in the monitoring section of the NIP.

More information has been added to the NIP about the requirement to destroy decaBDE present in some waste and the incineration conditions required to achieve that. We have also clarified that only unintentional trace contaminant levels of this substance can be present in recycled materials, the limit of which is set out in Annex I of the POPs regulations.

At page 14 we have clarified that while exemptions for laboratory research, unintentional trace contamination (UTC) and articles in use prior to 15 July 2019 remain, there are currently no specific exemptions that allow for the manufacturing, supply and use of decaBDE in Great Britain (GB). These exemptions were removed by the POPs EU Exit regulations.

This means that specific exemptions allowing the manufacturing and use of decaBDE in parts of some aircraft and motor vehicles that were available prior to 31 December 2020 are no longer available in GB. In addition, the UTC limit for electrical equipment is currently 0.05%. We intend to reinstate the exemptions for decaBDE which were removed by the POPs EU Exit regulations.

Following that we have committed to work with stakeholders to review and update the exemptions for all POPs, in the UK over the next year. We invite all stakeholders to input to this review and those wishing to contribute should email us at POPS@defra.gov.uk to register their interest.

With regard to current lifespans and usage of electrical and electronic equipment (EEE) in use, there is no requirement to phase out items in use that contain POPs that were banned after an item was made and sold. It would be extremely difficult to do this as information on the composition of products is not readily available. There are various estimates regarding how long an electrical item generally lasts. For example it is 12 years for a television, which can help with planning when these items will reach the waste stream.

Some of that waste planning has been used to develop the waste tool, which is mentioned in the NIP. That tool will be made available more widely once it has been further refined and quality assured and we would welcome industry input to help refine these data to further improve our confidence in its outputs.

Defra and the Environment Agency have been undertaking work to identify which items of soft furnishings waste and which waste streams are at most risk of containing decaBDE and have also been considering approaches to waste management. The findings of this study have been shared across UK governments and we will continue engagement with stakeholders including manufacturers and waste managers.

All the information we have with regard to mattresses, including our literature study looking at uses of decaBDE in soft furnishings and discussions with manufacturers, suggest that they do not contain large quantities of decaBDE as this would reduce the functionality of the mattress. We have clarified this in the NIP. If there is further information available that suggests otherwise, we would like to receive it at the POPs team mailbox address POPs@defra.gov.uk

Q6. How do you judge the quantity of information provided in the NIP to inform you about the current baseline for SCCPs?

Number of responses

12 respondents answered this question with 3 written responses.

Of those who answered:

Far too little	2
Too little	5
Just right	5
Too much	0
Far too much	0

Key themes

The key theme of responses to this SCCPs question was the monitoring of SCCPs, especially in rivers. It was felt by one respondent that monitoring at the mouths or in the lower course of River Basin Districts is not the most appropriate way of monitoring

chemical risks of any pollutant. They felt that SCCPs potential sources across River Basin Districts should be identified using industry information and geographical information systems. Sampling locations could then be selected based on the data generated by these analyses.

Another respondent felt that, whilst noting the associated difficulties resulting from the low sensitivities of current methods for quantification, baseline data could have been improved by monitoring SCCPs in biota that feed at a trophic level where concentrations might be expected to be detected. Modelling of this information could then be used to estimate whether levels of SCCPs meet Environmental Quality Standards.

Another wanted to know how the minimum reporting value (MRV) was derived and felt it would be helpful to understand whether all the methods under development are analytical chemistry based or whether any are undertaken in conjunction with biological effects.

Government response

As stated in the NIP, follow-up surveillance monitoring has not been undertaken for SCCPs in water as the methods available are not sufficiently sensitive and are unlikely to provide further information on environmentally relevant levels in water. There are challenges in determining the concentration of chlorinated paraffins in the environment and biota, and so this has led to drafting of Action 2 of the updated NIP.

Action 2 aims to investigate the availability, reliability and feasibility of current and emerging analytical techniques for measuring chlorinated paraffins in the environment. We will take respondent recommendations into consideration when planning any future monitoring for SCCPs.

The minimum reporting values (MRVs) are derived statistically by the Environment Agency's National Laboratory Service (NLS). The derivation of the MRVs are part of the NLS's analytical quality assurance.

Q7. How do you judge the quantity of information provided in the NIP to inform you about the current baseline for dicofol?

Number of responses

12 respondents answered this question with 2 written responses.

Of those who answered:

Far too little	2
Too little	2
Just right	6
Too much	1
Far too much	1

Key themes

It was felt that more detail should be included and also links to the data sources to provide robust support for statements. Having an open data policy in these reports (and other EA, NRW, SEPA, Defra publications) would allow for a full assessment of the support / evidence-base for decisions.

As monitoring in water does not seem to be a sensible route forward, one respondent suggested that we look at monitoring at higher trophic levels to be confident that it is not problematic, including in some freshwater systems or higher in food chains and to undertake biota monitoring more systematically.

Government response

Much of the data referred to in the NIP update and links to publicly available data have been provided throughout the document.

As stated in the NIP update, dicofol has not been produced or used in the UK for many years and the Environment Agency does not routinely monitor dicofol in England as it does not have an analytical method capable of accurately quantifying the amount of dicofol present in either biota or the water column. However, its breakdown product has been detected at elevated levels in coastal and estuarine surveys conducted in 2015. Should elevated concentrations of dicofol or DCBP arise in future environmental monitoring data then the Environment Agency will consider these substances further within their Prioritisation and Early Warning System (PEWS).

Q8. How do you judge the quantity of information provided in the NIP to inform you about the current baseline for PFOA?

Number of responses

11 respondents answered this question with 3 written responses.

Of those who answered:

Far too little	1
Too little	3
Just right	5
Too much	2
Far too much	0

Key themes

Many of the comments related to monitoring and understanding of where PFOA can be found and some respondents thought that the information provided was limited.

It was commented that the absence of PFOA in fish samples cannot necessarily be used to show limited ecological risk. One respondent considered that the sampling and monitoring of fish completed by the EA, i.e. macerated tissue to provide whole-body estimates is not appropriate for many chemicals which may disproportionately accumulate in different tissues (for example, liver).

Other comments were concerned about the gaps in information, such as the need to identify if there are contamination hotspots, the amount of PFOA that exists / is produced as a by-product of the production of other chemicals and from the transformation of derivative chemicals. Another wanted to know how the minimum reported values (MRVs) relate to the environmental quality standards (EQS).

One respondent wanted more information on how and why the stockpiles of PFOA-based foams are declining. Another wanted more information on the safer alternatives to the PFOA-containing firefighting foams.

Finally, a respondent wanted a greater understanding of the use of PFOA in polymer production and transformation products since this could be quite widespread and there is no sense of how much of a problem this is.

Government response

PFOA properties and its use were considered leading up to the restriction of the substance at the Stockholm Convention in 2019. It will be the focus of the next NIP update. We have included the information we have available at this time and recognise that there are gaps in our current understanding. We have begun work to update our multi-media emissions inventory (MMEI) to include a PFOA inventory and this will be included in the published annual reports of that work and the next NIP update. Developing an understanding of the impact of polymer production and transformation products on PFOA emissions is part of the PFOA inventory work. This is in the early stages and more information on this will be provided in the next NIP update.

Regarding the comment on the appropriateness of the use of whole fish samples rather than specific organs whereby the chemical might accumulate, it is considered that whole fish samples may be used as they better represent ecological effects. It is also important to note that there is no EQS for PFOA at this time.

The MRVs are derived statistically by the Environment Agency's National Laboratory Service (NLS).

PFOA fire-fighting foams stockpiles are declining because this substance was identified as potentially harmful in the early 2000s and listed under the Stockholm Convention as a POP in 2019. The global ban on production has meant a gradual phasing out of its use in fire-fighting foams. It will be completely banned from use by July 2025 and stocks will decline as holders dispose of them and move to use alternatives. Information on alternatives to PFOA containing fire-fighting foams is available on the Stockholm Convention website and we have now included a link to this page in this NIP update.

Q9. Do you agree with the approach we are taking to reduce or eliminate releases from the unintentional production of HCBd?

Number of responses

13 respondents answered this question with 3 written responses.

Of those who answered:

Yes	10
No	3

Key themes

Views were mixed on the approach we are taking to HCBd. One respondent agreed that no action should be needed if there are indeed no emissions but thought that this should be verified. They would like to see a clear strategy of how this will be done.

On the other hand, another respondent was concerned that the government is doing little to stem the production of HCBd or find out the sources of unintentional release and legislate to eliminate them.

Government Response

We do not accept that little has been done to stop the production of HCBd. As stated in the NIP, production of HCBd ceased in 1993. It was banned for use and production globally in 2015 and latest emissions data for unintentional emission was close to zero in Europe in 2004 (CEFIC, 2004). Best available techniques (BATs) must be used for processes where there may be emissions.

We have committed to reviewing whether further monitoring is needed, as stated in Action 3 in the updated NIP. We have monitoring programmes such as the Toxic Organic Micro-Pollutants (TOMPS) network, where a suite of chemicals is assessed in set locations. We can investigate if HCBd can be added to this programme if a need is recognised in the future and we can add it to the Multi-Media Emissions Inventory if that is appropriate.

Q10. How do we develop the same level of understanding we have for electrical and electronic equipment for other, less well-defined waste streams such as soft furnishings and demolition waste?

Number of responses

There were 13 written responses.

Key themes

This is a complex issue and it was clear from the mix of responses that there is no one solution that will resolve it.

It was acknowledged that the development of an understanding of POPs in waste electronic and electrical equipment (WEEE) was supported within an industry that is subject to producer responsibility regulations, has a funding mechanism for research and where there is a fairly cohesive group of stakeholders. It may be more difficult to achieve this in other sectors.

Alternatives were proposed, such as, forcing operators in these sectors to undertake and publish full waste composition and characterisation assessments produced according to relevant guidance.

(WM3 <https://www.gov.uk/government/publications/waste-classification-technical-guidance>).

Another suggestion was to give business the responsibility to do the right thing by supporting business with worksheets, similar to asbestos, informing the businesses of what products may contain POPs and the expected ways of tackling them. Businesses could be allowed to tackle them differently if they can show their methods are effective.

One respondent provided advice on how we might measure these other waste streams through mapping the value chains and corresponding waste management practices which they believe can be done with a reasonable degree of accuracy for the UK, asking waste networks to supply information they have available. A respondent said that many Local Authorities (typically Waste Disposal Authorities) carry out waste composition analysis studies to help inform the development of local waste strategies / waste management plans.

Alternatively, a fund could be set up to support a representative sample of Local Authorities / waste contractors to commission their own waste composition study focussing on identifying the relevant material types within the collected waste stream.

The destruction of POPs material was raised with some concern about allowing incineration at 800°C. The respondent said that High Temperature Incineration is a viable, established option, however there are capacity concerns with this end-of-life route. It was felt that it was important to pick other economically and environmentally viable disposal routes. Energy Recovery Facilities could be an option, however clear guidance would need to be established about how these materials could be treated at these facilities.

It was suggested that it would be useful to involve the re-use sector, for example charity shops and other organisations that return such items back into circulation to ask them how frequently they receive items of certain ages and work with them to have a clear process for removing these from the supply to second-hand goods outlets.

A respondent suggested that the government needs to ensure that people are not penalised for using appropriate facilities and make it convenient and inexpensive to dispose of waste correctly. They also said that digital waste tracking seems sensible but asked how it will be implemented.

Government response

We recognise that there are significant challenges in managing POPs in the soft furnishing and demolition waste streams. For the management of WEEE there is a collective producer responsibility i.e. producers pay based on their market share in specified equipment categories, but do not have to reprocess their own equipment, and funding available through that has helped to develop an understanding of this waste stream.

In the Resources and Waste Strategy, the government set out a plan to consider measures including introducing extended producer responsibility for soft furnishings, incentivising producers to design their products to make it easier for them to be reused, dismantled and / or recycled at end of life. It could also require manufacturers to fund the management of waste that contain chemicals, which were legal at the time of manufacture but which have subsequently been banned. All of the suggestions provided will be considered as we develop policies for these waste streams.

To support the waste industry and direct further action, Defra and the Environment Agency commissioned studies to further our understanding of the use of POPs in soft furnishings, particularly decaBDE and HBCDD. A Defra literature study concentrated on where these substances were used and when. The Environment Agency commissioned a sampling study which looked for POPs, specifically brominated flame retardants, in domestic soft furnishings waste. Their findings suggest that there are a significant number of soft furnishings waste articles that need to be treated as POPs waste, requiring destruction of the elements containing POPs. Natural Resources Wales are also planning a carpet sampling project, which will report in spring 2022. Using the information in these studies, we are working with waste and soft furnishings stakeholders, including the re-use sector, to understand the size of the problem and practical solutions to identifying, and appropriately dealing with, these articles.

Different POPs are destroyed at different incineration temperatures. The Basel Convention produces technical guidelines for management of each POP and we will consider their advice as it is updated. The guidance states that PBDEs can be destroyed in Municipal Waste Incinerators (MWIs) which, in the UK, are required to operate at 850⁰C or above. We recognise that this guidance is based on a limited number of studies and that further work to consider the performance of UK facilities would be valuable. Enhanced emission monitoring is already planned for introduction in late 2023. A small proportion of PBDE waste is sent to cement kilns, which is also a recognised method for destroying PBDEs.

As set out in the NIP, Defra and the devolved administrations are working on an electronic waste tracking system and POPs waste is included as part of the project. A consultation on this opened in January 2022.

Q11. As the trend shows that emissions are declining and levelling off for the above chemicals [dioxins and furans (PCDD/Fs), polychlorinated biphenyls (PCBs) and hexachlorobenzene (HCB)] are there any further measures that can be taken by the UK government to facilitate further reduction in these emissions?

Number of responses

9 respondents answered this question with 5 written responses.

Of those who answered:

Yes 5

No 4

Key themes

This question was specific to the POPs that are measured in the Multi-Media Emissions Inventory (MMEI), the POPs that are listed as Annex C of the Stockholm Convention, namely dioxins and furans (PCDD/Fs), polychlorinated biphenyls (PCBs) and hexachlorobenzene (HCB). However, some of the respondents to the consultation have included other POPs, ones that have been added to consumer products. Subsequently, the response to this question included a recommendation to provide more and better public information about the chemicals in old sofas / fridges and for those disposing of such waste. It should be easier to dispose of such items. It was also felt by one respondent that we should support people to replace that old equipment.

Another respondent thinks that the focus of future reductions should now turn to sources not subject to Best Available Techniques (BATs) and should prioritise sectors which will need to be looked at first.

It was also felt that those who caused the emissions should have to contribute to the cost of facilitating further reductions.

Another idea was to address the issue of environmental contamination from legacy landfills.

Government Response

It is important that articles containing POPs above legal levels are dealt with appropriately and this starts with the public having information and facilities to dispose of their waste appropriately.

The governments and regulators will continue to work with stakeholders to improve knowledge of the presence of POPs in waste streams and provide guidance to those involved in managing them. Examples of where work has been completed or is underway includes waste electrical and electronic equipment (including fridges), sofas, carpets, printer cartridges, end of life vehicles and cables. The government has also committed to

review and consult on measures such as Extended Producer Responsibility and product standards for five new waste streams, with 'bulky waste' (which comprises furniture, mattresses, bedding and carpets) and certain materials in the construction and demolition sector identified along with other potential priorities.

There are no plans to provide support to facilitate the replacement of articles that contain POPs or any other chemicals.

Leaving the EU provides an opportunity to go further in developing a tailored regime for better protecting our environment from industrial pollution. The UK will set up a process for determining future UK Best Available Techniques (BAT) conclusions for regulating and permitting industrial emissions within the existing successful integrated approach to controlling pollution to air, water and land. We are currently exploring broader areas for the development of the new BAT regime such as expanding the scope to other industrial activities. This could enhance the consideration of the best techniques and methods available in the long term to deliver further environmental benefits and broader ambitions.

As set out in the NIP, Defra has commissioned further research into landfill leachate. Following on from an initial desk-based study investigating priority POPs for landfill leachate analysis and method development, this new project will sample a number of landfill sites around England and will measure a number of chemicals, including POPs. The project will report in 2022.

Q12. What are the priorities for research to better understand the impacts of POPs on the environment?

Number of responses

There were 12 written responses.

Key themes

A common theme of responses was a need to better understand risk. It was felt that improved risk characterisation will help us to better understand risks or harms that the natural environment is subject to. It was recommended that we develop predictive methods to understand risk to humans and biota. This would provide a complementary line of evidence alongside standardised toxicity testing. Additionally, testing approaches such as omics and high-throughput assays could be used to understand the pathways.

On monitoring, we received a number of suggestions. It was felt that sampling needed to be in the right place with the right suite of analysis. Targeting the monitoring at sites that are likely highly impacted by POP sources (i.e., urban systems) was stated as very important, as was understanding the effects at community and ecosystem scales and investigating the community / food web scale effects of POPs. This would be preferable to linking threshold-based metrics to chemical concentrations detected in the environment. It was also recommended that we use a wider range of species in testing so we are

including our rare and sensitive organisms, which may represent the most vulnerable species or populations.

One respondent felt that it was important to find release points for POPs into the environment, and then chase this back to a 'chain of custody' to find out how and why the products containing POPs got to a position where they were released.

Other views included a call for a ban on the manufacture and use of POPs. They mentioned the loss of the 99.5% of 'good' resources in 'POPs' contaminated materials. Another felt that more could have been done upfront to identify potential occurrence and possible 'difficult' waste streams. Another felt that the majority of these chemicals would not be necessary if the UK had fire safety regulations that were in step with Europe and the rest of the world.

Another theme was concern about mixture toxicity. Toxic effects of mixtures may occur at levels below toxicity thresholds for single chemicals but it was felt that we needed a better understanding of impacts of multiple stressors that contribute to the overall toxicity. Pollutants do not work in isolation, yet are often tested in this way.

Finally, it was recommended that we have better connectivity between regulators, industry and academics: a forum for ideas and knowledge exchange.

Government response

It is important to note the UK's updated NIP is specific to POPs. These substances already have a hazard profile that is sufficient to have them confirmed as being a POP. Therefore, for the purposes of the NIP it is outside the scope to consider further testing using Novel Alternative Methods (NAMs) such as omics.

In response to the call for a ban on the manufacturing and use of POPs, bans and restrictions are already in place. Once POPs are listed, apart for exempt uses, their production, use and emissions are banned or restricted and decisions of Parties to the Stockholm Convention are implemented through UK legislation.

It is our aim to minimise any further exposure to humans and the environment. This work is informed by a number of monitoring programmes of air, water and biota. As set out in the NIP, some of these are long standing and have shown a steady fall in emissions of POPs. However, as new POPs are identified, we need to continue to develop monitoring programmes and prioritise our resources to understand where action is required.

The government's 25 Year Environment Plan for England commits to a new strategy to tackle chemicals of concern. The government is developing a Chemicals Strategy which will look to set out our immediate priorities alongside any actions we will need to take to achieve safer and more environmentally sustainable management of chemicals for present and future generations.

The government considers the safety of consumers to be a priority, and consumers should have confidence that the products in their homes are produced to rigorous safety requirements. In July 2019, the government published its response to the 2016 consultation on 'Updating the Furniture and Furnishing (Fire) (Safety) Regulations 1988'.

The response sets out the new approach being developed which will focus on safety outcomes and will be underpinned by a set of essential safety requirements which all upholstered furniture placed on the market must meet. The revised Regulations will further enhance safety provisions and reflect changes in fire safety risks and technological advances, enabling newer and innovative materials to come onto the market. The new approach will facilitate a reduction in flame retardant chemicals as a means of making upholstered furniture fire safe.

The Furniture and Furnishings (Fire) (Safety) Regulations 1988 already allow for the use of materials and products that deliver consumer safety from fires, without using chemical flame retardants and the government continues to welcome innovative approaches that deliver safe outcomes for consumers.

We agree that, in the environment, humans and wildlife are exposed to mixtures and multi-stressors, however, further consideration of the toxicity of mixtures and multi-stressors are also outside the scope for this NIP. These views and concerns on testing methods, mixtures and multi-stressors could be considered as we develop the Chemical Strategy.

We agree that better connectivity between those groups is valuable. We are developing a new webpage and we will be using it to share POPs Review Committee dossiers, to call for comments and to provide signposts to other POPs information such as guidance. Our long-standing Chemical Stakeholder Forum is also providing a valuable opportunity to exchange views and understand the priorities. The UK governments and regulators have also established topic focused working groups to address waste management challenges.

Q13. Monitoring: do you agree with the approach to monitoring we are taking over the next few years, as set out in our summary of future actions for POPs in NIP Annex III – specifically monitoring actions 3, 12, and 14?

Number of responses

14 respondents answered this question with 5 written responses.

Of those who answered:

Completely agree	0
Agree	5
Neither agree nor disagree	6
Disagree	1
Strongly disagree	2

Key themes

The majority of respondents agreed with these actions. One response was that the development of emissions and storage inventories is crucial and long overdue but felt that

we should go a step further with a complete, systems-based approach which looks at chemicals from their production through to their disposal. This will support understanding the full risk of these compounds.

Respondents asked what form Action 3 on the review on the addition of HCBD to the UK emissions inventory will take.

One also considered that it is also important to develop a means of effectively and efficiently treating these substances as many are already out in the environment or in waste management systems.

Government response

Action 3: Further review the need for the addition of HCBD to the UK emissions inventory.

Action 12: Development and maintenance of multimedia emissions inventory for new and existing POPs.

Action 14: Further development and maintenance of TOMP's Monitoring network (Air).

Chemicals are considered throughout their 'life'. Through UK REACH, anyone that manufactures or places chemicals on the market in GB in volumes of 1 tonne or more, is required to register those substances. They must identify and manage the risks presented by the substances they manufacture and market in GB and must be able to demonstrate how the substance(s) can be used safely as well as communicate the risk management measures to their downstream users. The burden of proof is on companies to demonstrate they use chemicals safely. If evidence is subsequently found that suggests that a substance presents an unacceptable risk to human health or the environment, these risks can be managed via further regulation in UK REACH.

If evidence is subsequently found that suggests that a substance is not safe then UK REACH can and does restrict its use.

Collecting this data for emerging chemicals of concern is vitally important so we can prevent harmful chemicals entering the environment. This point is true of chemicals generally, it is not specific to POPs which are the focus of the UK NIP.

The review at Action 3 will look at the likely sources in the UK to make assessment of the emissions. The documents produced by the Stockholm Convention's POPs Review Committee detail production, use and emissions of substances nominated as POPs. The UK inputs into these documents and uses the combined data from all contributing parties to identify and assess production and exposure sites. If emissions are found to be potentially significant and a candidate for further action to reduce emissions then we will consider including HCBD in our MMEI.

The government is developing a Chemicals Strategy which will look to set out our immediate priorities, alongside any actions we will need to take to achieve safer and more environmentally sustainable management of chemicals for present and future generations.

Q14. Elimination of POPs: do you agree with the approach we are taking to eliminate POPs over the next few years as set out in our summary of future actions for POPs in NIP Annex III – specifically elimination actions 1, 6, 7, 9 and 15?

Number of responses

12 respondents answered this question with 8 written responses.

Of those who answered:

Completely agree	1
Agree	4
Neither agree nor disagree	4
Disagree	2
Strongly disagree	1

Key Themes

There was general agreement with the need to review exemptions for existing and new POPs, as set out in Action 1 but one respondent felt more detail was required.

For Action 7, the removal of PFOA from fire-fighting foam, stockpiles and waste, it was commented that this seems very targeted to one source and they requested more information on why this source in particular would be useful. Will this be enough given other potential sources? Another felt that the practicability of this action will depend on the ability of waste treatment capacity to manage increased volumes from the increased demand to remove these materials and we should ensure that capacity is not overwhelmed. Otherwise, additional disposal routes would need to be established.

For Action 9 which requires the removal of all equipment from use in the UK with PCB contaminant levels above legal limits, there was one comment that this work could be strengthened by identifying the largest sources of PCBs in open use.

With respect to Action 15, the compliance activities for PFOA and PBDEs in water, it was felt that the listed activities refer only to monitoring and not to reduction or elimination. At the same time, the draft NIP states that all surface waters fail the assessment of good chemical status for polybrominated diphenyl ethers (PBDEs, currently excluding decaBDE) and that all biota sampled are significantly higher than the environmental quality standard (EQS). In order to meet such a demanding EQS, they argue that much more needs to be done by way of enforcement.

As a general point there was a concern about when POPs are identified and therefore banned, and alternative chemicals are used in their place which, whilst meet the necessary health and safety requirements, may have the potential to be later identified as POPs, further perpetuating the problem. Responses asked for guarantees that replacements do not cause further risk to human health and the environment and for more

investment to be made further up the supply chain in improving product design and reducing chemical use overall.

We were also asked to engage with representatives across the waste sector at the earliest opportunity to help understand the implications of any future actions to eliminate POPs on operations (including any re-use activities), costs, infrastructure, contracts, markets, etc.

Finally, a respondent felt that the ELV sector has not had the scrutiny levelled at the WEEE sector.

Government response

Action 1: Review ongoing need for specific exemptions for existing and newly listed POPs.

Action 6: Complete consideration of the proposal to list MCCPs (within a specified range) to the Stockholm Convention.

Action 7: Effective removal of PFOA-containing fire-fighting foam from stockpiles and waste. To satisfy the specific exemptions for the PFOA POPs listing.

Action 9: Remove all equipment from use in the UK with PCB contaminant levels above legal limits.

Action 15: Compliance activities on PFOA and PBDEs in water.

As set out on page 11 of the NIP, the Stockholm Convention allows Parties to register time-limited exemptions to the prohibitions set out in Annex A of the Convention. The exemptions that the UK has adopted from the EU legislation may include exemptions specific to an EU country, not the UK. In Action 1 we plan to look at each of them and assess with businesses whether they are still required or should be removed from the UK list of exemptions.

Unlike many other PFOA uses, PFOA in fire-fighting foams has a time-limited exemption under the Stockholm Convention, with strict conditions. To ensure that these are managed in accordance with the regulations and support those using it to switch to alternatives as soon as possible, we included action 7, which focuses on this specific issue. Fire-fighting foams will require destruction according to Basel Convention guidelines, which currently identify High Temperature Incineration as the only available technology.

The comments on Action 15 stated that the emphasis was on monitoring, not on dealing with the source. Monitoring and much of the planned work is to better understand where the POPs are in the environment and, following these, there will be consideration of whether further work might be needed.

On the general points, we recognise that there have been regrettable substitutions when substances were banned from use. The POPs Review Committee does consider the alternatives when assessing POPs and recommend those that should be avoided. We understand it can be a large and costly technical challenge for industry to find a replacement for a restricted chemical.

We encourage industry to supply us and the POPs Review Committee with as much information as possible on the likely alternatives so that the risks of regrettable substitutions can be avoided, whilst recognising where substitution is difficult and exemptions may be required.

We are aware that many decisions to list new substances as POPs will have implications for the waste sector, due to the requirement to destroy POPs present in waste streams above legal limits. We will continue to engage with the sector and have established stakeholder groups to consider specific issues in recent years.

We will continue to do this and factor in their views as we develop our understanding of chemicals that have been nominated for future listing as POPs and future actions relating to POPs waste management.

As mentioned in the NIP, there is currently an ELV study taking place to understand POPs in vehicles and how they are managed.

Q15. Research: do you agree with the approach we are taking to research over the next few years, as set out in our summary of future actions for POPs in Annex III – specifically research actions 2, 8, 10, 11 and 13?

Number of responses

11 respondents answered this question with 5 written responses.

Of those who answered:

Completely agree	0
Agree	3
Neither agree nor disagree	7
Disagree	1
Strongly disagree	0

Key themes

A general comment was that it would be good to see some commitment to research funding to better understand extent and location of diffuse sources, to better understand behaviour that will ensure the public can and will help to identify and remove POP containing waste from household sources, biological effects and how these can be better incorporated into predictions at higher levels of biological organisation and used in a multi stressor framework.

It was also recommended that we undertake a wider surveillance programme identifying emerging chemicals that should be a focus of future research.

Action 2 is to investigate the availability, reliability and feasibility of current and emerging analytical techniques for measuring chlorinated paraffins in the environment. There was general agreement but one respondent said that this needs to include biological effects as well as targeting specific chemical groups such as PFAS which have been identified as high risk, and a wider surveillance programme identifying emerging chemicals should be a focus of future research. Action 8 is an assessment of levels of PFAS (including PFOS and PFOA) in the environment. One respondent agreed with this action but thought that this work should be supplemented with backdated analysis so that spatiotemporal trends can be determined. The data could also be used to assess how much substitution of PFOS and PFOA has taken place over time and which PFASs are being used for substitution.

Other respondents thought the risk of flooding / sea level rise should be taken into account and that there was a need for this to be done at multiple trophic levels and in sensitive species. It was also suggested that this needs to be done in a way that can be reproducible over time.

Commenting on the action to complete the next phase of the landfill leachate project at Action 11, it was felt that this work was urgently needed and that it may be appropriate to include the capture of samples of water run-off from other waste-related sites, such as Household Waste Recycling Centres and Transfer Stations.

Another respondent acknowledged the potential for POPs to migrate into the leachate that all landfills generate, many of which receive only rudimentary treatment before they are discharged into the wastewater network for further treatment, before being released back into the environment.

Finally, on Action 13 to review and verify the waste tool, one respondent believes that this will be a brilliant tool for industry and to increase public awareness so that they dispose of products correctly. It was a concern to another respondent who commented that funding for local authorities and businesses is required so that it does not become an additional burden if use of the tool results in actions that impact on them.

Government response

Action 2: Investigate the availability, reliability and feasibility of current and emerging analytical techniques for measuring chlorinated paraffins in the environment.

Action 8: Assess levels of PFAS (including PFOS and PFOA) in the environment.

Action 10: Further assessment of PBDEs in non-plastic articles.

Action 11: Complete second phase of the landfill leachate project, sampling and interpretation.

Action 13: Review, verify and improve the POPs waste tool.

There was a suggestion that when considering Action 2 we should also consider biological effects. We do recognise that it is important to fully understand the impact of these substances on human health and the environment. The biological effects of substances are considered by the POPs Review Committee as part of the listing process. The UK is

fully engaged with this process and we submit comments and relevant information where available to us. We also actively encourage all interested stakeholders to submit relevant information to us so that we can share this with the committee.

The timings and mechanisms to share information is available on our dedicated webpage. Due to our participation in the POPs review process and that POPs have been classified as having a potential adverse effect to human health and / or the environment, we do not think it necessary to further assess the biological effects of these substances, the focus of this action remains on techniques to measure the presence of chlorinated paraffins in the environment. This work will inform future consideration of whether additional monitoring can and should be carried out. If evidence is available to indicate that a biological indicator is a suitable tool to monitor the concentration of a specific POP or group of POPs then this will be considered alongside analytical methodology.

The Environment Agency have developed a Prioritisation and Early Warning System (PEWS) for Chemicals of Emerging Concern. The system allows the Environment Agency to consider any chemical substance nominated, to sift and to screen it using hazard data and environmental monitoring data. This allows prioritisation to indicate whether a substance may be a potential chemical of concern in England specifically to water, soil, sediment and biota. Analysis is already undertaken for approximately 1500 chemicals in water samples, and there is the ability to add additional analysis for further chemicals in the future if new substances are deemed to be a potential concern through PEWS. Non-target screening methods are being developed over the next few years which will increase understanding of any further emerging chemicals present in the environment which have not been previously intentionally monitored as part of a tiered approach to environmental monitoring.

We acknowledge the comments on Action 8. The Environment Agency are continuing their monitoring programme on PFASs. It is important to note that the NIP's focus is on POPs, so only focuses on the PFASs that are POPs (PFOA, PFOS and PFHxS if the listing is agreed at the Conference of the Parties). Additionally, as previously stated, the next update to the NIP will cover in more detail and any further information relevant to the listing of PFOA as a POP.

We recognise that many landfill sites will have accepted wastes containing POPs, including those that have no on-site treatment of leachate. The landfill leachate study will sample leachate from sites of varying design and waste input history. Consideration of the run-off from household waste and recycling sites is outside the scope for the current Landfill Leachate project. However, the Environment Agency will be considering risks from run-off outside storage of shredded WEEE plastics.

The waste tool at Action 13 is currently assessing DecaBDE, HBCDD and PCBs. As stated above under Q5, we plan to further improve the tool and test it with industry to reduce the uncertainty, before making it more widely available. The tool is one of many resources that will inform waste management policy, regulation and strategy, including assessment of the impacts on groups including businesses and local authorities.

Q16. Waste management: do you agree with the approach we are taking to waste management over the next few years, as set out in our summary of future actions for POPs in NIP Annex III – specifically waste management actions 4 and 5?

Number of responses

12 respondents answered this question with 8 written responses.

Of those who answered:

Completely agree	1
Agree	6
Neither agree nor disagree	3
Disagree	2
Strongly disagree	0

Key themes

Some thoughts were that there should be more focus, strong action, guidance, public awareness and legislation to deal with POPs waste management. One respondent thought that we were taking really beneficial steps that will help ensure POPs contaminated products are adequately disposed of.

Another respondent asked that if any further issues, impacts or actions are identified relating to the waste sector (including Local Authorities), representatives across the sector should be engaged at the earliest opportunity to help understand what the implications will be and to consider what mitigation activities can be put in place in a timely manner.

Action 4 relates to the development of guidance for waste handlers on decaBDE and HBCDD in soft furnishings. It was felt that guidance would need to be established through consultation with key stakeholders and research into other disposal routes for soft furnishings. It would need to be matched with sufficient lead in time to allow industry to adapt to changes. There was support for the work of the Soft Furnishing Working Group, who could undertake this work.

One respondent suggested that where possible, changes to waste management systems to deal with POPs should be aligned with proposed introduction / changes to existing Extended Producer Responsibility schemes to ensure the waste industry is not left with the cost burden of dealing with these materials appropriately.

Government response

It is our aim to remain engaged with the waste sector to ensure that new POPs issues, evidence, research and technology are communicated to the sector and solutions are worked on together.

For Action 4, development of guidance for waste handlers, we are currently working with a Soft Furnishings Stakeholder Working Group to better understand current waste management practices and to consider what steps are required to ensure this waste stream is managed appropriately. The Environment Agency developed their recent WEEE guidance with the assistance of the waste sector and this has ensured that the information provided is both relevant and useful in supporting compliance with the law.

We have made clear our ambition to consider further extended producer requirement responsibilities. A consultation on EPR for packaging closed recently.

Q17. General: is there anything else you would like to comment on or provide information on to support this NIP update?

Number of responses

There were 6 written responses.

Key themes

This general question attracted a range of comments, some of which are out of the scope of this NIP but have been passed onto the relevant policy area for consideration.

One respondent felt that to really protect the environment you need to have stronger controls on the manufacture, testing and the production of chemicals before they reach the market.

The management of waste was the main topic discussed under this question. It was acknowledged that once POPs reach the wastewater environment their removal to environmentally safe levels becomes prohibitively expensive.

It was felt that effective management of the risk to the environment and human health from POPs must be high priority and that the effectiveness of POPs waste management requires inventory tracking, environmental monitoring and effective punishments delivered by an effective legal system.

One respondent cautioned that when new POPs are detected, their control is appropriate to the risk to human health and the environment that they pose. One respondent felt that there was an urgent need to assess the current and future capacity of the waste and resource sector to manage materials / products containing current POPs and the capacity to treat future POPs as and when they are added to the convention. Another respondent highlighted technical aspects that need to be considered if POPs waste is processed in municipal energy from waste facilities.

A respondent asked whether cement kilns would be permitted to take POPs containing wastes (for example WEEE plastics containing decaBDE), because this could greatly assist with the disposal capacity issue, without the need to build additional facilities that could have a limited life-span. Concern was also expressed about the level of POPs in soft

furnishings and how it might impact on the third sector that manage a proportion of soft furnishings for re-use.

One respondent said that the resources and waste sector is one of the most innovative sectors in the UK and will, if given the opportunity and accurate data, rise to the challenge and invest in new ways to economically remove these chemicals from the environment.

We were asked to clarify whether POPs controls apply regardless of whether the waste is hazardous or non-hazardous. If they do then POPs need the same level of tracking as hazardous waste and the suggestion is that the government includes POPs in its forthcoming digital waste tracking system.

The respondent acknowledged that the outcome in terms of destruction of the waste containing them may be the same regardless of whether they are hazardous or not and the POPs controls apply but would like to know whether amendments will be made to hazardous waste legislation to align with these Stockholm Convention substances.

One respondent was reassured by the measures that have been proposed / put in place to reduce the environmental contamination by POPs. They noted that the problems faced are complex and that several socio-economic factors must be accounted for when considering which actions to take.

Government response

Outside the scope of this NIP, UK REACH requires companies that manufacture or place chemicals on the market in Great Britain to identify and manage the risks they pose. They have to demonstrate that they can be used safely and they must communicate risk management measures to their users throughout the supply chain. A few of these chemicals are subsequently found to be POPs but we will continue to work with the chemicals industry to improve identification of harmful chemicals before they are placed on the market.

With regard to POPs removal from wastewater treatment, the Chemicals Investigation Programme part 1 and 2 (CIP1 and CIP2) have found that some POPs are not removed by wastewater treatment. CIP3 is being undertaken now and is investigating contaminants in sewage sludge, for which results will be available for the next update of the NIP.

Effective waste management policies for POPs is key to minimising emissions of POPs to the environment, which is why we have supported and continue to support, industry and the enforcement authorities in research, planning and enforcement work. We note the comments of stakeholders and welcome opportunity to continue to engage with industry on this. Defra published a Waste Management Plan for England in January 2021.

[Waste Management Plan for England \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

The Defra and EA studies into POPs in soft furnishings have further developed our understanding of how this waste stream should be managed and as stated in the NIP, we will work with waste industry representatives to support the destruction of waste containing POPs above legal thresholds. We will also work with the re-use sector to understand the implications for them.

The Environment Act 2021 is taking forward our ambition to consider further extended producer requirement responsibilities, more sustainable goods through better recycling, repair and reuse. We also have an ambitious Resources and Waste Strategy that will be complemented by the Chemicals Strategy.

In response to the question on waste classification, POPs and Hazardous Waste are two different regimes. The POPs Regulations apply POPs controls to the management of any waste containing levels of POPs above legal limits. This is completely independent of its hazardous or non-hazardous classification and may apply equally to non-hazardous waste.

The waste classification and POPs classification systems are not completely aligned. The hazardous or non-hazardous status of the waste is determined using the system set out in the List of Wastes. For some types of waste, a minority, the classification is determined by consideration of the chemical composition and hazardous properties of the waste. Whilst the list does use some of the concentration limits for older POPs for this purpose, it does not use those for newer POPs like decaBDE.

There are no plans to add the newer POPs to the List of Waste, or to revise the classification procedure to apply the consideration of chemical composition to the classification of all types of waste. However, amendments to the POPs regulations in 2019 require us to introduce tracking of POPs waste using the same controls that apply to the tracking of hazardous waste.

Governments across the UK have committed to implementing and mandating the digital recording of waste movements, subject to consultation, and are committed to working with industry on the development of an electronic waste tracking system. The Environment Act 2021 gives us the powers across the UK to make regulations to establish such a system. We are aiming to deliver a service that is simple to use and provides value for all users. A consultation has been published, setting out proposals for such a system and it will run until April 2022. This will include tracking POPs waste, whether it is classified as hazardous or not; a requirement that was added to the POPs regulation when it was revised in 2019.

Information on ways to destroy POPs waste is provided by the Basel Convention with technical guidance, which is either general or specific to a substance.

[Technical Guidelines \(basel.int\)](https://www.basel.int/TechnicalGuidelines)

Defra attends, and contributes to, working group meetings on the updating of these guidelines. As mentioned in the NIP, Defra undertook a review of POPs destruction techniques, 'Methods for the Pre-Treatment and Destruction of Persistent Organic Pollutants' in 2020 (see page 32 of the NIP), and we will continue to update information on POPs waste management:

[Identify and dispose of waste containing persistent organic pollutants - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/identify-and-dispose-of-waste-containing-persistent-organic-pollutants)