Department
for Environment
Food & Rural Affairs

# Summary of responses

## Consultation on the update of the UK National Implementation Plan (2017) for the Stockholm Convention on Persistent Organic Pollutants

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# 1. Introduction

1.1 This document summarises the responses received for the consultation on the updated UK National Implementation Plan (NIP) for the Stockholm Convention on Persistent Organic Pollutants (POPs) 2017. The consultation[1] opened on 17 March 2017 and closed on 14 April 2017. The updated NIP outlined progress-to-date, proposed new actions to improve on previous NIPs (2007 and 2013) and to implement the Convention's requirements for four POPs that were added at the Conference of the Parties in 2013 and 2015.

1.2 The consultation was published on Citizen Space and views and comments on specific questions were sought. An e-mail invitation was sent to over 190 stakeholders, including consumer groups, non-governmental organisations and industry interests. In total six responses were received (four responses through Citizen Space online and two responses by e-mail) of which one asked to remain anonymous. One was a response co-ordinated by Wildlife and Countryside Link on behalf of a consortium. A list of organisations and individuals who responded to the consultation is provided in the Annex. The respondents' formal replies are available on request through Defra's Consultation's Coordinator consultation.coordinator@defra.gsi.gov.uk.

# 2. Overview of responses

2.1 There were a range of divergent responses and respondents highlighted a number of areas of interest where they believed further work or development would be beneficial. There was a proposal that any actions to reduce emissions further should be based on evidence that the substances still posed a risk. In contrast, other respondents suggested that the NIP should adopt a more precautionary approach and take action to reduce POPs further especially in the aquatic and marine environment.

2.2 One respondent suggested that further work could be carried out to understand better which source materials containing POPs, or containing constituent chemicals which formed these POPs upon combustion, were entering combustion processes. Once these are identified, targeted mitigating action could then be taken.

2.3 With respect to the emissions occurring from diffuse sources such as domestic waste, and open burning of agricultural waste, a suggestion was made that the disposal of domestic waste should be encouraged and facilitated via Local Authority facilities. Waste could then be incinerated under controlled conditions to destroy POPs. Another approach proposed was a targeted awareness campaign directed at the small number of farmers involved in open burning of agricultural waste.

2.4 As for recycling activities, the point was made that these should not be limited without conducting suitable scientific and contextual assessments on the risks posed by "perceived" hazards. There could be adverse consequences from ceasing recycling without the identification of a suitable 'safe' alternative to manage materials

[1] https://consult.defra.gov.uk/eu-environment/uk-nip-for-stockholm-convention-on-pops-2017/

containing POPs. One respondent suggested investigating a representative sample of recycled materials to determine if there was a problem and to quantify its scale.

2.5 There were mixed responses to the proposed approach to reduce POPs in the aquatic environment. One respondent noted that if control measures were proposed, their technical feasibility should be considered, as well as an identification of who should bear the cost of any process improvements. Others suggested that the draft NIP was too weak on proposals for reducing POPs in the aquatic environment.

2.6 The importance of reducing emissions of PCBs further was stressed. In particular, some considered that new action needed to be taken on other future potential open sources of PCB emissions such as joint sealants previously used in the housing and office building industry.

# 3. Background, questions and consultees' responses

3.1 The UK's multi-vector POPs emission inventories provide emission estimates to air, land, water, residue and product for those chemicals listed in Annex C of the Stockholm Convention[2]. Between 1990 – 2014, the inventories showed that the annual emission rates of dioxins and furans (PCDD/Fs), polychlorinated biphenyls (PCBs) and hexachlorobenzene (HCB) in the UK have declined significantly.

### Q1. As the trend shows that the emissions are declining and levelling off for the above chemicals, are there any further measures that can be taken by the UK government to facilitate further reduction in these emissions?

3.1.1. A couple of respondents considered that past measures had been very successful in reducing the release of listed POPs since 1990. Whilst one believed that no further proportionate measures could be taken and the remaining sources were beyond conventional regulatory tools, others took the view that the NIP should be more ambitious especially given the persistence of POPs and their ability travel long distances. Some argued that more emphasis should be placed on action rather than monitoring.

3.1.2. There were also arguments that any further 'direct' action would be very difficult to enforce and be both draconian and disproportionate although there was support for more reasonable and proportionate steps to be taken to limit releases. The

[2] Under the Stockholm Convention five emission vectors are identified, air, land, water, residue and product. For the sake of clarity, an uncontrolled release to land (e.g. accidental house fires) is classified as a 'land' emission vector. A controlled release to land (e.g. landfill) is classified as a 'residue' emission vector. For those goods contaminated with POPs placed to market this constitutes a 'product' emission vector. Where many of the POPs are listed in Annex A (banned), the intentional placing on the market of POPs containing goods is less likely. However trace contamination through recycled goods or cross-contamination of products may be possible.

effectiveness of UK measures compared to other signatories, or the relative quantity of recorded emissions compared to other signatories, was suggested as being helpful.

3.1.3 Another respondent said that the provision of treatment processes at facilities such as landfill sites which were shown to have emissions to water should be considered. Furthermore, evidential information was required to show that these substances presented a risk, and justify the need for action to reduce them further.

3.2 An assessment of the emissions of pentachlorobenzene (PCBz) for the period 2010 to 2014 has shown an increase in the UK. This increase has possibly been a result of small-scale combustion processes at diffuse sources such as ash from municipal solid waste (MSW) incineration and not industrial sources as was the case in the 1990s.

## Q2. Is there any way the government could improve the disposal of contaminated ash from diffuse combustion sources?

3.2.1 Most respondents indicated that regulation of such diffuse sources is difficult, but that even though the relative importance of emissions from MSW incineration was not clear, improved incineration management might be of benefit. Sheffield University was highlighted as having a specialist waste incineration centre, with technology available to destroy POPs in ash from waste incinerators. Further work could be carried out to understand better which source materials entering these processes carried these POPs, or the constituent chemicals which form these POPs upon combustion. Once identified, better education and enforcement to prevent those materials being incinerated should help to mitigate emissions.

3.2.2. One respondent queried whether the particulate limits on combustion in the Medium Combustion Plant Directive could address this issue. They also noted that incineration permits should already address particulate emissions where a risk has been identified.

3.3 The emissions of POPs to the environment are regulated only for certain consumer appliances and goods such as electronic equipment.

## Q3. How could we measure emissions of POPs, e.g. brominated flame retardants (BFRs) from less regulated consumer products?

## Q4. What opportunities might there be to reduce/control such emissions?

## Q5. In section 5.3.2 of the updated NIP the government sets out its proposals for work in order to gain information to address legacy issues of POPs. Are there any other ways to tackle this issue?

3.3.1 In response to **question 3**, it was suggested that a Waste Electronic and Electronic Equipment (WEEE) type approach could be considered for these other waste streams in terms of the risk and likelihood of emissions of them causing environmental harm. Another respondent suggested that these contributions could be assessed via modelling techniques, as only some vector routes would be amenable to measurement.

3.3.2 Two respondents answered **question 4**. The first stated that if a significant risk was demonstrated, then the costs and benefits and technical feasibility of appropriate treatment at receiving waste installations should be investigated. In their view equal consideration should be given to ensuring industries source less problematic materials for future use. The other respondent said that separation at source and at the point of disposal (i.e. separate waste disposal/collection streams) could help. They noted that product labelling on electrical equipment clearly stated that at end-of-life/disposal, such items should not be included in general household rubbish and must be disposed of appropriately. If POP-contaminated material (such as textiles with FRs) were required to have similar labelling this could help to prevent cross-contamination of waste streams.

3.3.3 On **question 5**, leachate monitoring was proposed as being helpful in identifying the scale of possible contamination but it was unclear what remediation could be expected if landfill was shown to be a significant contributor. Others said that the NIP seemed to suggest little new action to tackle remaining sources of POPs, and proposed dealing with legacy issues through various assessments. The NIP should then commit to acting on the conclusions of those assessments. In addition, they noted that the implementation schedule (Table 11 in the consultation) gave no indication around measures to reduce current emissions of POPs further. They argued that if there were measures such as best practice guidelines being developed, the NIP should include these in the implementation schedule. In their view the proposed NIP was inadequate in relying on WFD and Marine Strategy Framework Directive actions for those POPs where emissions have plateaued.

3.4 Whilst the recycling of materials such as plastics is to be encouraged and efforts to improve recycling rates should be made, it is important to recognise that some POPs (e.g. brominated flame retardants) will be present in the recycled materials.

## Q6. Is this a potentially significant problem? If so, what possible measures could be taken, to help reduce the impact on the environment?

3.4.1 It was suggested that the first step should be to investigate a representative sample of recycled materials to determine if there was a problem and its extent. There was some concern that recycling activities should not be limited without conducting suitable scientific and contextual assessments on the risks posed by perceived hazards. A detrimental effect could be produced by ceasing recycling without the identification of suitable ‘safe’ alternatives.

3.5 Small scale combustion such as domestic and agricultural waste burning continues to be a source of emissions of dioxins and furans (PCDD/Fs). Local authority websites already provide very good information to advise the pubic on best practice, but the problem remains.

## Q7. Are there any other cost effective options that could be considered to improve knowledge and raise awareness about the consequences of domestic and agricultural waste burning?

3.5.1 It was noted that the relative contributions from domestic and agricultural sources were not obvious. One respondent suggested that measures to encourage and facilitate the disposal of domestic waste via Local Authority facilities should be promoted as waste could be incinerated under controlled conditions minimising POPs emissions. Another said that awareness campaigns aimed at occasional domestic burning were unlikely to be effective although a targeted campaign to reach the smaller number of farmers who practice waste burning should be more effective.

3.6 Under the 2007 UK National Implementation Plan, the Toxic Organic Micro Pollutants (TOMPs) air monitoring programme was set up to measure dioxins and furans (PCDD/Fs), polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs) in ambient air and the data produced showed a continuing decline in the emissions of these POPs to air, land and water over a period of 20 years. The current POPs measured under the TOMPs network are PCDD/Fs, PCBs and polybrominated diphenylethers (PBDEs).

## Q8. Should our monitoring activities be optimised to reduce sampling frequency for legacy POPs to allow more focus on recently listed POPs?

## Q9. Are there any recently listed POPs that should be prioritised in a re-focussed Toxic Organic Micropollutants (TOMPS) programme?

3.6.1 There was an overall positive response to **question 8** welcoming the development of passive sampling systems and associated accreditation whilst noting that it may be preferable to risk-assess each POP individually, and to identify sample points based on risk. There were also views that the government should also make sure that adequate monitoring is undertaken to identify bioaccumulation and combination effects of chemicals, in order to understand the full impact of chemicals on the environment. Monitoring of sub-lethal impacts such as those affecting reproduction and reduced fecundity should also be taken into account.

3.6.2 There was no direct response to **question 9** although raising public awareness of the impact of pharmaceuticals and chemicals in household, garden and personal care products on the environment could be helpful in reducing inappropriate disposal, for example, flushing products down the domestic drains.

3.7 The management of POPs entering the aquatic environment is a priority concern and the government proposes focusing its efforts on improving estimates of emissions and furthering our understanding of the concentration levels of POPs that are entering surface waters and the marine environment.

## Q10. Do you agree with this approach? Are there any other measures that the government could consider to help reduce POPs entering the aquatic environment?

3.7.1 There was a degree of agreement with the government's approach although one respondent said that if, as a consequence, control measures were proposed, their technical feasibility should be considered, as well as the question of who would bear the cost of any process improvements. The 'polluter pays' principle should be considered otherwise costs could fall disproportionately on water company customers. Carbon, energy and other environmental costs should also be taken into account. Where possible, control-at-source would be an appropriate place to start with control measures to prevent the POPs from ever reaching sewage treatment works. They argued that this would be best led by the government to address the scale of the issue appropriately and consistently across all parts of the UK.

3.7.2 A catchment-based approach with corrective interventions based on source apportionment and risk-based & proportionate criteria received some support. One respondent viewed that where specific actions are recommended for the water industry, non-compliance with Environmental Quality Standards (EQS) should be addressed only where there is a clear negative ecological response. Where no such response is observed, monitoring ecological indicators should continue with warning and action limits identified. They also argued that the presence of POPs in sludge should not limit its use unless the risk and context was understood and supported by scientific evidence.

3.7.3 There was some concern that NIP was not strong enough in its proposals and criticism that the NIP was trying to resolve data discrepancies before taking action. The respondents argued that government should be taking a more precautionary approach and proposing measures to reduce POPs that exceed EQS already such as PFOS. Some respondents were uneasy that no additional action outside of the Water Framework Directive (WFD) and Marine Strategy Framework Directive (MSFD) was being planned and as a consequence there would be minimal improvement in reducing POPs in the marine environment. Natural wastewater treatment solutions were suggested as a means for attenuating emissions of priority substances and there was a call for more innovation around treatment solutions building on promising results from wetlands and reed beds etc. in attenuating the presence of certain priority substances.

3.8 The entry of PCBs into the environment including the aquatic environment is a concern despite emissions in 2014 having declined by 97% since 1990.

## Q11. What can government do further to help eradicate emissions from these sources?

3.8.1 This was acknowledged by respondents as a difficult area to address. One respondent welcomed the work done to date to reduce PCBs in the environment but highlighted the levelling out of this decline between 2010 and 2014, and that adverse ecotoxicological effects continued to be observed in marine wildlife. Nearly a tonne of PCBs continues to be released into the environment every year, and more action to lower this could be taken.

3.8.2 There was a call for more work on reducing their abundance from a range of sources, as well as understanding their behaviour in different environments. There was

a suggestion of a need to accurately assess how much of the PCBs load in UK waters comes from old equipment (capacitors and transformers) and open sources of pollution (old landfills, estuarine sediments). One respondent also said future potential sources of PCBs should be considered in more depth such as joint sealants in tower blocks which is mitigated through effective regulation, particularly in the demolition of buildings containing them, in Switzerland, Norway and Sweden).

# 4. Government response and next steps

After consideration of the consultation responses and further policy developments we have amended the National Implementation Plan. The final version will be published on the Stockholm Convention website at http://chm.pops.int/Implementation/NationalImplementationPlans/NIPTransmission/tabid/253/Default.aspx.

In response to the practical issues in dealing with legacy problems of recently banned or restricted POPs we will be investigating the best methods to work with industry to find practical solutions. There is a need to understand common elements for legacy POPs issues across sectors and determine how threshold levels, when set, impact on resource efficiency, recycling targets and waste streams. We recognise that post-EU Exit there will be further opportunities to set our own national thresholds to enable the UK to achieve better its policy outcomes when implementing the Stockholm Convention.

We have also noted the interest in the effectiveness of UK measures compared to other signatories and will ask the Stockholm Convention Secretariat to consider generating this sort of comparative data and sharing best practice.

4.1 Government response to specific comments raised in the consultation for individual questions.

Q1. We will explore the viability of other potential control measures that could be taken in order to help drive down emissions further. We will be looking at what role current/historical landfill sites play in contributing to emissions of certain POPs. Following this a cost-benefit / impact analysis will be required to assess the significance of such sources and what action can be delivered in a cost efficient way to limit and manage emissions.

Q2. We will work with departmental waste teams, specialists and the waste incineration industry to assess the viability of proposed options. It is important that further work is performed to fully characterise the POPs content of ash from combustion processes such as municipal solid waste incineration. Once this information is available then decisions can be made on how best to manage the disposal of such waste material taking into account the costs involved in managing the disposal practices.

Q3. We will consider this issue more thoroughly in partnership with the Environment Agency and industry.

Q4. We will continue to consider cost effective and proportionate options for improving understanding of emissions from consumer products. One option is identifying how best to promote the use of safe alternative, non-POP substances. Another includes how to separate wastes known to contain POPs from other waste streams to enable

appropriate handling. We are also liaising closely with BEIS in their review of the Furniture and Furnishings (Fire) (Safety) Regulations 1988.

Q5. We have included a new proposal in the NIP to consider the extent to which sealants applied in the UK building construction industry contain PCBs. It is known that sealants used in other European countries prior to 1980s were manufactured with PCBs.

Q6. We have already instigated research to understand POPs in waste recycling streams from consumer products. It is the government intention to build on the findings of these initial assessments to further understand and scope out the range of POPs containing consumer products with a view to working with the waste recycling industry to help prevent POPs being present in recycled materials.

Q7. The Environment Agency will work with its counterparts in the devolved administrations to provide further information to stakeholders and appropriate media outlets to raise awareness of open burning of waste in the agriculture sector.

Q8. We will continue to focus efforts on monitoring of more recently listed POPs. Efforts will continue to develop and maintain the existing emission inventories to provide a better understanding of POPs emissions in the UK. The Environment Agency is currently undertaking a strategic review of monitoring in the UK where careful consideration will be given to how best to acquire environmental data.

Q9. The UK government and the devolved administrations will keep evidence of emerging POPs under review, and will take further action where necessary.

Q10. Legacy POPs in surface waters and the marine environment present us with a difficult management challenge and we are still observing the impacts after these POPs have been regulated and/or banned, because they take a long time to disappear. There is little that can practically be done about POPs that have already reached the marine environment. The Defra Chief Scientific Adviser has publicly stated that PCBs “take a very long time to disappear and when they do, that will be by falling down to the sediment at the bottom of the sea, so of course if that sediment is disturbed, it will take even longer for them to fall down again.” The management challenge we now face is tackling the legacy of POPs contaminated material still present in the terrestrial environment and subsequently entering the aquatic environment. The appropriate disposal of existing material containing POPs is important to prevent it from entering rivers and estuaries, and eventually the marine environment. We support the ongoing UK Water Industry Research (UKWIR) Chemical Investigations Programme (CIP2) and await the outcome of this work in 2021. We are always open to new evidence and solutions to address this problem.

# Annex: List of respondents

## Company/organisation

Anglian Water Services

British Plastics Federation

Non-Ferrous Alliance

Thames Water Utilities Ltd

Wildlife & Countryside Link (Consortium)[3]

[3] Amphibian and Reptile Conservation, Angling Trust, Buglife, Environmental Investigations Agency, Friends of the Earth England, Humane Society International – UK, International Fund for Animal Welfare, ORCA, Salmon and Trout Conservation, The Wildlife Trusts, Wildfowl and Wetlands Trust, ZSL.