



Opportunities for pollution prevention: long-term goals and quick wins

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Summary

The UK chemical strategy provides a unique opportunity to deliver safer products and a healthier environment, whilst simultaneously securing the UK's position as a global leader in green chemistry and sustainable innovation. By committing to the key steps and processes that will get us there, this strategy can fulfil the promises that political leaders have made to the UK public, meet the commitments laid out within the 25-year Environment Plan, and drive the UK towards a modern, sustainable, and secure economy.

The following document sets out the case for an ambitious chemical strategy, supported by public opinion and industry statements. We attach Fidra's 10 key 'Principles for Sound Chemical Management' (appendix 1), and based on Fidra's areas of expertise, propose the policy commitments described below as achievable steps towards these overarching goals.

Key policy commitments recommended for inclusion in UK chemical strategy:

- Commitment to phase-out all non-essential uses of per- and poly-fluorinated alkyl substances by 2030, with a clear timeframe of intermediate policies to address ongoing use where suitable alternatives are already available (e.g. food packaging, fire-fighting foams, cosmetics, non-protective clothing).
- Implement a ban on the manufacture and sale of food packaging containing intentionally added PFAS by 2022.
- Implement a ban on the use of *all* bisphenols in thermal papers, including till receipts by 2022.
- Revise legislation, regulation and enforcement of chemicals used as treatments in livestock farming including aquaculture, to ensure that restricted or banned chemicals cannot be applied through alternative paths, i.e. as disinfectant.
- Ensure environmental quality standards are statutory for all chemical applications in livestock farming, including aquaculture and especially for formaldehyde, methanol and hydrogen peroxide.
- Require transparency in livestock farming industries, including aquaculture, through publicly accessible databases or 'sustainability dashboards', including information on chemical use and frequency of application.
- Require supply chain transparency and traceability through full chemical disclosure, development of National Materials Datahub and 'smart labelling' of products.
- Ensure that the health impacts from fire toxicity and chronic chemical exposure are included in the remit for the revision of 'The Furniture and Furnishings (Fire) (Safety) Regulations 1988', alongside fire safety considerations.
- Commit to a minimum requirement to keep pace with EU chemical restrictions, for a limited time period, allowing UK regulatory processes to be developed and implemented whilst maintaining ongoing progress in chemical safety.

Creating a cleaner environment for a healthier future

Right now, the UK has a severe chemical pollution problem. All monitored rivers and lakes in England are polluted, the number of water pollution incidents is rising (from fewer than 6,500 in 2015 to almost 7,600 in 2019), and with climate and land-use change resulting in greater levels of flooding and storm overflow¹, the amount of untreated water reaching our environment is increasing.

Global chemical production has increased fifty-fold since 1950 and is set to treble again by 2050. In 2019, 75% of chemicals produced across the EU were classified as hazardous to health and/or the environment², and without intervention, the volume of hazardous chemicals will continue to increase proportionately with production.

The latest five-yearly report on the operation of REACH and the EU's Classification, Labelling and Packaging (CLP) Regulation showed 18% of consumer products contained illegal amounts of restricted chemicals, with 20% of children's toys containing banned phthalates,

showing that current methodologies are failing to protect consumers^{3,4}. And with 89% of suppliers not passing chemical information down the supply chain, and 71% of imported products from outside the EU having incorrect labels^{3,4}, it is almost impossible for consumers to make informed purchasing decisions, or for UK companies to guarantee the safety of their products.

18% of consumer products contain illegal amounts of restricted chemicals

Chemical pollution is impacting our health. The World Health Organisation concluded the disease burden preventable through sound management and reduction of chemicals in the environment was 1.6 million lives and 45 million disability-adjusted life years (DALYs), in 2016⁵. They also estimated that risks related to selected chemicals and chemical mixtures in the home, community or workplace caused 1.3 million deaths globally per annum from noncommunicable diseases, mainly cardiovascular diseases, chronic obstructive pulmonary disease and cancers⁵.

Chemical pollution is fuelling biodiversity loss^{6,7}, adding additional burden to populations already under threat from climate and land-use change. A third of UK pollinators are now in decline⁸, and since 1970, the global abundance of vertebrates has declined by 68%, freshwater species by 84%⁹. With 75% of crop species, 35% of global crop production and 88% of flowering plant species dependent on insect pollinators¹⁰⁻¹², this is an environmental crisis with far-reaching societal impacts that we cannot afford to ignore.

Chemical pollution is intrinsically linked to the climate crisis and the impacts that it has on both humans and wildlife. Despite major reductions in direct energy use over the last 30 years, the chemical industry remains a major contributor to UK carbon emissions and a global leader in energy consumption¹³. Chemical exposure can reduce nature's resilience to the climate crisis through the impact of multiple stressors, or through biological changes that affect the body's uptake and elimination of harmful substances¹⁴. Whilst, conversely, climate change can also impact the sensitivity and susceptibility of organisms to chemical exposures, for example, through the release of previously sequestered persistent organic pollutants (POPs) or runoff related changes to pollutant pathways¹⁴.

The impacts of chemical pollution are unevenly distributed across society, and across the globe. Poorer countries and economic regions are more likely to be negatively impacted by exposure to environmental health hazards, and within countries, exposure to chemical pollutants can be linked to socioeconomic group¹⁵. Women are impacted more by exposure to hazardous chemicals than men, and are often underrepresented in effects research¹⁶. And, despite widespread recognition that children and young infants are highly sensitive to the developmental impacts of chemicals, they continue to be disproportionately exposed to harmful substances within our homes¹⁷.

Past chemical management has failed to protect our environment. Many of the UK's historic landfill sites are unlined. There are currently 4,781 historic landfill sites across England that lie within areas designated as flood zone 3, and more than 1,200 that are at risk of coastal erosion and storm surges¹⁸. These landfills can contain chemical waste, commercial waste, residential waste or a mixture of all three. All present a unique and growing risk of pollution from substances now banned or restricted from ongoing use, clearly demonstrating chemical management that has failed to consider the long-term consequences of unknown chemical risk, to enforce regulations where they existed, or to contain chemicals where risk was identified.

However, chemicals are also fundamental to both modern society and our economy. Chemical innovation has the potential to tackle many large-scale societal problems, from the development of modern medicines to climate change mitigation and improved product recyclability. Improving the UK's approach to chemical management and regulation is also key to implementing some of the Government's existing UK targets for both economic growth and the environment (Table 1).

Table 1. Chemical strategy integration with existing UK targets

A strong and ambitious chemical strategy is essential to delivering the following targets:	
From 'Build Back Better; our plan for growth' ¹⁹	From 'A Green Future: Our 25 Year Plan to Improve the Environment' ²⁰
<ul style="list-style-type: none"> • being the first generation to leave the natural environment in a better condition than we found it; • a regulatory system built in a way that supports innovation; • driving the international competitiveness of the UK's high-growth, innovative businesses; • regulations that support science and innovation, enabling business to flourish, and boost growth whilst maintaining our high standards; • the UK's reputation as a trusted regulatory leader; and • global action on climate change and health resilience. 	<ul style="list-style-type: none"> • chemicals that are safely used and managed, and levels of harmful chemicals entering the environment (including through agriculture) that are significantly reduced; • waste is minimised, materials are reused as much as we can and materials at the end of their life are managed to minimise the impact on the environment; • clean and plentiful water; • clean air; • all possible action to mitigate climate change, while adapting to reduce its impact; • a growing and resilient network of land, water and sea that is richer in plants and wildlife; and • an improved approach to soil management.

In the below sections, we highlight the economic benefits of improved chemical regulation, provide evidence of industry momentum towards environmental sustainability, and show

public support for stronger protections from chemical risk. Fidra strongly believe that by using this opportunity to redefine our chemical future, and by committing to the key steps and processes that will get us there, **the UK Chemical strategy has the opportunity to fulfil the promises that political leaders have made to the UK public, meet the commitments laid out within the environment plan, whilst also driving the UK towards a modern, sustainable and secure economy.**

Building a regulatory system for a thriving economy

In his introduction to the UK's recent strategy for growth, Build Back Better, the Chancellor of the Exchequer clearly states an ambition to fulfil this government's commitment to be the first generation to leave the natural environment in a better condition than we found it, recognising the intrinsic link between economic growth and environmental protections. Addressing key environmental issues through **this chemical strategy can both protect the natural environment and the ecosystem services it provides, but also drive growth and innovation, opening new markets to the UK by exploiting the global trend towards greater sustainability.**

2020 saw a 14% increase in the number of companies disclosing environmental impacts through the CDP platform²¹, demonstrating an increase in recognition and engagement with environmental issues. US sustainable investment strategies have increased from \$12.0 trillion in 2018 to \$17.1 trillion in 2020, an increase of 42%²². The value of global assets including environmental, social and governance data in decision-making almost doubled from 2016 to 2020²³.

With consumers increasingly favouring brands that advocate sustainability, and investors pushing for positive change, **companies are under increasing pressure to ensure their own environmental credentials meet the highest possible standards**; safe and effective chemical management is a key part of meeting these high standards. Implementing an ambitious UK chemical strategy, which puts health and environmental protections as its top priorities, is therefore vital in ensuring the UK presents an investment landscape that meets the needs of modern business, shaping a sustainable and secure economy for the future.

Early implementation of ambitious chemical policy can drive export opportunities

The UK's agile and reactive post-Brexit policy landscape presents a unique opportunity to capitalise on the growing trend for sustainable design and green innovation. **Implementing ambitious chemical legislation ahead of other states will drive innovation within UK industries, getting a head start on new and emerging global markets.**

The UK has already applied this model to low-carbon technologies. Setting clear Net Zero targets and pushing for rapid decarbonisation of the domestic economy has driven UK technological innovation in the 'low carbon sector'²⁴. This not only created new high value jobs, industries and companies within the UK, but also opened export opportunities for goods and services around the world. For example, in 2017, one in five electric vehicles on European roads was made in the UK²⁴.

Right now, the UK has numerous businesses developing innovative alternatives to unsustainable food packaging materials. However, progress is hindered by market prices that don't accurately reflect the full environment and human health costs of the packaging's chemical content. **By creating clear policy that restricts the use of harmful substances such as persistent chemicals, PFAS,** we can protect against environmental contamination, provide a level playing field for those companies taking proactive measures to improve their chemical footprint, and simultaneously **drive and support British innovation into new materials under increasing global demand.**

The Government's economic strategy¹⁹, Build Back Better: our plan for growth, clearly acknowledges that the UK's global leadership derives strength from its ambitious positions on the issues of the day. This chemical strategy therefore offers an important opportunity to define post-Brexit UK as a leader in green and sustainable innovation and environmental ambition, and to reap the economic benefits of a progressive and environmentally focussed regulatory framework.

Building strong chemical policy for an effective circular economy

Harmful chemicals create a barrier to the circular economy by limiting the reuse capacity of products, creating a chemical exposure risk for workers in the recycling sector and undermining confidence in the safety of secondary materials. **By promoting products that are safe by design and free from hazardous chemicals, we open the possibility for a much wider range of subsequent product uses and improve the market value of chemical-free recycled materials.**

PFAS are currently added in high concentrations to food packaging marketed as compostable and sustainable alternatives to plastic²⁵. When composted, the material is either added to the land, providing a direct pathway for PFAS into crops and the wider environment, or the entire batch of compost is considered contaminated and destroyed. **To create an effective system where valuable organic matter is captured and reused, chemical content must be a key consideration at product design.** Companies must be held responsible for the environmental impact of product disposal, standards must ensure that material marketed as compostable meets stringent chemical criteria, and the UK Government must move to phase-out all PFAS from unnecessary uses such as food packaging (see Appendix 1: principle 2).

Bisphenols are unnecessarily added to till receipts, contaminating and limiting recycling streams, and undermining the circular economy.

Public confidence is key to effective product circularity. Therefore, **there should be no compromise in the safety or quality of recycled materials.** Under the current system, which allows the use of hazardous chemicals and fails to enforce waste stream regulations, product safety cannot be guaranteed. Our risk-based approach to chemical management creates a system where **hazardous chemicals that are approved for use in one product, can be later identified in the recycled content of secondary products.** These secondary products may be associated with a much greater risk of ingestion and exposure of chemical content. For example, flame retardants approved for use in electronics have

been found in cutlery and kitchen utensils made from recycled plastic²⁶ and high levels of endocrine disrupting phthalates have been found in children's toys²⁷.

Bisphenols are unnecessarily added to thermal papers and till receipts as a result of incomplete legislation which allows regrettable substitution from bisphenol A, to other bisphenols with similar hazard profiles. These contaminate paper recycling streams and agricultural sludge and are subsequently found in food packaging²⁸ and food chains²⁹, increasing human exposure and undermining the safety of the circular economy. **Restricting all bisphenols in thermal papers, something many companies have already done voluntarily, could immediately improve the quality of paper recyclate and the value of secondary materials** (see Appendix 1: principle 3).

Open and transparent substance disclosure that allows materials and chemicals to be traced through-out the full supply chain and product life-span will ensure a system that is reactive to emerging risks. When new information on chemical risk emerges, products can be quickly identified, and materials can be dealt with appropriately to ensure hazardous substances do not become locked into the circular economy.

It is estimated that 8 million mattresses are disposed of across the UK every year, with less than 20% currently recycled³⁰. Chemical flame retardants applied to mattress foam can comprise approximately 18% of the item's weight, equating to over 4 kg of chemical flame retardants in a 30 kg foam mattress³¹. As a long-lived item, there's significant concern that many of the mattresses currently in use or being sent for recycling may contain chemicals now banned under the Stockholm Convention on Persistent Organic Pollutants (e.g. deca-BDE). This puts recyclers at risk of exposure and creates a legal barrier to the resale of the recycled materials. **Fidra strongly advocates policy that ensures full chemical disclosure throughout supply chains, and the application of smart and reactive labelling system that provides long-term transparency in chemical content** (see Appendix 1: principle 6). In doing this, we can avoid future barriers to recycling, promoting long-term and effective resource use, and provide a mechanism to ensure compliance with international legal requirements such as our commitment to the Stockholm Convention.

Cutting the cost of chemical contamination

Alongside key opportunities for economic growth, this chemical strategy also provides an important mechanism for cutting the costs associated with environmental contamination, both now and in the future. Contamination of our waterways and marine environment disrupts both the natural balance of these ecosystems and also the ecosystem services they provide, from the physical and mental benefits associated with blue spaces and nature experience³²⁻³⁴, to food production and tourism economies. **Implementing strong chemical legislation that protects our environment therefore creates revenue and protects long-term economic potential.** For example, it is estimated that revenue from commercial fishing in the EU increased by between €20-160 million as a consequence of regulation preventing environmental contamination from just one harmful substance, tributyltin (TBT)³⁵.

Contaminated waterways can also severely impact tourism economies, with water quality and 'beach cleanliness' repeatedly cited in the top three factors influencing beach choice decisions²³. Pre-covid, coastal areas of Great Britain generated £17.1 billion in tourism spend, supporting 285,000 tourism related jobs³⁶. These benefits at both national and

community scale are increasingly being put at risk due to poor water quality. However, **a clean environment can drive economic growth in rural and coastal areas**. For example, one study estimated that achieving 'good ecological status' across 72% of Scottish lochs would translate to economic benefits worth £5.7m per year³⁷.

Contamination of land results in reduced site value and productivity and can incur significant costs of remediation. For example, more than £52 million of public money was granted by UK regulators for remediation of contaminated land between 2000 and 2013³⁸. Despite the 'polluter pays principle', a 2016 report found that at 80% of sites considered, the responsibility for remediation fell to either the local council or the Environment Agency³⁸. **Implementing legislation today that prevents the contaminated land of tomorrow, will achieve significant savings in public spending.**

The annual health-related cost of PFAS exposure across the EEA is estimated at between €52-84 billion.

There are also socioeconomic costs linked to the health impacts of chemical exposure, including burdens on healthcare services, reduced economic productivity and lost utility through premature death and suffering³⁹ (see examples detailed in Table 2). Many of these impacts can be avoided through preventative approaches to environmental health. For example, a report produced for the Nordic Council of Ministries in 2019 considered the cost of inaction across EEA countries linked to exposure to per- and poly-fluorinated alkyl substances (PFAS)⁴⁰. They estimated annual health-related costs of between €52-84 billion, and non-health related costs in the order of €10-20 billion (excluding costs associated with ecological damage).

Table 2. Examples of economic savings as a consequence of reduced health impacts of chemical pollution following regulatory action.

Estimated socioeconomic savings from chemical regulation

- The economic benefit of reduced air pollution over a 60-year period, has been estimated at £34 billion across England and Wales⁴¹
- The cost avoided due to reduced benzene exposure from 1998-2008 is estimated as €60 million per year across the EU³⁵.
- Reduced asthma levels attributable to exposure to hazardous chemicals from 2004-2013 are estimated to be €250 million per year³⁵.
- The avoided cost of male infertility resulting from reduced exposure to dibutyl phthalate from 1996-2008, linked to the cost of Assisted Reproductive Technology (ART) treatments, is estimated as €6.7 billion³⁵.

UK industry supports stronger chemical legislation for a healthier environment.

With growing consumer demand for sustainable products and responsible business practices, **UK industry is increasingly taking the lead in driving positive environmental change**. For example, Fidra published a report, 'Forever Chemicals in the Food Aisle', in February 2020²⁵ highlighting the widespread use of PFAS in UK food packaging. Since then, numerous UK retailers have put considerable time and resource into understanding their own PFAS use, with 5 out of 10 major UK supermarkets making efforts to reduce or remove PFAS from own-brand food packaging⁴². Two major UK retailers are aiming to eliminate intentionally added PFAS from own brand food packaging by 2022. UK paper and board

suppliers are increasingly aware of PFAS in their products and actively engaged in developing and promoting PFAS-free materials^{43,44}. Meanwhile, the list of global food brands committed to eliminating PFAS from food packaging continues to grow⁴⁵. This demonstrates both industry's willingness to change, and the feasibility of eliminating this unnecessary source of chemical pollution.

However, voluntary action from UK retailers is not enough. Following significant pressure from plastic-free campaigns and initiatives, supermarket packaging from own-brand goods decreased by up to 29.2% between 2017-2019. Over this same period, the plastic footprint of branded products, where public pressure is less influential, increased by more than 5%⁴⁶. With branded goods making up 40-60% of some supermarket's sales, action to truly change food packaging sold within the UK market must go beyond the supermarket's immediate scope of influence.

UK legislation banning the use of PFAS in food packaging is therefore urgently needed to both support the companies already taking action, and to ensure a consistent approach to high environmental standards.

Following the EU-wide ban on BPA in thermal papers in January 2020, Fidra have been working closely with UK retailers to promote bisphenol-free receipts, avoiding regrettable substitution to other chemicals within the bisphenols group. As of July 2021, 14 retailers have confirmed their use of bisphenol-free thermal receipt paper, with two more in the phase-out process⁴⁷. Fidra have also collected statements from major UK retailers including, Waitrose, Sainsbury's, Co-op, McDonalds and Pizza Hut, regarding their primary motivations for going beyond the current single chemical legislation (Table 3). These responses clearly demonstrate both a desire to improve environmental and human health protections, but also recognises the **economic benefits of a group-based approach in future-proofing against further legislation.**

Table 3. Response to retailer questions regarding bisphenol use in thermal receipts, collected by Fidra via Survey-Monkey questionnaire, June-July 2021.

Main motivations for removing all bisphenols from receipts (beyond legal requirements)

- Concern over the human health impacts of bisphenols
- Concern over the environmental impacts of bisphenols
- Futureproofing against the potential introduction of further legislation on alternative bisphenols (e.g. BPS)
- Public pressure for bisphenol-free alternatives

When asked about barriers to change, respondents focussed on the availability of alternatives, cost and chemical transparency from suppliers. **These barriers can all be addressed with legislative action that bans the use of bisphenols in till receipts, thereby promoting economies of scale and clarity in chemical content.**

“Legislation in the right area tends to force manufacturers to solve problems they otherwise might not, it also provides a level playing field for purchasing organisations and removes any barriers around commercial competitiveness.” Steve Packer, Director, Pizza Hut Restaurants.

When asked more generally about the benefits of group-based approaches to chemical legislation, retailers again highlighted both health and environmental concerns as well as costs associated with regrettable substitution and future legislation change (Table 4).

Group-based regulation was seen to provide long-term clarity on chemical safety, suggesting the preference for a precautionary rather than reactive approach to chemical management (see Appendix 1: principle 3).

Table 4. Response to retailer questions regarding group-based legislation, collected by Fidra via Survey-Monkey questionnaire, June-July 2021.

Benefits of taking a chemical group-based approach to legislation

- Minimises the amount of legislation and change to manage
- Reduces the cost of potential regrettable substitution
- Reduces risk of reputational damage from potential regrettable substitution
- Provides longer-term clarity on what chemicals are/are not considered as safe for use
- Provides better protection for health
- Provides better protection for environment

Retailers also consistently highlighted group-based legislation and greater transparency of chemical content from suppliers, as important mechanisms to simplify chemical management at company-level.

“We are obliged to rely on the ethical practices of the chemical suppliers we use. We source reputedly to manage risk but in reality know very little about their approach.” Penny Manuel, Managing Director, SOHO Coffee Shops Ltd.

Fidra encourages and supports the voluntary commitments of major retailers to reduce and remove harmful chemicals from consumer products. However, it is also clear that **comprehensive chemical legislation is vital to support smaller UK businesses that have neither the expertise to make informed choices, nor the influence to demand change across their supply chains.**

The UK public supports pollution prevention.

UK consumers are increasingly driven by product sustainability⁴⁸, and ‘concern for the environment’ is higher than ever before⁴⁹.

- In 2019, more than a quarter of Britons considered the environment (27%) in their top three issues facing the country, behind only health (32%) and Brexit (67%)⁴⁹.
- In the 2020 Eurobarometer study, 68% of UK participants considered protecting the environment ‘very important’ to them personally⁵⁰.

Environmental concern and action on sustainability is particularly important across the 18–24 age group. This suggests a trend that will continue to increase, with a growing proportion of national wealth held by individuals with strong environmental ambitions.

- 45% of 18–24 year olds cited environmental issues as one of the nation’s most pressing concerns⁴⁹.

- 50% of 18-24 year olds have reduced how much they buy in response to ethical and sustainability concerns⁴⁸.
- 45% of 18-24 year olds have stopped using particular brands based on ethical and sustainability concerns⁴⁸.

Public concern over the impact of chemicals is also high, with widespread support for strong chemical regulation to protect health and the environment.

- 85% of UK participants in the 2020 Eurobarometer study are worried about the impact of chemicals present in everyday products on their health⁵⁰.
- 93% of UK participants in the 2020 Eurobarometer study are worried about the impact of chemicals present in everyday products on the environment⁵⁰.
- A 2017 survey found that 84% of Remain and 83% of Leave voters supported strong regulation of chemicals⁵¹.

Fidra's recent petition asking UK supermarkets to remove per- and poly fluorinated alkyl substances (PFAS) from paper and board food packaging received almost 12,000 public signatures⁵², clearly demonstrating public support for stronger chemical legislation.

Fidra's survey on Scottish salmon products, which included more than 650 UK participants, also highlighted strong support for accessible information on chemical use and showed that consumers were willing to change their purchasing behaviour based on sustainability⁵³. 40% of respondents wanted more information on the production process of farmed salmon, supporting Fidra's call for the widespread use of sustainability dashboards to simplify chemical inputs and other environmental criteria. The survey also found that cost to industry could be offset, as 80% of respondents stated they were willing to pay more for sustainably produced salmon.

74% of UK citizens, surveyed in 2019, felt the government was not doing enough to protect the environment; this chemical strategy offers an opportunity to redress this imbalance and restore public confidence in environmental policy.

Recommendations and quick wins for pollution prevention

Combining the needs of the UK public, environment and economy into an effective system that protects the future whilst supporting the immediate economic recovery will inevitably take time. However, below we suggest a series of **policy actions that will ensure that the complexity of bigger issues does not stand in the way of the quick wins that are easily achievable right now** (Table 5). For example, while Fidra fully supports a UK commitment to phase-out all non-essential uses of PFAS, there must be intermediate policy that quickly reduces their use where alternatives are readily available, or where their function in a product is clearly superfluous.

Each of the policy actions described below will help move the UK's chemical regulatory system towards both Fidra's 'Principles for Sound Chemical Management (Appendix 1), and the ['12 Key Asks for the UK Chemical Strategy'](#) supported and co-signed by more than 27 health and environmental NGO's⁵⁴.

Table 5. Achievable policy commitments recommended by Fidra for inclusion in the UK chemicals policy

Key policy commitments to include within UK chemicals strategy	Justification
Commitment to phase-out all non-essential uses of per- and poly-fluorinated alkyl substances by 2030, with a clear timeframe of intermediate policies to address ongoing use where suitable alternatives are already available (e.g. food packaging, fire-fighting foams, cosmetics, non-protective clothing).	<ul style="list-style-type: none"> • Clear health and environmental concerns. • Restriction on the full PFAS group ensures safety throughout the full life cycle. • Protects UK's export capacity to EU where a commitment to ban non-essential PFAS uses is already established.
Implement a ban on the manufacture and sale of food packaging containing intentionally added PFAS by 2022.	<ul style="list-style-type: none"> • Precedent already set by Denmark who successfully banned PFAS from food packaging in July 2020. • UK retailers and suppliers already taking voluntary action. • Urgently needed to avoid regrettable substitution from plastic to PFAS in drive for environmental sustainability. • Further info available here⁵⁵.
Implement a ban on the use of <i>all</i> bisphenols in thermal papers, including till receipts by 2022.	<ul style="list-style-type: none"> • Clear health and environmental concerns; particular concern for prenatal exposure in pregnant cashiers. • Prevents regrettable substitution from BPA to other similar bisphenols. • Bisphenol free thermal papers readily available and in use across UK high-street. • Demonstrated support for group-based bisphenol legislation from UK retailers. • Further info available here.

<p>Revise legislation, regulation and enforcement of chemicals used as treatments in livestock farming including aquaculture, to ensure that restricted or banned chemicals cannot be applied through alternative paths, i.e. as disinfectant.</p>	<ul style="list-style-type: none"> • Inconsistencies in livestock farming legislation fail to adequately prevent chemicals of concern entering the environment. • For example, chemicals restricted under 'application to livestock' regulations may still be used through 'application to livestock enclosures'
<p>Ensure environmental quality standards are statutory for all chemical applications in livestock farming, including aquaculture and especially for formaldehyde, methanol and hydrogen peroxide.</p>	<ul style="list-style-type: none"> • There is growing concern regarding the impact of chemicals on non-target species and the wider environment, even where rates of degradation are rapid. • Lack of effective alternative treatments to chemicals such as formaldehyde necessitates statutory controls to be introduced, as long as such chemicals remain in use.
<p>Require transparency in livestock farming industries, including aquaculture, through publicly accessible databases or 'sustainability dashboards', including information on chemical use and frequency of application.</p>	<ul style="list-style-type: none"> • Livestock farming is an important industry and aquaculture is a growing sector. • Increased transparency in product chemical footprint empowers consumers to make ethical purchasing decisions. • Informed purchasing decisions can drive sustainable practices across the industry.
<p>Require supply chain transparency and traceability through full chemical disclosure, development of National Materials Datahub and 'smart labelling' of products.</p>	<ul style="list-style-type: none"> • Chemical transparency is essential for a safe and effective circular economy. • Full chemical disclosure is needed to ensure supply chains react efficiently to newly identified hazards, substances of concern or legislative changes. • Smart labelling allows waste and recycling sector to quickly identify risk and safeguard against chemical exposure.
<p>Ensure that the health impacts from fire toxicity and chronic chemical exposure are included in the remit for the revision of 'The Furniture and Furnishings (Fire) (Safety) Regulations 1988', alongside fire safety considerations.</p>	<ul style="list-style-type: none"> • Ignoring chronic exposure and fire toxicity in ongoing assessments misinforms the balance of risk from maintaining high flame retardant use. • Drives the UK market towards products that are safe and sustainable by design.
<p>Commit to a minimum requirement to keep pace with EU chemical restrictions, for a limited time period, allowing UK regulatory processes to be developed and implemented whilst maintaining ongoing progress in chemical safety.</p>	<ul style="list-style-type: none"> • Resource limitations must not lead to unnecessary regulatory divergence. • Chemical assessments and restrictions are an ongoing process, without a commitment to keep pace with the EU, divergence is the default position. • UK capacity for chemical management will take time to reach full potential.



About Fidra

Fidra is an environmental charity working to reduce plastic waste, eliminate the burden of chemical pollution on the environment and make space for nature. Fidra works with the public, industry and governments to deliver solutions which support sustainable societies and healthy ecosystems. We use the best available science to identify and understand environmental issues, developing pragmatic solutions through inclusive dialogue.

www.fidra.org.uk

Fidra is a SCIO and Scottish Registered Charity SC043895

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Appendix 1- Principles for sound chemical management

Fidra believes that sound chemical management for the prevention of pollution needs to be based on the principles outlined below:

1. **Chemical Policy Integration:** Recognising the reach of chemicals across all sectors, governments and organisations must move towards 'mainstreaming', or integration, of chemical policy, ensuring consideration of chemical use and impacts are included in all relevant decision-making.
2. **Ending unnecessary use of chemicals:** All producers, manufacturers, retailers and consumers need to identify and undertake measures to reduce non-essential chemical usage. Voluntary efforts must, in turn, be supported by underlying regulatory principles that **prevents the use of chemicals of environmental concern for all non-essential functions.**
3. **Proceed with precaution:** The **precautionary principle** must be applied when considering the use and restriction of chemicals. To implement the precautionary principle, we advocate a chemical **class-based approach**. Restrictions limiting the use of known chemical hazards or chemicals of emerging concern should extend to include similar compounds within the relevant chemical class unless the safety of these chemical analogues can be demonstrated.
4. **Supply chain transparency: Full materials disclosures** are essential to enable the identification of known hazards at all levels within the value chain and will allow supply chains to react efficiently to newly identified hazards, substances of concern and legislative changes.
5. **Access to information: Transparency and accessibility of data for all users** will ensure safe use, reuse and recycling within a circular economy and enable informed decision-making at all levels from primary sale to end-of-life disposal.
6. **Assess and reassess regularly:** Thorough and regular assessment of the emerging evidence base is needed to ensure consumer and environmental safety is maintained.
7. **Enforcement:** Strict enforcement with regular checks and prohibitive penalties for non-compliance, should be applied across all stages of the supply chain.
8. **Who pays:** In line with the polluter pays principle, the economic model should be such that the full financial burden of disposal, management and clean-up is borne by the producers and suppliers of chemicals and products containing chemicals, not the public.
9. **Strong evidence base:** Research and long-term monitoring are essential in providing policy, industry and society with the knowledge, predictive understanding and tools necessary to ensure safe use of existing chemicals and the early identification of emerging contaminants.
10. **Chemical justice:** Those impacted by chemical pollution must be considered and represented in chemicals governance and decision making. Routes to influence must be established for those impacted by chemicals pollution, informing legislation and industry practices.