



EUROPEAN COMMISSION

Brussels, 29.6.2021  
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**REGULATORY SCRUTINY BOARD OPINION**

**Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF  
THE COUNCIL amending Annexes IV and V to Regulation (EU) 2019/1021 of the  
European Parliament and of the Council on persistent organic pollutants**

{SWD(2021) 299 final }  
{SWD(2021) 300 final }  
{SWD(2021) 301 final }



Brussels,  
RSB

## **Opinion**

**Title: Impact assessment / Revision of POPs concentration limits in waste**

**Overall 2<sup>nd</sup> opinion: POSITIVE WITH RESERVATIONS**

### **(A) Policy context**

Persistent Organic Pollutants (POPs) are chemicals that can cause significant harm to human health and the environment. If released, these pollutants can move freely across borders, far from their sources and can even accumulate in regions where they have never been used or produced. The EU prohibits the production and use of all POP chemicals with some minor exemptions, limited in time, after which they are phased-out. The main challenge is to eliminate POPs and remaining stockpiles from the waste cycle, as these still represent an emission source. This impact assessment deals with setting and revising maximum limits of POPs in waste.

### **(B) Summary of findings**

**The Board notes the improvements in the description of the context and the clarification of its scope.**

**However, the report still contains significant shortcomings. The Board gives a positive opinion with reservations because it expects the DG to rectify the following aspects:**

- (1) Despite improvements in the description of the methodology to select preferred limit values, the application of the precautionary principle and the setting of limitation criteria are not sufficiently clear.**
- (2) The report does not seem to apply the methodology consistently across the different substances.**

### **(C) What to improve**

- (1) The report should clarify why its methodology does not differentiate the application of**

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This opinion concerns a draft impact assessment which may differ from the final version.

the precautionary principle between substances with or without scientific evidence on health and environmental risks. It is not clear why the methodology selects limit values below the scientifically defined health and environmental risk level.

(2) For some substances (PFOA, BCDD/Fs, HBCDD, PBDEs) there are analytical potential values that are above the background contamination values or disposal and recovery capabilities. The report should clarify the analytical potential it refers to in this context, as intuitively the analytical potential values should be the lowest considered.

(3) The report should explain how it applied the proportionality principle when establishing the lower limitation criteria on economic feasibility and on disposal and recovery capabilities. It should clarify why it identified multiple of these criteria for some substances.

(4) The report should explain why it sets the limit value below the highest of the lower limitation criteria for some substances (PBDE, HBCDD, Dioxins and Furans). This would seem to imply that this highest lower limitation criterion is considered irrelevant. The report should also explain why for Dicofol it proposes a limit value above the lower limitation criteria.

(5) The report presents a hierarchy of objectives. However, there are inconsistencies in the way it defines its general objective (section 4, 4.1 and 4.3). The report should also clarify why there is a need to balance the health and environmental considerations against the other (economic) objectives, if the former take precedence in the hierarchy.

(6) While the analysis indicates that the increase in administrative burden for public authorities linked to monitoring and enforcement for individual substances is 'limited', the report should also consider the cumulative effects on administrative burdens for the analysed substances taken together.

(7) The report provides an assessment of waste treatment capacity to process the additional hazardous and non-hazardous waste streams that would have to be incinerated or landfilled as a result of introducing lower concentration limits of POPs in waste. However, the presented evidence is either inconclusive (for non-hazardous waste incineration) or absent (for landfills). The report should support the conclusion that "*the preferred policy options do not seem to entail a problem of capacity for the waste management sector*" with sufficient evidence.

The Board notes the estimated costs and benefits of the preferred option(s) in this initiative, as summarised in the attached quantification tables.

#### **(D) Conclusion**

**The DG may proceed with the initiative.**

**The DG must revise the report in accordance with the Board's findings before launching the interservice consultation.**

**If there are any changes in the choice or design of the preferred option in the final version of the report, the DG may need to further adjust the attached quantification tables to reflect this.**

Full title

**Update of concentration limit values of persistent organic pollutants in waste - amendments to Annexes IV and V on waste of the Regulation on persistent organic pollutants**

	<b>(following the recast of Regulation 850/2004 (EC))</b>
Reference number	PLAN/2019/5397
Submitted to RSB on	2 June 2021
Date of RSB meeting	Written procedure

## **ANNEX: Quantification tables extracted from the draft impact assessment report**

*The following tables contain information on the costs and benefits of the initiative on which the Board has given its opinion, as presented above.*

*If the draft report has been revised in line with the Board's recommendations, the content of these tables may be different from those in the final version of the impact assessment report, as published by the Commission.*

<b>I - Overview of Benefits (total for all provisions) – Preferred Option(s)</b>		
<b>Description</b>	<b>Amount</b>	<b>Comments</b>
<b>Direct benefits</b>		
<b>PBDEs</b>		
Reduced incidence of IQ loss / intellectual disability and cryptoquidism in children and the general population.	A fraction of €10 bn / yr healthcare costs associated to PBDE are expected to be saved.  Allocation of these savings to a precise period in the future is not possible with any level of precision.	Continuing widespread contamination of PBDEs is estimated have EU human health costs of around €10 billion (primarily due to IQ loss/intellectual disability and cryptorchidism. Allocation of savings specific to emission reduction associated to this measure is not possible.  Under the preferred implementation of option Option 3 (delayed to 2027) the amounts are PBDEs destroyed range from 10 – 180 t. Avoided releases to the environment of PBDEs during service-life occurring in the next lifecycle of the (avoided) recyclate are estimated to be of between <b>10 – 150 kg</b> PBDEs.
Reduced worker exposure	No information to allow quantification of this health benefit.	Reduction in exposure to PBDEs for workers working with sorted low-bromine fraction (eg in the compounding and extrusion to produce post-consumer recyclate).
<b>HBCDD</b>		
Reduced HBCDD emissions to the environment. Reduced adverse impact on human health and ecosystems.	Not possible to quantify.	Reduction is likely to materialise in the future, as average concentrations of mixed EPS/XPS waste reduce due to increased presence of “clean” demolition material.
<b>Dioxins &amp; Furans (PCDD/Fs)</b>		
Reduced PCDD/Fs emissions from ashes from domestic burning of wood and coal and from biomass ashes no longer used in agricultural soil, in geotechnical applications or construction. Also reduced emission from amount no longer disposed in non-hazardous waste landfills.	50 - 200 g TEQ PCDD/Fs emissions avoided <sup>1</sup> .	Emissions and adverse effects in humans due to accumulation and exposure to dioxins via the food chain is avoided when these ashes are separately collected and not applied on land, especially agricultural land.
<b>Dioxin-like PCBs</b>		
More comprehensive coverage of	Cannot be quantified but	Integrating dioxin-like PCBs in the

<sup>1</sup> According to BiPRO (2005) the estimated total generation of PCDD/Fs in EU-25 was of 20 kg/year, of which about 25% was released to the atmosphere and 75% onto waste. See pg. 32.  
[https://ec.europa.eu/environment/waste/studies/pdf/pops\\_waste\\_full\\_report.pdf](https://ec.europa.eu/environment/waste/studies/pdf/pops_waste_full_report.pdf)

health risks associated with dl-PCBs (given they will be specifically accounted for).	positive.	group limit value for PCDD/Fs addresses more precisely the risks of these substances which act via a common mechanism of action. Given that the ratio of dl-PCBs to PCDD/Fs (expressed as TEQ) in some waste streams such as WEEE/ELV and especially ashes, seems to be about 1:10 a 10% increase in control / protection could be argued.  For all other aspects see section of PCDD/Fs.
<b>Short-chain chlorinated paraffins (SCCPs)</b>		
Reduced emissions of SCCPs from service life of articles not made from recycled rubber containing SCCPs.	The <b>maximum additional destruction of SCCPs</b> over the 2021-2035 will be of 690 t with <b>maximum annual amount of 180 t</b> .	Environmental and human health benefit from reduced emissions of SCCPs in rubber associated from removing 690 t of SCCPs cannot be calculated. It can be assumed that a fraction of the SCCPs present in the rubber that is incinerated <b>would be released during its service life</b> in articles if recycled.
<b>Perfluorooctanoic acid, its salts and related compounds (PFOA)</b>		
Reduced emissions leading to reduced human exposure.	PFAS exposure estimated to have a health cost of between <b>52 – 84 bn €</b> per year in Nordic countries.  Impossible to quantify. Some reduction due to diversion of some textile waste from recycling and landfilling to incineration.	Reduced incidence of associated cancers, reproductive and thyroidal effects in human.  Actual benefits probably limited given a large amount of PFOA containing waste will probably already have been disposed in landfills or incinerated. Given the very high persistence and deleterious effects of these substances all efforts to limit remaining sources of emissions are to be undertaken.
Reduced emissions leading to reduced environmental exposure.	€821 million to €170 billion per year remediation costs based on assumptions of current PFAS exposure estimated by the Nordic Council of Ministers (legacy plus PFAS currently in use).	Reduced incidence of intergenerational toxicity in fish and toxicity to freshwater algae and other aquatic organisms. Reduced PFOA induced in sexual maturation and pubertal timing, changes in mammary gland development and induction of a variety of tumours.
<b>Perfluorohexanoic acid, its salts and related compounds (PFHxS)</b>		
Same assessment as for PFOA, its salts and related compounds.		
<b>Pentachlorophenol and its salts and esters (PCP)</b>		
Reduced emissions leading to reduced exposure of humans via the environment.	About 500 t of PCP will be destroyed until 2032.	Introduction of the limit ensures current treatment of wood (and textile) waste by incineration will continue.
<b>Dicofol</b>		
Given no waste streams containing dicofol have been identified in the EU no impact is expected from the introduction of limits in Annex IV and V. Consequently no direct benefits are expected beyond the fact that if dicofol contaminated waste were to arise or be generated in the future (eg in the restoration of a contaminated site), limits determining the management of this waste would be available and in force in the POP Regulation.		
<b>Indirect benefits</b>		
Not applicable		

II - Overview of costs – Preferred option(s)							
		Citizens/consumers		Businesses		Administrations	
		One-off	Recurrent	One-off	Recurrent	One-off	Recurrent
PBDEs	Direct costs		Potential increase of costs to consumers if the vehicle and EEE producers that place them on the EU market internalise the costs incurred by recyclers, if passed on to the producers in accordance with the EPR, into the product price.	<u>Recyclers:</u> (30 specialised facilities) Investment in improving detection / sorting equipment. 6 – 12 M€ (assumed 50% of recyclers will have to do this). <b>Maximum 800 k€</b> per company. Expected in 2026-27 prior to entry into application of the revised Annex IV limit.	<u>Recyclers:</u> 7 M€ in incineration costs (average 260 €/ton) for waste plastic recycled and that previously landfilled (155€/ton, assumed 50/50 distribution hazardous waste landfill / non-hazardous waste landfill). For the whole period 2027-2035. Revenue loss for recyclers of 4 M€ due to loss of previously recyclable material that was placed on the market.  <u>Landfill operators:</u> 3 M€ revenue loss. Over 2027-2035.  <u>Users of secondary plastics</u> Additional costs of 6 M€ (2027 – 2035) to substitute recycled plastic with primary plastic. Cost spread over many companies so impact potentially small.		Possible loss of revenues from taxation of waste deposited in landfill in some Member States (which is diverted to incineration).  Quantification not possible but impact estimated to be small.
	Indirect costs		Increased CO <sub>2</sub> emissions of about 74,000 t over period 2027-2035 with associated fraction of costs related to consequences of warming of the earth. It is impossible to quantify these but estimated to be small given these emissions are only 0.0003% of GHG emissions in 2018.  Possible increased emissions of polybrominated dibenzo-p-dioxins and dibenzofurans (PBDDs/PBDFs). Impact and costs likely small but impossible to quantify.				
HBCDD	Direct costs			Purchase of hand-held XRF analytical equipment for on-site monitoring of bromine (as	Potential additional waste management costs for demolition operators and construction /		Potential increase in enforcement / monitoring activities.

II - Overview of costs – Preferred option(s)							
		Citizens/consumers		Businesses		Administrations	
		One-off	Recurrent	One-off	Recurrent	One-off	Recurrent
				proxy of HBCDD). 30,000 € per device.	demolition contractors resulting from diversion of 0.2% (640,000 t) of all C&D waste from non-hazardous waste landfill to hazardous waste landfill due to contaminates with EPS/XPS containing HBCDD. This estimation is <b>highly uncertain</b> . 0.64 Mt / year mixed C&D waste results in estimated <b>additional costs 135 M€/year</b> “This is based on an additional landfill cost of 210 €/ton. Cost of HW landfill 260 €/t. Cost of non-HW 50 €/ton.).  Additional testing / monitoring costs.		
	Indirect costs						
Dioxins & Furans (PCDD/Fs)	Direct costs	-			Costs to biomass power production plants resulting from diversion of 27,000 – 110,000 t / year of fly ash to hazardous waste landfill or underground storage (previously used in agriculture or sent to non-hazardous waste landfill). <b>Additional Waste management cost</b> estimated at: <b>6 – 24,8 M€</b> / year on operators of biomass plants. (average 260€/t for disposal in hazardous waste landfill vs 50€ cost of disposal in non-hazardous waste		Implementation and maintenance of <b>separate collection system of ashes</b> from domestic burning of wood and coal <sup>2</sup> .  <b>40 – 159 M€</b> / year additional cost of managing separately collected ash as hazardous waste (181,000-723,000 t) sent to hazardous waste landfill or underground

<sup>2</sup> No reference is made to separate collection systems established for such domestic burning ashes in the study “Guidance for separate collection of municipal waste” (2020) <https://op.europa.eu/en/publication-detail/-/publication/bb444830-94bf-11ea-aac4-01aa75ed71a1/language-en/format-PDF/source-133422972> carried out in support of the Commission Notice on Separate Collection of Hazardous Household Waste. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020XC1106%2801%29>



II - Overview of costs – Preferred option(s)							
		Citizens/consumers		Businesses		Administrations	
		One-off	Recurrent	One-off	Recurrent	One-off	Recurrent
					<p>landfill). Based on the estimated mix of 70% diverted from non-haz landfill and 30% from agriculture / construction, average extra landfill cost is estimated to be 225 €/t.</p> <p>Loss of (potential) revenue to producers of fly ashes may exist but could not be estimated.</p> <p><b>Additional testing costs</b> for biomass ashes and other waste such as fly ashes and sewage and biowaste compost. Individual test costs about 410 €/sample. Overall additional testing costs per waste stream / sector could not be estimated (given high number of installations involved and lack of knowledge of testing strategies to be applied for each).</p> <p><b>0.5 – 2 M€</b> additional costs to agriculture and to construction as a result of substituting ashes for primary raw material.</p> <p>Increased CO<sub>2</sub> emissions of <b>2,5 - 15 kt / year</b> with associated fraction of costs related to consequences of warming of the earth. This can be expected to represent a very modest impact.</p>		<p>storage (previously used in agriculture or sent to non-hazardous waste landfill). 36,000-145,000 t of this ash can no longer be used in agriculture (loss of mineral resources). This cost will be borne by municipalities and ultimately the citizen via taxation. average 260€/t for disposal in hazardous waste landfill vs 50 € for disposal in non-hazardous waste landfill). Based on estimated diversion of 80% from non-haz waste landfill and 20% from agriculture, the estimated additional cost per ton is 220 €.</p> <p>Note: As explained in section 6.3.4 of the report, the lower estimate provided in terms of domestic ashes diverted, and their associated cost, are considered a more likely estimate of the impact, although, given the limited analytical information, uncertainties are high.</p>
	Indirect costs						
Dioxin-like	Direct		See section on PCDD/Fs.		See section of PCDD/Fs		See section on PCDD/Fs.

II - Overview of costs – Preferred option(s)							
		Citizens/consumers		Businesses		Administrations	
		One-off	Recurrent	One-off	Recurrent	One-off	Recurrent
PCBs	costs				Possible increase in testing costs to waste oil recyclers due to inclusion of dl-PCBs into group limit for PCDDs. Under the preferred option 3 selected (0.005 mg TEQ/kg) this impact is expected to be small due to only sporadic control checks on incoming oils and not systematic testing expected to be necessary.		
	Indirect costs						
Short-chain chlorinated paraffins (SCCPs)	Direct costs				<p>Extra waste management total costs over 2021-2035 of <b>1.7 – 16.2 M€</b> for recyclers dealing with rubber from conveyor belts used in mining, which can no longer be recycled. The low estimate is based on a scenario where only SCCP contaminated rubber from mining conveyor belts is disposed of by incineration. The high figure results from assuming that no sorting is possible and all mining conveyor belt rubber will be incinerated.</p> <p>Users of secondary rubber, having to use primary rubber would incur in additional estimated average costs of 500 €/t, resulting in increased costs of €2.3-26 million over 2021-35.</p> <p>Additional testing costs which will vary depending on testing regime and have not been reliably estimated. Testing costs for SCCPs. 200 – 300 € per sample sent to the</p>		Potentially additional (limited) enforcement costs associated to new limit.

II - Overview of costs – Preferred option(s)								
		Citizens/consumers		Businesses		Administrations		
		One-off	Recurrent	One-off	Recurrent	One-off	Recurrent	
	Indirect costs				laboratory.			
Perfluorooctanoic acid, its salts and related compounds (PFOA)	Direct costs				<p>Some diversion of textile and carpet waste from recycling to disposal (incineration / landfill). Amounts and costs cannot be estimated given the currently very limited development of the textile recycling sector.</p> <p>Potential adverse impact in the creation of employment in textile recycling sector due to reduced availability of material.</p> <p>Additional PFOA testing for textile recyclers. Hundreds of thousands to a few million Euro costs estimated.</p> <p>High uncertainty in all estimations due to very limited information.</p>		Potentially additional (limited) enforcement costs associated to new limit. Administrative costs for enforcing a restriction estimated by ECHA to be 55,600 € per year.	
	Indirect costs		For each tonne of textile material recycled there is an estimated saving of 8 t CO <sub>2</sub> -e. Assuming there will be some diversion from recycling to incineration (or landfill) this will have an associated, presumably small climate impact and its associated economic, social and environmental impacts. This is impossible to quantify with the available information.					
Perfluorohexan	Direct	Same assessment as for PFOA, its salts and related compounds.						

II - Overview of costs – Preferred option(s)							
		Citizens/consumers		Businesses		Administrations	
		One-off	Recurrent	One-off	Recurrent	One-off	Recurrent
oic acid, its salts and related compounds (PFHxS)	costs						
	Indirect costs						
Pentachlorophenol and its salts and esters (PCP)	Direct costs		No impacts envisaged		No costs or other adverse impacts envisaged.		No impacts envisaged.
	Indirect costs						
Dicofol	Direct costs	Given no waste streams containing dicofol have been identified in the EU no impact is expected from the introduction of limits in Annex IV and V. Consequently no direct or indirect costs are expected from the measure.					
	Indirect costs						



Brussels,  
RSB

## **Opinion**

**Title: Impact assessment / Revision of POPs concentration limits in waste**

**Overall opinion: NEGATIVE**

### **(A) Policy context**

Persistent Organic Pollutants (POPs) are chemicals that can cause significant harm to human health and the environment. If released, these pollutants can move freely across borders, far from their sources and can even accumulate in regions where they have never been used or produced. The EU prohibits the production and use of all POP chemicals with some minor exemptions, limited in time, after which they are phased-out. The main challenge is to eliminate POPs and remaining stockpiles from the waste cycle, as these still represent an emission source. This impact assessment deals with setting and revising maximum limits of POPs in waste.

### **(B) Summary of findings**

**The Board notes the useful additional information provided in advance of the meeting.**

**However, the Board gives a negative opinion, because the report contains the following significant shortcomings:**

- (1) The report does not explain the room for manoeuvre for the EU when implementing the Stockholm and Basel conventions in the POP Regulation.**
- (2) The report presents no clear hierarchy of objectives. It is unclear why and how it weighs the reduction of health and environmental risks against other objectives (recycling and greenhouse gas emission reduction). The report lacks an analysis of what levels of POPs are safe for human health. It is unclear how it applies the precautionary principle and how proportionality considerations are taken into account.**

### **(C) What to improve**

- (1) The report needs to better present the international context of the revision of the concentration limits of POPs in waste. The obligations under the Stockholm and Basel conventions need further clarifications, including the need to act by the EU and its margin**

of manoeuvre. The report needs to explain better the role of the Basel convention's indicative limit values in this revision.

(2) The report should clearly present a hierarchy between its objectives. It should explain where health and environmental considerations take precedence and how far other objectives (such as reduction of greenhouse gas emissions and increased recyclability) can be considered. In this context, it should be clear about how it applies the precautionary principle and how it determines 'acceptable' risk levels for substances when there is no clear scientific evidence. It should better explain what feasibility factors are included in its methodology to fix limit values and why. The report should also clarify how and to what extent it applies the proportionality principle.

(3) The report lacks a summary of existing evidence on health and environmental impacts of the different substances. Without such evidence, it is not clear how the choice of POPs' concentration limits in waste is in line with the health and environmental objectives. The report should explain whether and how the presence or absence of consensual scientific evidence influences the choice of limit values.

(4) The report should present, where relevant, the cumulative impacts of lowering allowed concentration limits of the concerned POPs in waste. For example, the new limits will increase the amount of waste that has to be either incinerated or disposed in landfills. The report should assess whether the existing waste management centres, incinerators and landfills have sufficient capacity to process the additional waste. Similarly, it should present the cumulative and distributional impacts (resulting from introducing lower limits for all of the substances in scope of the revision) on all the involved economic actors and variables of interest. This includes the impacts on public authorities (e.g. inspections), the amounts of additional greenhouse gas emissions and volumes of recycled material.

(5) The report should elaborate on the robustness of the methodology used to establish limit values for POPs in waste. It should clarify to what extent the methodology underpinning the technical study has been peer reviewed and whether it is supported by all stakeholders.

*Some more technical comments have been sent directly to the author DG.*

#### **(D) Conclusion**

**The DG must revise the report in accordance with the Board's findings and resubmit it for a final RSB opinion.**

Full title	<b>Update of concentration limit values of persistent organic pollutants in waste - amendments to Annexes IV and V on waste of the Regulation on persistent organic pollutants (following the recast of Regulation 850/2004 (EC))</b>
Reference number	PLAN/2019/5397
Submitted to RSB on	4 February 2021
Date of RSB meeting	3 March 2021