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BELGIAN COMMENT ON THE '*per- and polyfluoroalkyl substances (PFASs) in fire-fighting foams*' RESTRICTION PROPOSAL

Overview:

- New insights from BE studies indicate wide-spread pollution of PFAS where firefighting foams have been used, proving there is an EU-wide concern.
- PFAS production sites pose a significant risk to local populations, and should therefore be tackled under this restriction as soon as possible by aligning the use restrictions with the production ban.
- Socio-economic analysis of the benefits should not be limited to prevented emissions, as research clearly shows a wide array of benefits to be considered when banning these substances.
- In the Annex at the end of this document we provide some additional data and information regarding environmental concentrations of PFAS which are indisputably linked with the use of AFFF products.

First and foremost we would like to thank the Dossier Submitter (DS) ECHA for preparing this restriction proposal and providing us with an extensive and detailed assessment on PFAS in fire-fighting foams. We find it positive that ECHA is aligning its work with the work being done by the Member States on restricting all non-essential PFAS uses. However, we do have some considerations regarding specific aspects of the Annex XV dossier. We would like to remind ECHA that we have already submitted a first comment during this Public Consultation in which we provided relevant information on studies that have been conducting on PFAS in Belgium during the last years.

As you may know Belgium has recently been faced with a crisis regarding PFAS pollution at the 3M production site in Zwijndrecht near the Antwerp harbor. This resulted in a large scale investigation of the pollution around the Zwijndrecht production site, as well as a mapping exercise on potentially polluted sites around Flanders based on sites where firefighting foams have been used in the past. (i.e. fire-fighting foam training grounds and sites where large fires were extinguished). We believe it is important to share with you the lessons learned from this crisis and subsequent research, and to stress the importance of phasing out PFAS substances in firefighting foams.

Fire-fighting training and use sites as PFAS pollution hot-spots

Since the recent crisis in Belgium, several actions have been started by the regional governments to tackle the PFAS problem. One of the actions of interest for this restriction proposal is the mapping of potential hotspots of PFAS pollution¹. The mapping has been done by identifying potential so called hot-spot sites where PFAS have been emitted in the past, like industry sites, firefighting training grounds and sites of major accidents where PFAS foams have been used. This mapping exercise has

¹ <https://www.vlaanderen.be/pfas-vervuiling/maatregelen-per-gemeente>

shown that the PFAS pollution is wide-spread and that hundreds of sites in Flanders alone are potentially contaminated with PFAS. This has prompted the Flemish government to take action on several of these sites by setting so called “no-regret measures” like advising against eating home grown vegetables and eggs, drinking groundwater and to not let children play on the unpaved terrain near hot-spot sites.

This mapping exercise has clearly shown that **PFAS pollution is not limited to production sites, but that this pollution is a wide-spread problem with potentially polluted sites most likely all over the EU**. The majority of hotspots identified are a result of the use of PFAS containing firefighting foams, which confirms that this specific use is responsible for a large portion of the PFAS pollution. Belgium therefore urges ECHA’s scientific committees to take these new insights into account, as we believe this shows clear justification for assuming EU wide risk to Human Health and the Environment as well as high costs for society for the use of PFAS in firefighting foams.

Risks at PFAS production and use sites

Another important lesson learned from this recent 3M crisis is that industrial production sites can result in an increased exposure of the local population to PFAS substances. Monitoring at the 3M site has shown that higher concentrations of PFAS are found in surface water, soil, groundwater, dust and deposits compared to background values². Recent blood sampling³ of the local population living near the production site has shown that over 97.2% of samples exceeded the EFSA guideline of 6,9 ng/L, and more than 50% exceeded the HBM-II value for PFOS of 20 ng/L. This clearly shows that PFAS production sites are a significant point source of emissions into the environment and human exposure to PFAS. The mapping exercise discussed earlier also showed that several other industrial sites where PFAS have been used or produced are hotspots of PFAS contamination, showing that the problem is not limited to the production site in Zwijndrecht.

Belgium is strongly in favor of the proposal of the DS to have ‘PFAS-containing firefighting foams management plans’ in place at production sites to minimize the release of these substances. Industry has already shown it to be possible to drastically reduce emissions by enacting such management and best available practices⁴, therefore having a legal obligation would certainly be a positive development. However it is important to realize that it is impossible to have 100% reduction of emissions and therefore – considering concentrations in the environment will keep rising due to their persistence – a total ban of PFAS use in AFFF as soon as possible is preferred. Especially since it has been shown that safer, non-PFAS alternatives already exist for most of these PFAS uses⁵, and even for large fires we are not at an early development phase but rather at the stage of upscaling the technology. Considering all this would also like to add that the option of having derogations schemes, as proposed under RO4, could potentially allow the continued use of these foams by even more than 10 years and hamper the upscaling alternatives; as well as present additional costs to authorities for handling derogation requests, which should be properly assessed under this RO.

² <https://www.vlaanderen.be/pfas-vervuiling/tweede-rapport-opdrachthouder>

³ https://assets.vlaanderen.be/image/upload/v1635427566/Bevolkingsonderzoek_PFAS_Zwijndrecht_-_Wetenschappelijk_rapport_-_Samenvatting_-_update_28.10.2021_ouhm9c.pdf

⁴ <https://www.chemours.com/en/corporate-responsibility/sustainability-safety/our-commitment-to-pfas-stewardship>

⁵ https://echa.europa.eu/documents/10162/28801697/pfas_flourine-free_alternatives_fire_fighting_en.pdf/d5b24e2a-d027-0168-cdd8-f723c675fa98

Considering that PFAS containing fire-fighting products are still being produced at the 3M site⁶ and that emissions are still occurring, we believe it is of the utmost importance to stop the production of these compounds as fast as possible. Therefore Belgium does not understand why, in the current restriction proposal, the production and export would still be derogated for 10 years, while specific uses would already be restricted. **Belgium therefore is strongly in favor of aligning the transition periods of the restriction on the placing on the market and production/formulation of these substances with the transition periods of the use of these products..** We believe this is important because otherwise – i.e. by having a broad derogation on placing on the market and export of these substances for 10 years (as is being proposed by the DS in the Annex XV dossier) – you keep exposing local communities, and workers working at these production sites, to emissions resulting from production, while the use of the products could already be restricted in the EU.

Moreover, Belgium would like to highlight that this current proposal does not align with the goal of the EU Commission to *“lead by example, and, in line with international commitments, ensure that hazardous chemicals banned in the European Union are not produced for export, including by amending relevant legislation if and as needed”*, as was stated in the Chemical Strategy for Sustainability⁷. Important to note as well is that export outside of the EU could still pose a risk to EU citizens and environment, as PFAS are persistent and many of them are highly mobile in the environment.

We therefore ask the DS and the scientific committees to properly assess the benefits of banning the production and formulation at the same time as the use to ensure optimal reduction of PFAS emissions under this restriction.

Socio-economic benefits of this restriction: prevention of clean-up and health care costs

Belgium understands that it is hard for these types of restrictions to go for a quantitative assessment as there are a lot of uncertainties regarding the hazards and exposure of humans and the environment to PFAS as a group. Furthermore, we also understand the reasoning of calculating the costs for Industry to clean out the tanks containing PFAS foams, as well as the costs associated with changing the formulations etc.

Nevertheless, we believe it is equally important to consider the benefits of preventing remediation costs by restricting the use of these substances. It is **important to include the potential costs associated with removing and cleaning PFAS contaminated soils and drinking water in the socio-economic assessment, as well as the economic consequences of polluted soils and groundwater on agriculture and real estate.** For example, due to the large scale pollution of soils around the 3M site in Zwijndrecht, 3M now pledged to pay more than 500 million euros for clean-up and compensation to local agriculture and authority costs⁸. In this particular case the costs will be mainly carried by 3M, however for many of the other polluted sites identified in the mapping exercise the costs will most likely fall on society, and could be reaching similar amounts considering the large amount of polluted sites. Examples of around Europe show that this is not limited to Belgium, with similar pollution cases resulting in costs up to the hundreds of millions⁹ as indicated in

⁶ https://www.3mbelgie.be/3M/nl_BE/pressroom-bnl/press-releases/fullstory/?storyid=ab500637-5fac-475d-9322-96ef056cf743

⁷ And also mentioned in the ENVI Council Conclusion of March 17th, paragraph 45 (<https://www.consilium.europa.eu/media/48827/st06941-en21.pdf>)

⁸ <https://www.vlaanderen.be/pfas-vervuiling/nieuwsberichten/3m-tegemoetkoming-18-miljoen-euro-voor-37-landbouwbedrijven>

⁹ See Annex XV dossier page 27/206:

the Annex XV dossier (and in view of the Belgian case might be a lower-bound estimation). These kinds of costs associated with PFAS pollution are in our view very important to keep in mind when calculating the costs and the benefits of this restriction, especially considering many of these site cleanings could end up being paid by authorities and thus indirectly by the general EU population.

Furthermore, we would like to refer the DS to a study on benchmark development of proportionality of PBT and vPvB substances¹⁰. In this study it was calculated that the costs of remediation of PFOS alone could be up to 1 million euros per kg, which was by far the highest of all the studied substances, mainly due to its persistent characteristics. Considering that PFOS is only one of the many PFAS substances, one can conclude that PFAS as a group could have very high remediation costs associated with it.

Moreover, there are other costs to be considered when conducting a cost-benefit analysis on this restriction. For instance the costs associated with health care, mental health etc. are typically underrepresented in the SEA process. Recent studies from the Belgium, the US and EU show that health related costs of PFAS pollution can go up to the billions^{11,12,13}, which cannot be ignored when doing a cost-benefit analysis. If the scientific opinions do not count avoided costs quantitatively, then they should at least document those benefits quantitatively in the opinion text itself so the Commissions receives a complete set of information regarding costs and benefits. This should include the data we are bringing here as well as a description of the no-regret measures

The above considerations are sufficient justification for Belgium to **move to a more quantitative assessment based on the amount of PFAS containing foam polluted sites and an estimation of their remediation costs, as well as calculating the healthcare costs and social costs that can be prevented by reducing the emissions. An extrapolation could be made** from data collected from Belgium and other EU countries to the EU in general. To Belgium the current approach by looking at avoided emissions is a severe underrepresentation of the benefits that can be gained by implementing this restriction.

On the scope of the restriction – use of gaseous firefighting products in data-centers

Belgium wants to thank the dossier submitter for the in depth analysis of different sectors that will be impacted by this restrictions, and we appreciate the reasoning being used for implementing certain transition periods for uses where alternatives are not yet practically available. One sector and use type we do miss in this analysis is **the use of gaseous firefighting products in sprinkler systems**. We have received information from stakeholders that these products may contain PFAS, and therefore we wonder whether these uses have been considered in the analysis? This is especially relevant considering that these types of products are used in data centers, which are often classified as Seveso companies. We would therefore like to propose to the DS and the

The Nordic Council of Ministers commented that the annual health-impacts within an EEA exposure study (from all uses of PFASs, not only firefighting foams) was estimated at €52- 84 billion. This gives an indication of the scale of the issue and magnitude of the potential impacts from the environmental build-up of PFASs. The same study describes remediation costs associated with contamination from PFASs at European sites ranging from several hundred thousand up to €40 million with one high-cost example for the Dusseldorf Airport, Germany estimating a total remediation cost of up to €100 million.

¹⁰ <https://research.vu.nl/ws/portalfiles/portal/1338945/R15-11+PBT+benchmark+-+final+report.pdf>

¹¹ [Ontwikkeling van gezondheidsindicatoren voor blootstelling aan hormoonverstorende stoffen in Vlaanderen en doorrekening van de maatschappelijke gezondheidskost | FRIS onderzoeksportaal \(researchportal.be\)](#)

¹² <https://pubs.acs.org/doi/10.1021/acs.est.2c02765>

¹³ <https://link.springer.com/article/10.1007/s12403-022-00496-y>

scientific committees to take this new information into account when discussing this restriction proposal.

Conclusion

To conclude, the recent developments in Belgium on PFAS contamination have clearly shown that PFAS pollution is a wide-spread problem not limited to Belgium. Furthermore it has been shown that the use of fire-fighting foams is one of the major routes of PFAS into the environment. Belgium therefore is strongly in favor of restricting the use, as well as the production and putting on the market of PFAS in fire-fighting foams as soon as possible, especially considering that safer alternatives are already available and technically and economically feasible to use.

To add onto the data we have submitted earlier on in the Public Consultation we would like to direct you to the Annex of this document where you can find an excel file containing monitoring data collected at firefighting training grounds in Flanders. This data was extracted from the [PFAS explorer](#) that we have shared with you in our previous comment, which you can access freely and extract data from. Please note that a lot of research is still ongoing in Belgium, so please don't hesitate to contact us in case you would like to receive additional data. Also please don't hesitate to contact us if you have any more specific questions regarding the work ongoing within Belgium.

Annex I – Specific data on monitoring

Monitoring data of PFAS near AFFF use sites in Flanders (Belgium)

In the excel file that we included in our comment we list available data of soil, groundwater, surface water, and biota collected at sites where PFAS AFFF have been used in Flanders. The first tab lists data collected by OVAM (Public Waste Agency of Flanders) on groundwater, surface water and soil. This data is limited to 5000 datapoints for practical reasons, much more datapoints can be consulted in the PFAS explorer online. The other tabs consist of data collected by other Flemish agencies in all the relevant compartments. Please don't hesitate to contact us in case you need further explanation on this dataset or on how to use the online tool.

Report on presence of PFAS at AFFF use sites

The Public Waste Agency in the region of Flanders (OVAM) has recently published a report on the presence of PFAS in soil and groundwater on firefighting foam use sites¹⁴. The first results that are explained in this report clearly show a direct link with the presence of PFAS in soil and groundwater and the use of these foams. Even at sites where these foams have only been used one time (i.e. sites of fire incidents) PFAS concentrations are found. We highly recommend you to have a look at Table 3 in the report (see print screen below), which shows that nearly all analyzed sites show groundwater contamination, while also many sites show soil contamination. **This study indisputably links the use of these AFFF products with the emissions of PFAS into the environment**, and we therefore highly recommend the DS and the scientific committees to take this information into account. Especially considering this data can easily be extracted to the whole of the EU, showing that there will most certainly be many similar contamination sites all over the EU.

¹⁴<https://ovam.vlaanderen.be/documents/177281/0/Aanwezigheid+van+PFAS+in+grond+en+grondwater+op+brandweerlocaties+-+eerste+trends+en+inzichten.pdf/0b30fb8b-51d5-fe0e-3150-dbdbeeb229e1?version=1.0&t=1651043225716&download=true>

Table 3 of the OVAM report showing the amount of DAEB (i.e. clear indication of severe soil contamination) reporting's on different types of locations where PFAS containing foams have been used

Activiteit	DAEB in vaste deel van de aarde	Aantal rapporten in vaste deel van de aarde (59)	%DAEB in vaste deel van de aarde	DAEB in grondwater	Aantal rapporten in grondwater (55)	%DAEB in grondwater
brand	3	11	27%	13	14	93%
brandweerkazerne	2	4	50%	4	5	80%
brandweer kazerne + oefenplaats	14	30	47%	22	23	96%
brandweer oefenplaats (niet op locatie van kazerne)	4	12	33%	6	11	55%
brandweer opslagplaats	0	1	0%	1	1	100%
jaarlijks schuimtapijt	0	1	0%	1	1	100%