

Report

Emission Control: minimization and monitoring challenges

Date: 1.02.2024

Moderator: Magnus Løfsted (EEA)

Reporter: Tom Boonen (dOMG)

Subject: Emission Control: minimization and monitoring challenges

1 TACKLING PFAS POLLUTION: EMISSION CONTROL

Presentation by Magnus Løfsted – Expert chemicals, Human Health and Environment at the European Environmental Agency (EEA).

Magnus provided an introductory presentation to set the scene.

2 POLICY ON EMISSIONS OF HAZARDOUS SUBSTANCES TO WATER AND AIR

Presentation by Sam van de Snepscheut and Paul Bakker – Senior Policy Officers of the Ministry of Infrastructure and Water Management, Netherlands: Minimization in practice.

The Netherlands has already a few years of experience with an obligation to minimize the use and the emissions of hazardous substance of concern. Sam and Paul focused on challenges of this existing policy and shared their views on the potential of the (new) IED.

During the presentations the audience could respond to prepared statements and post questions that were dealt with by the experts after (all) the presentations.

3 METHODOLOGICAL AND ANALYTICAL CHALLENGES FOR PFAS MONITORING IN ENVIRONMENTAL MEDIA

Presentation by Stefan Voorspoels in collaboration with Griet Jacobs – researchers at VITO (Flemish reference laboratory): Update from the frontline.

PFAS what are they and how can we find them in different (complex) media. How can improving measurement methodologies drive the substitution.

4 PFAS MONITORING IN AIR: METHOD DEVELOPMENT AND FIRST INSIGHTS

Presentation by Jelle Hofman – researcher at VITO (Flemish reference laboratory): Method development and first insights

Measuring PFAS in ambient air is challenging, VITO has developed quantification methodologies for emission, immission and deposition of PFAS in real circumstances.

5 STATEMENTS AND Q&A (SLIDO)

Moderated by Magnus Løfsted – statements and questions (see Annex 2) were shortly touched upon by the speakers. Since time was limited speakers commented quickly on different statements and questions. The public was invited the public to interact after the session during lunchbreak.

6 KEY MESSAGES

Substances of concern are used in different industrial processes. Through the (revised) Industrial Emissions Directive (IED) the minimization concept will be (mandatory) used throughout Europe. Together with the new innovation centre INCITE many elements to potentially fast track substitution of substances in Europe are there. To ensure effective emission control effective emission monitoring is crucial. The VITO reference laboratory develops both qualitative and quantitative monitoring methods to be used in Flanders.

The Netherlands obliges operators of installations to substitute as much as possible hazardous substances of concern and where this is not possible reduction is needed through process optimisation or end-of-pipe techniques. It is a joint effort of industry and government, where industry is in the lead and government has to ensure permits are aligned with the strategy to minimize. The Dutch experience with the minimization principle has yielded results but challenges still exist.

PFAS complexity already starts at their definition, identifying them correctly and finally putting a name on the compound that is useful and commonly accepted. This challenge will grow as the scope of PFAS under study expands. Methods to tackle characterization are available, but a balance between science, economy and legislation needs still to be found. Characterizing all PFAS will always remain utopia, but a combination of new technologies, led by NTA (non-target analysis) will bring us as close as needed. “As needed” is an important

statement, because every measurement comes with an uncertainty. How big an acceptable uncertainty can be, is solely defined by the expectations and intended use of the data. Perfection is not needed, good enough is sufficient!

No standard methods to characterize PFAS in ambient air exist today. This does however not mean that PFAS can't be measured in our environment. At VITO we have developed fit-for-purpose sampling tools to study atmospheric presence of PFAS (in emissions, ambient air and deposition). These were successfully deployed at various locations throughout Flanders. First datasets show that PFAS are omnipresent but that long-term average exposure is typically below the temporary assessment framework threshold for chronic exposure (0.4 ng/m³). However, the temporary assessment framework is only based on 4 PFAS compounds, which is not in relation to the +10,000 PFAS compounds that are potentially circulating. In addition, the first official Flemish method to measure PFAS in stack emissions was developed, validated and currently out for ministerial approval (<https://emis.vito.be/nl/erkende-laboratoria/lucht-gop/compendium-luc>). Accreditations for Flemish commercial laboratories are expected by mid 2024.

ANNEX 1 – PRESENTATIONS

- European Environmental Agency, Magnus Løfstedt
- Ministry of Infrastructure and Water Management, The Netherlands: Sam van de Snepscheut – Senior policy officer Chemical Safety; Paul Bakker – Senior policy officer Water Quality
- Flemish Institute of Technological Research (VITO): Stefan Voorspoels & Griet Jacobs (water) and Jelle Hofman (air) VITO reference laboratory

ANNEX 2 - STATEMENTS (OUTPUT) AND QUESTIONS - SLIDO

A measurement uncertainty of 50% is unacceptable.

Multiple Choice Poll 103 votes 103 participants

Agree - 42 votes



Disagree - 49 votes



Don't know - 12 votes



Share

Costs should not be a (dominant) factor that industry considers when substituting or preventing emissions of hazardous substances of concern.

Multiple Choice Poll 103 votes 103 participants

Agree - 69 votes



Disagree - 29 votes



Don't know - 5 votes



Share

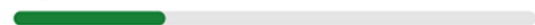
Are analytical methods the limiting factor for reliable PFAS assessment?

Multiple Choice Poll 103 votes 103 participants

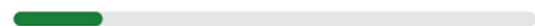
Agree - 55 votes



Disagree - 30 votes



Don't know - 18 votes



Share

Minimization of emissions means that emissions of hazardous substances of concern meet ELV or should they be further reduced to detection limit or zero emissions?

Multiple Choice Poll 103 votes 103 participants

Zero emissions - 24 votes



Detection limit - 15 votes



Environmental limit values - 64 votes



Share

Only zero emission can save our future.

Multiple Choice Poll 103 votes 103 participants

Share

Agree - 26 votes



25%

Disagree - 62 votes



60%

Don't know - 15 votes



15%

We need to characterize all PFAS to make assessment possible?

Multiple Choice Poll 103 votes 103 participants

Share

Agree - 36 votes



35%

Disagree - 55 votes



53%

Don't know - 12 votes



12%

The measured PFAS concentration around 3M are among the highest ever measured in Belgium?

Multiple Choice Poll 103 votes 103 participants

Share

Agree - 69 votes



67%

Disagree - 11 votes



11%

Don't know - 23 votes



22%

Questions:

1. Setting the emission levels so low (ng level) brings many other neg. side effects. 1000's tons of activated carbon are incinerated. Is cure worse than the pain?
2. Looking at the water framework goals, is the minimization obligation and then SVHC enough?
3. Is the fact that a company cannot give enough information about the substances it uses (danger, risk human health and environment) an unacceptable risk itself?
4. The avoidance/ reduction obligations 5 years BAT+, are they running only in NL? what is the EU view of this who are slower with process on PFAS Restrictions.
5. How did you come-up with the limit of 4 ng/m3? Is it applied for all these PFAS or its unique based on the PFAS.

3 – LIST OF PARTICIPANTS

Vlaamse Overheid

- departement Omgeving
- VMM
- OVAM

3M Belgium bvba

ABO

ACLAGRO

AECOM

AECOM Belgium BV

Agoria

Allnex Belgium

Aquafin NV

ARCHE Consulting

BASF Antwerpen

Bayer Agriculture bv

Belgische Baksteenfederatie

bioMérieux SA

BK-Ecosys

CEBEDEAU

	HAZARDOUS WASTE EUROPE	RIWA-Maas
Cefic	iFLUX	Salesforce
Chemours	Imec	Sarp Industries
Chemviron	Indaver	Sarpi
COMMON FORUM on Contaminated Land in Europe	Industrious Law	SARPI VEOLIA
CONDR	Ineris	Sciensano
daa	Injectis	SGS Belgium NV.
De Tijd	InOpSys	SMART
Desotec NV	Jan De Nul / Envisan	Sodecon NV
Devagro	Joint Research Centre - European Commission - JRC Geel	SPAQUE SA
Environment Agency Austria	Kanner Law	Stad Antwerpen
Essenscia	KoBae Trading & Consulting CommV	Stibbe
ESVM for ACEA	Lantis (Beheersmaatschappij Antwerpen Mobiel NV)	Tauw België nv
European Commission	LANXESS Belgium nv	Tectero BV
European Environment Agency	Liedekerke Wolters Waelbroeck Kirkpatrick	TotalEnergies
ExxonMobil Petroleum & Chemical BV	Minaraad	Tractebel Engineering
Finnish Environment Institute Syke	Ministry of Infrastructure and Water Management	Veolia Environmental Services Belux NV
FOD Volksgezondheid en Leefmilieu	MSD Animal Health	VITO
	Novartis	VIVAQUA
German Environment Agency (UBA)	Provincie Zeeland	Voka
Ghent University	Ramboll	water-link
Growth Inc.	Renewi	Witteveen+Bos
		Zwijndrecht Gezond