

International conference: PFAS – Dealing with contaminants of emerging concern

30 November & 1 December 2020

[Conference report \(shorter version\)](#)

As part of the German EU Council Presidency, the German Federal Ministry for the Environment (BMU) and the German Federal Environment Agency (UBA) hosted the international online conference *PFAS – Dealing with contaminants of emerging concern*. The conference was held in a virtual format and was met with great interest. Over 700 participants from 30 countries tuned into the live stream – with 300 to 450 people simultaneously logged in. This made the PFAS conference one of the largest online conferences of the BMU during Germany’s EU Council Presidency. The great interest and the positive feedback from the meeting confirmed once again that PFAS in the environment is a highly topical and sensitive subject.

The aim of the international conference was to offer a platform to point out current regulatory developments of the substance group, discuss strategies for dealing with PFAS contaminations, present possibilities for soil and water remediation and future political action areas, for instance, to minimise PFAS discharges into the environment. Urgently needed technical matters and issues relevant to enforcement were also discussed. The conference brought together two different specialist groups from the fields of chemical risk assessment and contaminated site management.

The event was jointly opened by Dr Dube, Director-General for Water Management and Resource Conservation at the BMU, and Professor Dr. Messner, President of the UBA. Dr Dube underlined that more and more scientific findings are verifying the downside of PFAS and making clear that they pose a serious risk to humans and the environment. That is why the EU and Germany are advancing PFAS research and the development of policy strategies, legal requirements and remediation techniques. Precautionary measures are clearly the best way for protection. Professor Messner emphasised that PFAS should only be used where absolutely essential, and only until an alternative is found. He pointed out the considerable need for research and that UBA is working - also in European networks - on obtaining new findings on this group of substances, and from an extensive monitoring, to draw up measures for protecting human health and ecosystems.

Arlene Blum, the renowned American chemist and environmental activist, gave the keynote speech. She welcomed European efforts to comprehensively regulate and limit the use of the entire PFAS group and its dissemination. In the US, the mindset has changed as well. The new US President Joe Biden will prioritise PFAS regulations in his plan for environmental justice.

Soil and water contaminated with PFAS also pose a risk to human health because the substances can leach into drinking water and food. That is why two years ago, the European Food Safety Authority (EFSA) drastically lowered the threshold for the tolerable weekly intake (TWI) of the most significant PFAS, reducing it a thousandfold. Very recently, EFSA decreased the tolerable intake level once more. Professor Schwerdtle, Vice President of the Federal Institute for Risk Assessment (BfR) and Chair of the working group “PFAS in food” at EFSA explained the reasons behind this decision.

The European Commission is advocating further regulatory measures on PFAS. In October 2020, it published a PFAS Action Plan in its Chemicals Strategy for Sustainability that Cristina de Avila, Head of the Sustainable Chemicals Unit at DG Environment, presented during the conference. In future, PFAS are to be addressed with a group approach in the relevant legislation on water, sustainable products, food, industrial emissions and waste. The Commission also wants to develop an EU-wide approach to the remediation of PFAS contaminations and provide financial support for innovative research projects with a view to the substitution of these substances with environmentally sound chemicals. Another significant initiative in the Chemicals Strategy is the restriction of the manufacturing and use of the entire group of substances. The restriction and substitution of PFAS are also declared objectives of the European Parliament and the Council. The German chemicals authorities are currently drawing up a restriction proposal under REACH for all uses that are not essential for society, together with the authorities of four other countries (the Netherlands, Sweden, Denmark and Norway).

Following the reports on the current regulations and activities at EU level, the conference's second block focussed on national presentations from Europe and Australia. In 2020, Flanders and the Netherlands derived background levels for the most common PFAS and published guidelines on risk assessment and on dealing with excavated soil contaminated with PFAS. While in these two regions only part of PFAS contaminated soil is landfilled, Norway is building special landfills for the contaminated excavated soil arising from the current remediation of all civilian airports.

In 2016, Australia set up its own task force to solve the complex problems caused by PFAS contaminations, initiate the regulations on dealing with such pollutions, coordinate national programmes and advise and support the public authorities and stakeholders. PFAS emissions could also be reduced through advising the PFAS producing and processing industry to switch to using non-toxic chemicals.

The presentations from Veneto, Italy and Mittelbaden, Germany highlighted the complexity and challenges local enforcement authorities face in the event of extensive contamination when there are no legal regulations. In the Veneto region, a PFAS production company and the textile processing industry contaminated an area of around 600 km², affecting 30 municipalities and 140,000 inhabitants. Biomonitoring data show that the levels of PFAS detected in the blood of people living in the affected region in Veneto are several times higher than the HBM II value of the Human Biomonitoring Commission of the German Federal Environment Agency, above which adverse health effects are possible. The additional purification of drinking water with activated carbon for the 140,000 inhabitants costs 1 million euros per year.

Due to the extensive contamination in the Mittelbaden region, likely caused by PFAS-contaminated paper sludge deposited on agricultural land for many years, comprehensive remediation is also impossible. The PFAS Unit of the Karlsruhe district administration thus focuses on the protection of drinking water supply and agricultural products. Aside from long- and short-chain PFAS, precursors are particularly problematic. Scientific studies have determined which crops absorb low levels of PFAS depending on the soil type. Farmers are advised individually and plants are tested for PFAS as part of a pre-harvest monitoring two weeks before harvesting. Beyond that, the food safety authority tests them prior to sale. This has helped maintain buyers' confidence in local products.

All national examples had in common that the costs for remediation of PFAS contaminations were financed through public funds. Both the precautionary and the polluter-pays principles should be reinforced in future.

A third block of presentations centred on the current state-of-the-art of science and technology regarding available remediation options. Innovative remediation strategies and techniques were introduced. The recently published UBA guide *Remediation management for local and widespread PFAS contaminations* was presented. The lively discussion that followed made clear where there is still a need to take action, that there is practically no reasonable remediation solution available for extensive contaminations and that the costs of measures are consistently a bottleneck for the swift implementation of measures.

In two moderated panel discussions, the speakers shared and discussed current positions, latest findings and developments, the vision of the European Chemicals Strategy as well as international plans for research-based and appropriate activities and solutions.

Key demands were:

- The establishment of reliable risk assessment instruments based on the latest human and ecotoxicological basic data, reliable measurement data and verified methods of analysis
- The need for biomonitoring studies to predict harmful or adverse effects on potential receptors
- The development of technically feasible, effective and reasonable remediation measures for possible contamination scenarios and location conditions, taking relevant interfaces with environmental law into account
- Harmonisation of European and national regulatory approaches to soil, water, waste and waste water
- The use of the EU Green Deal to finance concerted research

The second round of discussions then turned to the topic of the future and participants debated whether PFAS could serve as a blueprint for emerging pollutants. One of the lessons learned from PFAS is that environmental policy should not just react, but must also take preventive actions. Although the assessment of chemicals under REACH is on the right track in Europe, conclusive data is often lacking to reliably determine the impacts of substances or mixtures on the environment and their dissemination into the environment. Options for remediation do not play a role, for instance under REACH, as the regulation assumes that companies use their chemicals safely and thus that their use cannot pose a risk to humans or the environment. Authorities, the research community, but also the public are called on to scientifically examine and understand this matter and to ask inconvenient questions.

The conference highlighted the enormous interest of different groups in PFAS and that we can learn a great deal from one another. A key to the future may therefore be to not only consolidate this interdisciplinary dialogue, but also to translate it into closer cooperation.