



EURO-INBO 2025 – Session 4 Report

Towards the Good Ecological Status: Fighting Emerging Pollutants with Innovative Solutions



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Inviting authorities:



In partnership with:



Thematic Context

Good surface water status means the status achieved by a surface water body when both its ecological status and its chemical status are at least « good ». The Water Framework Directive (WFD) describes the good ecological status of water bodies, taking into account a number of quality elements: physico-chemical, as well as biological and hydromorphological. This status is determined by the gap in relation to "reference conditions". The good chemical status of a water surface body is assessed on the basis of respect for environmental quality standards (EQS), which are threshold values for the concentration of certain pollutants. These quality criteria are monitored through a monitoring program implemented in all Member States. The WFD set a target of good ecological status for all water bodies in the European Union by 2027, and this target will not be met: in 2021, only 37% of the surface water bodies had achieved good or better ecological status, and only 29% were in good chemical status.

Furthermore, achieving this objective is made even more complicated by the impact of emerging pollutants, recently taken into account. These emerging pollutants include pharmaceutical metabolites, micro and macro plastics, and certain non-degraded pharmaceutical products. The Directive 2008/105/CE on environmental quality standards (EQS) set concentration limits for 33 priority substances that present a significant risk to the aquatic environment and for 8 other pollutants in surface waters. Since 2013, this list has

been extended to include 12 new substances, and in 2023, 23 more substances have been added, particularly certain pesticides (ex: glyphosate), pharmaceutical products and PFAS. These substances are now monitored at the European Union scale, and each Member state can adopt these relementation in an even stricter way. The European Strategy for plastics (2018) recently set a target for reducing plastic pollution, and its source reduction measures should help to better protect aquatic ecosystems.

Exemptions from the WFD's requirement to achieve good status are not a relevant response: they make such pollution invisible without reducing it.

Integrated Water Resources Management at basin scale can contribute to facing these emerging pollutants. The monitoring of these pollutants and the identification of their sources can be strengthened. Basin management plans and associated programs of measures can include actions to reduce these sources (ex: towards a zero discharge of industrial effluents, limiting agricultural inputs), intercept them and treat them (artificial wetland, buffer zones, sediment treatments). Incentive Taxes and subsidies can also be implemented.

For the safety and health of the environment and people, these solutions to facing emerging pollutants are necessarily in their early stages.

SESSION 4 - TOWARDS THE GOOD ECOLOGICAL STATUS: FIGHTING EMERGING POLLUTANTS WITH INNOVATIVE SOLUTIONS



Mr. Bernard De Potter
General Administrator, Flemish
Environment Agency (VMM),
Belgium



Ms. Fernanda Moroni
Head of Technical Sector 2 "Water Planning and Protection", Officer, Environment, Ecosystems,
Po River District Basin Authority Biological Resources Department,
French National Research Agency



Mr. Benjamin Lopez
Water4All Partnership CEO & Scientific



Mr. Filippo Brandolini
President, Utilitalia
(Federation of Water,
Environment and Energy
Companies), Italy



Dr. Nicole Gallina
Secretary General,
International Commission for
the Protection of Lake
Geneva (CIPEL)



Mr. Igor Gopchak
Head, State Agency of Water
Resources of Ukraine (SAWRU)

Session Report

Introduction

This session addressed one of the most technically complex and politically sensitive issues in water management today: the growing burden of emerging pollutants. These include a wide range of substances—from pharmaceuticals and pesticides to PFAS and industrial chemicals—that are not always covered by existing regulatory frameworks, but are increasingly detected in water bodies across Europe.

What emerged throughout the presentations and exchanges was the sense that we are measuring more, we know more, but this has not yet translated into systematic responses on

the ground. Good status remains out of reach in many places. Regulatory and technical hurdles persist, and institutional coordination is often lagging.

The session brought together perspectives from Belgium, Italy, Ukraine, Switzerland, and the EU research landscape. Despite their different contexts, several common messages and tensions emerged, along with some promising solutions.

Key challenges

1. Persistent failure to meet WFD objectives

Mr. Bernard De Potter from the Flemish Environment Agency reminded the audience that despite extensive monitoring efforts, the region had not achieved good status in 2021—particularly in protected areas used for drinking water. This, he noted, is not just a matter of insufficient action, but of systemic blockages: “We measure more and more, but the policy decisions often remain frozen.”

The issue is compounded by a very strict interpretation of the deterioration principle, following the Weser judgment¹. Even minor traces of PFAS, for example, can now block major infrastructure projects. This legal rigidity, while well-intentioned, often leads to standstill rather than action, especially when dealing with complex or not-yet-regulated contaminants.

2. Fragmentation between science, policy and practice

Mr. Benjamin Lopez, representing the Water4All Partnership, pointed to a persistent disconnect between research and field implementation. He described a system where researchers and basin authorities often work in parallel rather than together. The result is that valuable knowledge does not reach the hands of those who need it most—local decision-makers, water utilities, and the permitting authorities.

His diagnosis was clear: the problem is not a lack of innovation or knowledge. It's that transfer mechanisms are weak, and policy instruments are not designed to absorb and use new knowledge

effectively. “We need to act on all fronts... transfer research results to policy; connect problem owners with solution providers.”

Response strategies and tools

1. Policy plans and legal innovation

Belgium has launched a dedicated PFAS Action Plan, linked to a broader Policy Plan on Substances of High Concern. These plans aim not just to control pollution, but to create policy space—space where actors can act with clarity and responsibility. Flanders plans to invoke Article 4.5 of the WFD in its 4th RBMP to adopt less stringent objectives, where justified. This is a sign that some flexibility is being reintroduced, after years of cautious interpretation.

Meanwhile, Italy is exploring how to better apply the polluter pays principle at the basin level. Ms. Moroni, from the Po River Basin Authority, raised an important question: if a treatment plant only achieves 50% Chemical Oxygen Demand removal, should it be held liable? Her answer: if the result is pollution and the cause is clear, then yes, the polluter must pay.

2. Innovative monitoring and treatment approaches

Several speakers underlined the need for new measurement tools. Non-target screening, suspect screening, and effect-based monitoring are no longer theoretical—they are being piloted and, in some cases, scaled. But the major barrier is regulatory recognition. These methods need to be accepted as part of the legal monitoring toolkit, which is currently under negotiation at EU level.

On the treatment side, technologies such as foam fractionation and destruction techniques for PFAS are in early testing

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<https://curia.europa.eu/jcms/upload/docs/application/pdf/2015-07/cp150074en.pdf>

phases. Traditional methods (e.g. activated carbon, membranes) work for long-chain PFAS, but not for the more mobile short-chain variants. Belgium's Knowledge and Innovation Centre for Remediation (KIS) brings together researchers, industries, and public authorities to test and accelerate these solutions.

Transboundary and crisis contexts

Two interventions stood out for their focus on larger-scale coordination. Ms. Nicole Gallina of CIPEL outlined how Switzerland and France are jointly monitoring PFAS in the Rhône and Lake Geneva systems. The findings are sobering—more than half the samples show contamination—but the joint monitoring framework helps align policy responses across borders.

Mr. Igor Gopchak, Head of Ukraine's Water Resources Agency, shared a striking update: despite the ongoing war, Ukraine has approved its first set of River Basin Management Plans, including over 1,600 measures and nearly €8 billion in needs. The plans include investment in wastewater, pollution control, and intersectoral coordination. The war has exacerbated pollution risks (e.g. fuel spills, chemical leaks), but it has also sharpened the sense of urgency around water security.

Conclusions and recommendations

Several key takeaways emerged from the presentations and the Q&A:

Legal flexibility is needed. The current interpretation of deterioration may be well-meaning, but it is freezing necessary action. Greater use of Article 4.5 and clearer guidance on Article 4.7 are needed.

We also need to:

- recognize new pollutants faster, and equip monitoring systems accordingly. Emerging does not mean new—many of these substances have been around for decades.
- bridge the gap between research and the field. Living labs, matchmaking platforms, and real co-design are essential to make innovation usable.
- hold polluters accountable, but also give operators tools to act. Permitting must become both stricter and more workable.

Transboundary coordination is not optional, especially for rivers like the Rhine, Meuse, Danube, and Rhône. Shared problems require shared governance.

The session showed that while the tools are evolving, the institutional and political framework still needs to catch up. But with initiatives like Water4All, the KIS, and the commitment shown by all speakers, there is cause for cautious optimism. The road ahead will be technical, legal, and political—but it is finally becoming visible.

