3 April 2026

Targeted review of the Water Framework Directive

EPMF input – Call for Evidence

The European Precious Metals Federation (EPMF) is an international trade association representing the interests of the precious metals industry in Europe. The main purpose of the EPMF is to promote and support the interests of the European precious metals industry, including refining, recycling, trading, and fabrication of precious metals such as gold, silver, platinum, and palladium.

The EPMF aims to promote a fair and transparent precious metals market, as well as to represent the interests of its members in discussions with regulators, policy makers, and other stakeholders. The organization also seeks to provide information and resources to its members, including market data, analysis, and industry insights.

1. Introduction

The EU precious metals industry is fully committed to the objectives of the Water Framework Directive (WFD). However, the current implementation of the Directive has created inconsistencies that now hinder the industrial transformations required for the EU to achieve strategic autonomy. We welcome the European Commission's recognition of these obstacles and its commitment to conducting a 'stress test' of the WFD through new guidance and targeted revision.

To achieve the twin transition and the goals of the EU Water Resilience Strategy, industry must be empowered to innovate. **Nevertheless, current interpretations of WFD principles have progressively created a 'deadlock' for industrial permitting, affecting both existing plants and cutting-edge projects**. This is evidenced by the overly rigid interpretation of the non-deterioration principle following the Weser ruling, whereby even minimal discharges can be blocked if a single quality element is failing. Furthermore, the lack of practical exemptions under Article 4.7 and the 'one-out, all-out' principle, **which disregards holistic ecosystem health**, have created systematic barriers. This paper outlines the urgent technical and legal adjustments needed to ensure the efficient and achievable implementation of the WFD. By refining the scientific basis of water quality assessments and ensuring the WFD enables strategic projects, we can protect Europe's water resources while promoting the socio-economic development and innovation that are essential for our global competitiveness.

This paper covers:

- Point 1 provides a reminder of the issues at hand. The subsequent points look at proposal solutions to the aforementioned issues.
- Point 2 examines solutions to Article 4.7 exemptions.
- Point 3 examines practical solutions to EQS derivation issues.
- Point 4 examines solutions to issues stemming from the links between the Industrial Emissions Directive (IED) and the Water Framework Directive (WFD).

- Point 5 discusses solutions for phasing out naturally occurring substances.
- Lastly, Annex I provides the silver case exemple.

2. Challenges leading to systematic barriers to permitting

Current **interpretations of WFD principles** have progressively **created a "deadlock" for industrial permitting**, in existing plants and even for projects that represent the state-of-the-art in environmental performance:

- **Overly rigid interpretation of the non-deterioration principle**: Following the ECJ's Weser ruling, Member States are blocked from authorising new discharges -even minimal- if any individual quality element is already in failure. The recent WFD review also sets this definition in the core of the directive.

- **Links between the Industrial Emissions Directive (IED) and the WFD**: Both Article 18 and Article 21 of the IED connect directly to the WFD and indicate that the competent authorities can set additional permit conditions where meeting an EQS would require stricter conditions than those achievable using Best Available Techniques (BATs). However, that may lead to setting Emission Limit Values (ELVs) that are hardly technically and economically feasible. While the Best Available Techniques Conclusions are produced after a lengthy data-driven exchange between the Commission and a wide range of stakeholders, the derivation of EQS values lacks transparency and a sound scientific methodology as explained in the following point.

- **Environmental Quality Standards** (EQSs): EQSs that are set close to or below background/essentiality levels and/or below detection limits, make compliance technically or scientifically unfeasible. Furthermore, some EU countries impose more stringent requirements than those mandated by EU legislation. This includes EQSs that can vary significantly between Member States[1] (MSs), or regions of the same MSs, which complicates compliance and environmental permits (specifically in cross boarder rivers).
  In addition, the derivation of EQS values lacks transparency, and it does not always follow the principles of the CIS guidance 27[2]. This has resulted in the absence of a well-documented framework for the prioritisation and selection of substances, as well as gaps in the underlying data.

- **The "One-Out, All-Out" Principle**: Water bodies fail quality status even if only one quality element does not meet the required status, regardless of the overall water quality, and fails to show improvement. This is especially important to know, given that more priority substances (PS) are added with each cycle and, with this last revision, river basin-specific pollutants (RBSPs) are being moved from the ecological to the chemical status.

- **Lack of workable exemptions for industrial projects under Article 4.7**: Despite being a core WFD feature, exemptions apply narrowly to hydromorphological changes, excluding both biological and physico-chemical characteristics (as part of ecological status), and not applying to

[1] For both Priority Substances (PS) and river basins specific pollutants (RBSPs).
[2] Guidance No 27 - Deriving Environmental Quality Standards - version 2018.pdf

the chemical status. This issue was acknowledged in the revision of the UWWTD which resulted in its specific exemption. The recent review exercise of the WFD also introduced exemptions for very specific type of activities carried out by certain Member States.

- **Infeasibility of phasing out naturally occurring substances that are listed as Priority Hazardous Substances (PHS):** Article 16 of the WFD mandates the phase-out of priority hazardous substances (PHSs) within 20 years of their listing. While the industry is committed to reducing emissions to the lowest technically feasible levels, achieving a complete "zero emission" target for naturally occurring elements like Cadmium (Cd) and Lead (Pb) is physically impossible. Because these metals are ubiquitous in the environment, they enter industrial facilities and urban wastewater plants through natural erosion, rainwater, and river flows. Furthermore, since metals do not occur in isolation in natural ores or recycling streams, even the application of Best Available Techniques or restriction of the use of these substances cannot eliminate trace emissions resulting from these natural background concentrations and industrial processes.

Consequences:

- **For industry**: Permits are delayed, denied, or withdrawn, even when operators meet Best Available Techniques (BAT) under the Industrial Emissions Directive (IED). This erodes investor confidence, stall innovation and threatens the EU's Strategic Autonomy.
- **For the environment**: A focus on single failing factors ignores holistic ecosystem health and can block projects that provide a net environmental benefit.
- **For society**: Local communities face lost innovation and jobs, sacrificing socio-economic development despite continued protection of human health.

3. Non-deterioration & article 4.7. exemptions

The non-deterioration principle is one of the main pillars of the Water Framework Directive (WFD). However, its current application, based on the 'Weser ruling', has become a **significant barrier to strategic industrial projects**. By preventing the deterioration of a single quality factor rather than considering the overall ecological health of a water body, the framework creates a 'deadlock' for permits. This is particularly problematic as the EU seeks to **balance high environmental standards with the need for strategic autonomy and water resilience**. Although the recent revision of the Urban Wastewater Treatment Directive (UWWTD) introduced specific derogations for wastewater treatment plants, Article 4.7 currently does not adequately cover industrial activities. This results **in fragmented exemption conditions**, particularly since the introduction of Articles 4.7a and 4.7b[3] in the recent amendment to the text. This is particularly problematic for Strategic projects (as defined in the CRM act), which are essential for the EU's green transition, yet face rigid discharge requirements.

In order for the WFD to remain a functional tool for sustainable development, the regulatory framework must take into account the complex technical realities of modern industry.

[3] *Please note that these two exemptions do not apply to industrial projects and concern very specific types of activities (for example, sediment removal for the construction of dikes)*

Modernising facilities often involves an integrated approach to pollution control, whereby high-efficiency gas cleaning systems, for example, shift pollutants from air to water in order to improve overall environmental performance. However, these systems can cause temporary variations in water discharge that rigid, short-term derogation periods fail to accommodate. Similarly, the **drive for circularity is often penalised by current interpretations that link compliance to discharge concentrations rather than total environmental impact**. Strategic projects **designed to maximise internal water reuse** and minimise freshwater intake may be forced towards 'zero liquid discharge' solutions such as evaporators. Not only do these systems **increase energy consumption and waste production**, they can also **reduce total water resilience** by removing water from the circular loop, which directly contradicts the goals of the Water Resilience Strategy. Furthermore, in some regions, industries must utilise water sources that already exceeds EQS values or from saline groundwater, which naturally contains substances such as nitrogen. **Treating these large volumes,** for cooling processes for example, is often disproportionate in terms of both operations and economics, especially when discharged into tidal waters where the impact is negligible.

Key recommendations and solutions :

- **Expand the scope of Article 4.7:** to explicitly allow exemptions for industrial projects (i.e. chemical status exemptions) provided they meet strict environmental safeguards. This will ensure that projects of overriding public interest can proceed under rigorous mitigation requirements.
- **Adopt a holistic environmental benefit approach:** Shift the focus from 'single-factor' concentration limits to net environmental benefit, recognising that a project can reduce a facility's total footprint even if there are minor fluctuations in specific water elements.
- **Focus on operational stability and performance**: Ensure that the WFD recognises that innovative environmental technologies require a technical commissioning phase in order to reach stable operation. Instead of time-limited exemptions, the framework should allow for a performance-based transition that accounts for the initial fluctuations inherent in the start-up of state-of-the-art technologies, thereby ensuring long-term compliance without penalising the transition period itself.
- **Align with the Water Resilience Strategy**: Reward innovation and circularity by providing 'tailor-made' solutions that enable Member States to authorise projects that contribute to EU strategic goals without compromising long-term water health.

4. Environmental Quality Standard (EQS) derivation

For the Water Framework Directive (WFD) to function as a driver of both environmental protection and industrial competitiveness, the **derivation of Environmental Quality Standards (EQS) must be based on site-specific science**. **To accurately reflect the ecological risk posed by metals, we advocate a harmonised approach based on bioavailability modelling and contextual 'reality checks'.** Calculating EQS based on local parameters such as pH and hardness ensures **that limits target the fraction of a metal that poses an actual risk to aquatic life**. Furthermore, **these values must be cross-referenced against natural background concentrations** and **biological essentiality levels**. Setting standards below naturally occurring levels or the concentrations required for organism health is scientifically indefensible and leads to systematic 'false positive' failures.

Current inconsistencies and flaws in the process of deriving EQS create significant bottlenecks for the metal industry. **Failure to implement the guidance** setting out the harmonised, bioavailable-based methodology leads to vastly different standards for the same river basins when they cross national borders**, creating 'gold-plating'** issues that delay permits and disrupt the internal market. Additionally, the prioritisation process often lacks transparency: substances such as silver have been included despite having low risk-ranking scores, with implementation costs outweighing environmental benefits. Similarly, proposed revisions for metals such as nickel have been found to omit recent scientific data and updated bioavailability models, which has the potential to set limits below natural background levels. Finally, the push for a harmonised copper EQS has bypassed the simplification agenda, rushed technical discussions and the proposed an assessment factor despite the high level of available data.

These procedural issues had led to setting toxicologically irrelevant and technically unfeasible standards.

Key recommendations and solutions:

- **Mandate bioavailability-based EQS**: Ensure that all metal standards are derived using the most recent models in order to avoid 'false positive' failures, and to ensure that standards reflect real-world risks.
- **Implement a 'natural background' safeguard**: Prohibit EQS values from being set below documented natural background concentrations or levels of biological essentiality, in order to maintain scientific credibility.
- **Harmonise cross-border standards**: Enforce a unified methodology for transboundary water bodies and prevent national 'gold-plating' from creating barriers to industrial permitting.
- **Ensure transparency and scientific rigour in prioritisation**: Re-evaluate the prioritisation process to ensure that it is strictly risk-based and that sufficient time is allowed for technical input from stakeholders.

5. Links between the Industrial Emissions Directive (IED) and the Water Framework Directive (WFD)

A critical bottleneck in the current legislative landscape is the relationship between the Industrial Emissions Directive (IED) and the Water Framework Directive (WFD). Under the current framework, notably Article 18 of the IED, competent authorities may set permit **conditions that are stricter than those achievable** through Best Available Techniques (BAT) if it is deemed necessary to meet an Environmental Quality Standard (EQS). However, this often results in Emission Limit Values (ELVs) being imposed that are **technically or economically impossible to reach**, disregarding the rigorous, data-driven process that defines BAT-AELs.

In order for the WFD to support a functional permitting system, it is crucial to acknowledge **that EQSs and ELVs are not equivalent metrics**. They are derived using different methodologies and measured at different points. Imposing ELVs that surpass the lowest technically feasible BAT levels without **first assessing an installation's actual relative contribution to pollution places a disproportionate burden on industry**. This is particularly true in areas where **water quality failure is driven by multiple sources**, such as urban runoff or historical background concentrations. To resolve this impasse, the regulatory framework must adopt a **more evidence-based approach that makes use of mixing zones as set out in the EQSD**. Ensuring that EQS compliance is measured after a **reasonable zone of initial dilution** would allow the framework to protect the environment while maintaining the technical and

financial feasibility of industrial operations. While we acknowledge that most of the **recommendations below should be implemented at the IED level**, we strongly encourage the EU Commission to also consider these aspects from the WFD perspective in the targeted review, where possible.

Key recommendations and solutions:

- **Establish a technical feasibility check**: Clarify that, when stricter conditions are applied to fulfil WFD objectives, resulting Emission Limit Values (ELVs) should not be set below the lower end of the EU BAT-AEL range, while respecting the limits of current technology.
- **Mandate contribution assessments**: A formal assessment of an installation's specific contribution to local pollution should be required before conditions stricter than BAT are imposed. Any additional measures should be proportionate to the installation's impact compared to that of other relevant sources in the area.
- **Ensure the operationalisation of mixing zones**: Proactively advocate for the implementation of 'mixing zones' as defined in the EQSD. Compliance with environmental quality standards should be assessed at the edge of these zones to ensure that industrial discharges are evaluated based on their impact on the receiving environment rather than on concentrations at the end of the pipe.
- **Require impact monitoring for stricter conditions:** Where stricter-than-BAT conditions are imposed, the relevant authorities should be required to monitor and demonstrate that these measures result in quantifiable and measurable improvements to the status of the water body.
- **Decouple EQS from ELVs:** Maintain a clear legal and technical distinction between EQS (ambient water quality) and ELVs (point-source emissions) to prevent the automatic and scientifically unsound conversion of one to the other.

6. Phasing out naturally occurring substances

The Water Framework Directive (WFD) requires the total cessation or phasing out of discharges, emissions and losses of priority hazardous substances (PHS) within 20 years of their listing. While this 'zero emission' target is achievable for man-made synthetic compounds, it **is physically and scientifically impossible for naturally occurring elements** such as lead (Pb) and cadmium (Cd). These metals are ubiquitous in the Earth's crust and **enter the water cycle through unavoidable natural phenomena** such as erosion, rainwater runoff and natural river flows.

The technical challenge is further accentuated by the fact **that metals never occur in isolation**. In both primary production and the circular economy, 'accompanying metals' are intrinsically linked to the target material. Recycling facilities, in particular, process complex streams where the incoming composition cannot be fully controlled. While the industry is fully committed to applying Best Available Techniques (BAT) to keep emissions at the lowest technically feasible levels, it cannot eliminate trace amounts resulting from natural background concentrations. The WFD currently recognises the objective of reaching concentrations in the marine environment that **are near background values for naturally occurring substances** but **fails to apply this same scientific logic** to freshwater aquatic environments. Aligning these objectives is crucial to ensure the legislative framework remains realistic, focusing on mitigating anthropogenic risk rather than pursuing an unattainable 'zero' for elements that are part of the planet's natural composition.

Key recommendations and solutions:

- **Differentiate between synthetic and natural substances**: Amend the WFD to distinguish between man-made synthetic substances, for which 'close to zero' remains the objective, and naturally occurring substances, for which the goal should be to achieve concentrations near natural background values.
- **Harmonise freshwater and marine objectives**: Extend the existing principle for the marine environment to all aquatic environments, acknowledging that 'zero discharge' is not a scientifically viable target for naturally occurring elements.
- **Recognise the 'intake' reality**: Ensure that compliance assessments account for the presence of naturally occurring substances in source water used by industrial and recycling facilities, focusing on net contribution rather than absolute concentration.
- **Support the circular economy**: Protect the viability of the metal sector by ensuring that the presence of unavoidable trace metals in industrial streams, does not result in a 'permitting deadlock', provided all practicable mitigation measures and Best Available Technology (BAT) are applied.

7. Conclusions

Effective water management requires us to move beyond a 'one-size-fits-all' approach and embrace site-specific scientific realities. While the current 'one-out, all-out' principle is intended to ensure high protection, it often results in a binary assessment that masks genuine ecological progress and ignores the holistic health of ecosystems. This regulatory inflexibility, coupled with the approaching and uncertain 2027 compliance deadlines for Member States, poses a significant challenge to long-term industrial planning.

Such uncertainty undermines investor confidence and jeopardises the development of the water-saving technologies and circularity innovations that Europe needs to lead the global green transition. For the EU to secure the investments necessary for its Water Resilience Strategy, the WFD must evolve into a more nuanced instrument that rewards innovation, recognises the physical reality of naturally occurring substances and provides the legal certainty required to maintain a robust industrial base in Europe. Strengthening the scientific integrity of the directive will ensure environmental protection and industrial resilience go hand in hand, securing a sustainable, water-secure future for European society.

8. Annex 1: The silver case

According to the relevant legislation, only "substances found to pose a significant risk" should be considered for inclusion on the Priority Substances list. **There is clear scientific evidence that silver poses low or no risk to or via the aquatic environment**:

- The revised STE score[4] for silver calculated by the Joint Research Centre (JRC) is 0.9[5], which is considered low risk. According to the JRC's own guidelines for the selection of candidate priority substances, silver should not have been shortlisted.
- Robust scientific and technical data further evidence that there are insufficient grounds for silver to be added as Priority Substance[6]. This means that Member States will squander valuable time and resources on routinely measuring it, while bringing no benefit to the aquatic environment.
- The selection of silver has not been based purely on risk but also on a concern related to anti-microbial resistance (AMR) which was only discussed very briefly in the silver EQS dossier. This concern has been insufficiently investigated for silver.
- While there are some inconsistencies in the EC Impact Assessment report related to silver, it is mentioned that the environmental benefits of adding silver as a Priority Substance are small, while costs are high, meaning the costs outweigh the benefits of addition. However, AMR has subsequently been used as a criterion to justify the addition of silver.
- The proposed EQS of 10 ng/l is overly conservative and not scientifically justified. A peer-reviewed publication on the chronic freshwater dataset for silver and the scientifically correct threshold is available[7], and supportive of the afore-mentioned statement in this paragraph.
- From the available silver monitoring data, it is clear that freshwater silver concentrations are very low and typically either below or very close to limits of quantification (LOQ). Given the very low EQS currently proposed for silver, it is anticipated that several countries will encounter practical problems to monitor silver at these analytically challenging concentrations.

For all these reasons and more, the European Commission's proposal should not have prioritised silver, and compliance issues including permitting issues will most likely arise as a consequence.

---

[4] The STE score exploits the inherent variability of measurements in the monitoring dataset and evaluates the Spatial, Temporal and Extent (STE) of PNEC exceedances in order to rank and classify the substances for the risk they pose to European surface waters (see Carvalho et al. 2016). The STE Score is the agreed methodology developed by the Joint Research Centre (JRC) and various stakeholders for the monitoring-based prioritisation.

[5] The Silver EQS dossier on CIRCABC: https://circabc.europa.eu/ui/group/9ab5926d-bed4-4322-9aa7-9964bbe8312d/library/fae4948d-3600-42cc-889c-0b58a4a94269/details

[6] See Arijs et al. 2022 showing that silver does not pose a risk to the freshwater environment in those countries where a meaningful data assessment is possible and Arijs et al. 2021 for a scientifically based derivation of a threshold value for silver.

[7] Arijs et al., 2021