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Towards a cleaner EU industrial production

The EU's zero-pollution ambition and the role of the Industrial Emissions Directive

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The EU has set the goal of achieving zero pollution for a non-toxic environment by 2050. This would mean reducing air, water, and soil pollution to 'levels no longer considered harmful to health and natural ecosystems and respecting the boundaries the planet can cope with'¹. The revision of the EU's Industrial Emissions Directive (IED) can be the flagship to translate EU's zero pollution ambition for key industries into practice. While the proposal of the European Commission adopted in April 2022² doubtlessly represents a step forward towards cleaner industrial processes, there is still more potential to use and more clarification needed to ensure a transformation towards zero polluting industry, as outlined in this briefing.

Industrial Emissions Directive (IED): the main EU instrument regulating the environmental impact of industrial installations. The IED lays down rules in order to 'prevent or, where that is not practicable, to reduce' and as far as possible eliminate pollution, to protect the environment and human health. By doing so, it seeks to comply with the 'polluter pays' principle, and the principle of pollution prevention, giving priority to intervention at source. The Directive also aims to prevent accidents and limit their consequences, to ensure the efficient use of resources incl. energy, to prevent the generation of waste, and to avoid any risk of pollution upon definitive cessation of activities (IED Recital 2, and Article 11). All environmental aspects are taken into account, as per the so-called 'integrated approach', which is one of the basic pillars of the IED. Around 50 000 industrial activities of the most polluting and climate damaging sectors listed in Annex I of the IED are required to operate in accordance with a permit. The permit conditions are based on the IED provisions, most notably the sector-specific EU BREFs.

EEB is publishing a series of briefings on different aspects relevant to the review of the IED. All briefings can be accessed and downloaded here: https://eipie.eu/briefings-by-eeb/ Or scan this QR code:



¹ https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52021DC0400&from=EN

² The Industrial Emissions Directive - Environment - European Commission (europa.eu)

Best Available Techniques Reference Documents (BREFs): industry-specific documents which define the most effective techniques that industry can employ to minimise the environmental impact of their activities – the so-called 'Best Available Techniques', or BAT. BATs are already per today's definition technically and economically viable. The BAT conclusions (included in the BREFs) are used as a reference to set permit conditions such as emission limit values or other environmental performance levels, which conditions industrial installations must comply with.

Best Available Techniques – Associated Emission Levels (BAT-AELs): the emission levels achieved by the application of BAT.

Best Available Techniques – Associated Environmental Performance Levels (BAT-AEPLs): the environmental performance levels achieved by the application of BAT.

Industrial Emissions Portal Regulation (IEPR): IEPR is the proposal for a revised Regulation establishing the European Pollutant Release and Transfer Register (E-PRTR), a Europe-wide register providing public access to key environmental data from industrial activities (incl. those covered by the IED). It is intended to implement the 2006 Kyiv Protocol on PRTRs, and refers to the triple objective of (1) enhancing public access to information that would (2) facilitate public participation in environmental decision-making, and (3) contribute to the prevention and reduction of environmental pollution. The current reporting interface is hosted by the European Environment Agency.

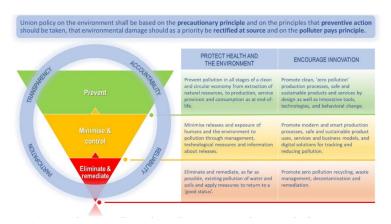
What's at stake?

I. All we need: Prevention, prevention

The IED lays down rules on 'integrated prevention and control of pollution' in order to 'prevent or, where that is not practicable, to reduce' and as far as possible eliminate pollution arising from industrial activities in compliance with the principle of pollution prevention, giving priority to intervention at source (Recital 2, Art. 1 IED). The Directive also aims to prevent the generation of waste, while ensuring prudent management of natural resources.³

Those principles (also enshrined in Art. 191 of the Treaty on the Functioning of the European

Union (TFEU)) are all the more important in light of the new "zero pollution hierarchy" that the Commission provides in its Zero Pollution Action Plan (COM(2021) 400 final). highlights that "it is high time to 'reverse the pyramid' of action and rethink the way goods and services are designed, produced, delivered, performed and/or used and disposed of. This means that, first of all,



pollution should be prevented at the source. Where fully preventing pollution from the outset is not (yet) possible, pollution should be minimised.

A strengthened IED is the perfect tool to bring the zero-pollution hierarchy into reality. And the time to act is now: Environmental pollution negatively affects people's health and quality of life. It is linked to a range of diseases, including cancer, heart disease, stroke, respiratory disease, and neurological disorders. Despite tangible progress, in 2015 pollution still led to an estimated 9 million premature deaths worldwide (16% of all deaths) – three times more deaths than from AIDS, tuberculosis, and malaria combined and 15 times more than from all wars and other forms of violence. In the EU, every year, pollution causes 1 in 8 deaths⁴. Pollution is also one of the five main causes of biodiversity loss. It represents a significant cost for society, in terms not only of health-related expenditures, but also of reduced yields (in agriculture, fisheries and tourism), as well as remediation costs (water treatment, soil decontamination, marine depollution) and loss of ecosystem services.

³ On circular economy aspects, please refer to the related briefing: <u>Briefings by EEB - EIPIE</u>

⁴ https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52021DC0400&from=EN



Air pollution: it is the prime environmental factor driving disease, with approximately 400 000 premature deaths attributed to air pollution in the EU every year. The greatest contributor to air pollution is the combustion process, in particular that of fossil fuels and biomass for energy generation. A 2021 EEA briefing reports that in 2017, air pollution emitted from large industrial sites in Europe cost society between €277 and €433 billion (about 2-3 % of EU GDP that year)⁵.



Water pollution: 20 years after the introduction of the EU Water Framework Directive⁶, less than 40% of EU's surface water bodies are in good chemical status. Additionally, there is mounting evidence that the environmental effects of chemical mixtures in aquatic environments are underestimated and underreported.⁷ To be reminded and highlighted that since 1970 there has been an 84% collapse in freshwater species populations globally, driven by habitat loss and pollution⁸. Industrial sources have a significant contribution here too: the main reason for the failure of good chemical status in over 30% of EU's surface water bodies is the atmospheric deposition of mercury⁹ with coal combustion being the main emission source to air in the EU¹⁰.



Soil pollution: globally, the main sources of contaminants contributing to soil pollution are (in order of importance) industrial activities, mining, waste treatment, agriculture, fossil fuel extraction and processing, and transport emissions. Almost two-thirds of point-source soil pollution in Europe can be traced back to industrial and commercial activities and waste disposal and treatment. Polluted soils can further become a source of pollution for groundwater, when contaminants leach, and for fresh water bodies and the marine environment, as contaminants can be transported away from sites through wind and water erosion. In the EU, 60 to 70% of soils are unhealthy, partly because of pollution. There are 2.8 million sites where polluting activities have taken or are taking place. Only 24% of those are inventoried, and 65 500 have been remediated. The costs associated with soil degradation in general exceed €50 billion per year.

For more information, please refer to the 2022 briefing on zero-pollution ambition, prepared by the European Parliamentary Research Service: <u>The EU's zero pollution ambition (europa.eu)</u>

⁵ Counting the costs of industrial pollution — European Environment Agency (europa.eu)

⁶ https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02000L0060-20141120

⁷ Chemicals in European waters

⁸ https://academic.oup.com/bioscience/article/70/4/330/5732594?login=false

⁹ https://www.eea.europa.eu/publications/drivers-of-and-pressures-arising

¹⁰ https://eeb.org/library/tackling-mercury-pollution-of-eu-waters-why-coal-combustion-must-end-by-2027-at-the-latest/

II. Does the polluter pay?

The IED also seeks to implement the EU's polluter pays principle (PPP) (Recitals 2, 25). This principle requires that polluters should bear the costs of their pollution including the cost of measures taken to prevent, control and remedy pollution and the costs it imposes on society. PPP is a core principle of EU environmental legislation and policy, and it is enshrined in Art. 191(2) of the Treaty on the Functioning of the EU.

Nevertheless, according to a special report²³ by the European Court of Auditors in July 2021, the PPP is applied unevenly across sectors and member states, while its coverage remains incomplete. With regards to environmental liability, the Commission's actions to support member states' implementation of the Environmental Liability Directive had not solved key weaknesses, such as unclear key concepts and definitions and the absence of financial security in cases of insolvency. The EU budget is sometimes used to fund clean-up actions, that should under the PPP have been borne by polluters.

The IED revision presents an **unmissable opportunity to translate the PPP in explicit legal obligations**, notably through clearer IED provisions to avoid abuse of flexibilities, strengthened enforcement provisions (e.g., penalties and compensation rights)¹¹, and by demanding a fair quantification of the costs of air pollution via the use of the more protective European Environment Agency's Value of Statistical Life (VSL) method²⁴, whenever a cost-benefit analysis is required.

¹¹ On enforcement aspects, please refer to the related briefing: <u>Briefings by EEB - EIPIE</u>

Key priorities

I. Scope of IED: Ensuring all high-impact activities are tackled

The scope of activities of the IED is decisive to ensure that we achieve zero pollution, circular economy and climate neutrality targets in the most polluting and climate damaging sectors.

The "installation-focussed" scope of today's IED date back to 1996 and needs an overhaul. It should be redesigned so that it enables a broader approach as to the wider life cycle impacts of a given activity, or options to consider on how to best deliver a given product/service. As a faster and deeper transition of production methods is desired, the following industrial activities should be focused, to promote the alternative with the least negative environmental impact: energy production/conservation, water quality and supply services, transformation of plant/animal protein production, resource management, substitution of chemicals of concern, soil remediation/fertility. Adequate thresholds should be further defined in the co-decision process.

When it comes to the individual activities, the Commission's proposal on the revised IED is finally expanding its scope in particular on the extraction of industrial and metallic minerals, large-scale installations for the production of batteries and cattle farming, it still lacking the following:

- The inclusion of industrial cattle farming and lowering of thresholds for industrial pig and poultry farms is positive, but it comes at too high a price: A completely separate, but way weaker "lighter permitting regime" shall be invented for all agricultural farms (new Chapter IVa). On top, member states may even ignore even this permitting regime and ask only for registration instead of permits (amended Art. 4). Excluding most of IED's general obligations (e.g. the link to BAT Conclusions or environmental quality standards) and enforcement rules will weak the future implementation severely and undermine the positive environmental impact the scope extension could bring.
- Aquaculture is still missing completely, although it can be highly polluting industrial activity, while lacking an integrated EU aquaculture permit.
- We welcome the inclusion of batteries production and extractive activities. However, the inclusion of coal mining as well as upstream oil and gas activities should also be reconsidered, while remediation obligations on the operators should be clarified once such an activity is phased out.

II. Targeted pollutants: Ensuring all harmful pollutants are covered

When setting ELVs for polluting substances, the competent authority should consider all substances, including substances of emerging concern, which may be used, produced, and ultimately emitted from the concerned installation and may have a significant impact on the environment or human health.

Currently, individual polluting substances are listed in a non-exhaustive way in Annex II to the IED; which the Commission proposes to delete on the grounds of 'incompatibility with the holistic approach of the Directive, and because it does not reflect the need for competent authorities to take into account all relevant polluting substances, incl. those of emerging concern'; and be replaced by a reference to the list of pollutants in Annex II to

the European Pollutant Release and Transfer Register (E-PRTR)¹⁰. The deletion of IED Annex II, and its replacement by Annex II to the E-PRTR leaves several problematic classes of substances unaddressed, e.g., organophosphorus compounds and pesticides. This opens the door to potential regression of environmental protection. Regrettably, some substances or groups of substances are not or imperfectly covered by Annex II of the E-PRTR Regulation, which is a non-exhaustive list. Permit writers would not have any legal obligation anymore to consider all those doubtlessly relevant pollutants when writing permits and setting ELVs. This would be a clear step back. An alternative may be the overhaul of the Annex II to the IEP-R (ex E-PRTR) to include such substances, references to other Union legislation i.e., the Water Framework Directive's11 Annex VIII and X, as well as putting in place a mechanism that would allow for a frequent, swift update of the pollutants list when evidence for emerging pollutants becomes available. For more information, please see our dedicated briefings here: IEP-R https://eipie.eu/wp-content/uploads/2022/07/20220712-EEB-briefing-on-IEP_FIN.pdf and Loss of Annex II in IED https://eipie.eu/wp-content/uploads/2022/06/Annex-II-loss-IED-briefing.pdf.

III. Transformation Plans: Ensuring implementation of sufficient actions to make transformation happen

Achieving EU Achieving the EU objectives regarding a clean, circular and climate neutral economy by 2050 calls for a deep transformation of the Union's key industrial sectors. The transformation/transition plans/roadmaps with 2050 commitments are advocated by industry in various fora, notably the High-Level Group on Energy Intensive Industries and the Industrial Forum, hence the Commission's proposal on Transformation Plans (TP) is just formalising current initiatives. We welcome the forward-looking approach of the proposal, that shall demonstrate how installations will transform themselves 'in order to contribute to the emergence of a sustainable, clean, circular and climate-neutral economy by 2050' (new Article 27d). Moreover, we shall not forget that the transformation of the industry through improved environmental and human health protection rules, would further support the workforce and lead to the emergence of quality jobs where the industry itself becomes sustainable. Stricter standards would help attract investments to make the EU industry infrastructure fit for the zero-pollution ambition.

However, as the current proposal stands, the plans will be written up by operators for each installation and validated by auditors who will just formally check if minimum information (to be defined by the European Commission only in mid-2028) is included therein. There is **no control over the ambition level, effectiveness, and timeliness of these plans**. Hence, it is solely up to the operator's discretion to determine ambition, nature, pace, and scope of the transition. **No milestones/performance indicators** are set, **no specific actions** asked, **no monitoring** required. There is not even an option to review the plan's content by an authority, nor to review and update these plans in around 20 years of the transition period. Furthermore, the implementation of the TP depends on the good will of the operator. There is **no option for authorities to enforce** the inexecution of measures contained in the TP. Furthermore, **a 2030 deadline, the earliest for the submission of transformation plans by energy-intensive industries, is at odds with EU goals and planetary boundaries.**

Recommendations:

- Ensure an effective implementation and a possibility to enforce the TP by e.g., making its targets binding on the operator as part of their general obligations to be transposed into permit conditions (through amendments to Articles 11 and 14).
- Clarify the TP provisions, notably regarding:
 - the definition of performance pathways towards zero pollution, climate neutrality and a circular economy by 2050;
 - o the definition of intermediate milestones and key performance indicators at sector level (for similar activities), concerning (at least) the following five headline objectives: (1) climate neutral economy; (2) zero adverse impact to health and the environment from anthropogenic emissions, and deposition and exposure below critical loads and levels; (3) transition towards a circular economy for a resource-saving EU economy operating within planetary boundaries; (4) phase out and substitution of chemicals of concern; and (5) restoration of good ecological and chemical status of water. The Innovation Centre for Industrial Transformation and Emissions (INCITE) should be involved in the development of the indicators;
 - a plan for investments and concrete actions with intermediate target(s), dedicated arrangements with staff for implementation and measurement of progress against the applicable intermediate target(s);
 - o a firm commitment to review and revise the TP regularly;
 - the obligation to transparently report on TP implementation on a regular basis, etc.
- Advance the deadline for the first TP (e.g., 2025 or transposition deadline of IED, whichever comes earlier).
- Regarding critical infrastructure needs, where the main responsibility is upstream to the IED sectors (e.g., acceleration of renewable energy and green hydrogen deployment) the IED and related policy instruments should facilitate the sharing of efforts (see section 3 above).
- Due care is to be provided that the transformation process supports local and sustainable economic re-development, fully consistent with a socially acceptable 'just transition'.

IV. Effective implementation: Ensuring the use of the full potential of the IED to respond to the urgency of addressing pollution

a) Reducing pollution where possible - using the strictest emission limit values by default

The basis for setting pollutant emission limit values (ELVs) for installations is the determination of best available techniques and their associated emission levels at European level in the EU BREFs ('Best Available Techniques - Associated Emissions Levels' (BAT-AELs)). These BAT-AELs are typically expressed as ranges of achievable emission levels, rather than as single values. Per definition, any BAT-AEL, also the one at strictest end of the range, is a value that is reachable under technically and economically viable conditions.

The permit writer will (theoretically) set an ELV within this range with the objective to minimise the pollution of a given facility. What happens in practice, though, is that **ELVs** in permits are systematically set at the laxest end of the BAT-AELs range (as found during the IED evaluation process, this is the case for 80-85% of the cases), discouraging frontrunners from implementing more effective, innovative techniques for the protection of human health and the environment, thus resulting in emissions that could have been avoided.

Example: The EU BREF for large combustion plants (LCP BREF)¹⁴ states an achievable level of mercury emissions of <1-7 μg/Nm³ (air emissions) for lignite combustion. A footnote explains that the stricter end of the range is achieved by 'specific mercury abatement techniques', whilst the upper end is achieved only through co-benefit of existing controls. This allows operators to opt out, if they wish, from employing the most effective techniques, i.e., the dedicated mercury controls. This happened despite the fact that thermal combustion plants are responsible for 60% of mercury emissions to air¹5, and that atmospheric deposition of mercury is the reason why 30% of EU's surface waters fail to meet the mercury threshold value.¹617

To address this issue, the Commission proposes that 'the competent authority shall set the strictest possible emission limit values that are consistent with the lowest emissions achievable by applying BAT in the installation'. At the same time, however, 'the emission limit values shall be based on an assessment by the operator analysing the feasibility of meeting the strictest end of the BAT-AEL range and demonstrating the best performance the installation can achieve by applying BAT' (new text proposal for IED Art. 15 (3)).

This wording leaves again too much uncertainty how to implement a default-option to apply the strictest emission limit values. The revised provisions should be further clarified to ensure a level playing field across EU member states and industry, that also provides for a high level of protection of human health and the environment: the authorities should be explicitly required to set the ELVs at the lower end of the BAT-AEL range as a default, unless the operator demonstrates that applying the most effective BAT only allows meeting less strict ELVs (while such demonstration needs clear requirements). The upper end shall only be regarded as a 'safety net'. To be reminded here that the process of drafting the EU BREFs is driven by real operational data from plants operating under technically and economically viable conditions: this means that emission levels towards the lower end are achievable by full scale commercial plants (this is not a case of emerging techniques in pilot testing). The exact procedure to be followed by the operator, when deviating from the lower end of the BAT-AELs, shall be set in an Annex to this Directive. The public concerned should have a say in this process: the right for timely access-to-information to all related documentation, and public participation in the decision-making process, should be made explicit.

b) Limiting derogations to the minimum

IED Art. 15.4, allowing operators to derogate from the upper end of the BAT-AEL range (if deemed that this would lead to disproportionately higher costs compared to environmental benefits), is further **affecting the effectiveness of the IED and undermines the BAT-based permitting concept. Numerous abuses have been**

witnessed by permitting authorities, esp. in the combustion sector: derogation procedures turned into a 'time-winning exercise' to the benefit of the polluters, lack of proper justification when derogations are granted, biased cost-benefit assumptions, absence of public participation procedure etc. Furthermore, due to the lack of a harmonised approach in assessing the (dis-)proportionality of the costs versus the benefits, each EU member state implements their own approach, leading to an unlevel playing field for industry and differentiated protection levels for EU citizens.

The Commission realizes that uneven application and seeks to establish a standardized methodology (through an implementing act) for assessing the disproportionality between the costs of implementation of the BAT conclusions and the potential environmental benefits, to ensure a more harmonised implementation of such derogations throughout the Union. As a first step, the principles to be complied with, when applications for derogations are assessed, are introduced in the new Annex II to the Directive. The authority should re-assess the decisions for derogations every 4 years or as part of each reconsideration of the permit conditions. Moreover, derogations from emissions limit values are not to be granted where they may put at risk compliance with EQS (Art. 15(4)).

The proposal of the Commission represents a significant step forward in addressing the major shortcomings of the current derogation procedure. Nevertheless, there are important elements that are left to be decided later via a Commission implementing decision, meaning insufficient democratic scrutiny by the European Parliament. We therefore call for providing clarity as much as possible during this co-decision phase, further criteria of non-political nature may then be sorted out through a delegated (instead of an implementing) act¹⁸.

Furthermore, based on the issues in practice we observed, the following is needed:

- Mandatory public participation when all options for decisions are still open, and full transparency on the justifications provided. All details relating to the cost-benefit analysis and related decision-making steps concerning any Art. 15(4) derogation procedure, should be made publicly available on a timely manner e.g., at least 2 months prior to the decision date;
- Derogations concerning emissions substances that are subject to a phase out obligation e.g., Priority Hazardous Substances under the EU Water Framework Directive, should be rejected by default;
- There should be a maximum validity period for any derogation e.g., 4 years, not merely a requirement for a review as currently suggested in the revised text;
- It should be clear that environmental benefits also related to health and climate protection aspects¹⁹;
- The use of the European Environment Agency's Value of Statistical Life (VSL) method, adapted to the US Environmental Protection Agency price levels (7.15 Million €) method, should be required when quantifying the costs of air pollution²⁰;

A specific ratio should be set for the assessment of the 'disproportionality' of
costs compared to the environmental benefits, instead of having each EU
member state deciding on case-by-case basis. A proposal to be considered is that
the costs may be 'disproportionate' where they e.g., outweigh [5] times the benefits
estimated over a minimal [+10] year operation.

c) Linking the IED's permit with other environmental quality standards effectively

While today's IED already asks for stricter measures to comply with environmental quality standards (EQS) affected by the installation (Art. 18), this link has been poorly used in practice – although we still experience heavy pollution of air and water bodies and infringements of corresponding air and water quality standards. Either the use of Art. 18 is an under-reported issue, or competent authorities hardly ever apply this provision to set stricter permit requirements: The IED registry only contains 76 records out of 154,362 (0,05% of the entries) that indicate that 'stricter permit conditions' have been set.²¹

To improve the situation, the Commission asks EU member states to ensure that permits are granted further to consultation of all relevant authorities who ensure compliance with Union environmental legislation, including with EQS; and derogations from emissions limit values are not to be granted where they may put at risk compliance with EQS. Furthermore, the operator shall regularly monitor the pollutants concentration in the receiving environment and inform the competent authority; permit conditions should be regularly reviewed and, where necessary, updated where the status of the receiving environment fails to achieve compliance with plans and programmes set under Union legislation, such as the river basin management plans under the EU Water Framework Directive.

We welcome the proposal to prohibit any derogation where it 'may put at risk' the compliance with EQS. It is no longer acceptable that EQS breaches may happen because of laxist permitting, and remediation actions may only be planned and executed afterwards. This provision translates the precautionary principle of EU law into clear legal wording, and it is coherent with a permitting culture that aims for pollution prevention first. This approach should be further promoted and broadened, in the meaning of additional measures that may be adopted when the compliance with EQS may be put at risk. The legal text would benefit from mentioning examples of measures, e.g., reduced operating hours, absolute pollution load caps per industrial output, fuel switch obligations, minimum efficiency rates of employed pollution abatement techniques etc. Such measures would be targeted to the specific EQS objectives and would be proportionate to the impact of the industrial activity.

V. Ensuring systematic regulation of indirect releases of polluting substances into water

Currently, neither the IED nor the BREFs systematically address the indirect releases of polluting substances into water (i.e., when wastewater is not discharged directly to a water body, but after treatment at a wastewater treatment plant (WWTP)). The problem here is that the average WWTP is not adequately designed to abate heavy metals and other persistent pollutants. What happens is that, while the IED installation appears to

comply with the entry requirements of the WWTP or related (less strict) BAT-AELs for indirect pollutant releases, and the WWTP appears to comply with their own permit conditions, such recalcitrant pollutants remain unabated yet measured in lower concentrations due to dilution of the different waste water streams received by the WWTP.

To address this issue, the Commission asks that the relevant conditions are specified (proposed Art. 15(1)): the wastewater treatment plant in question needs to be properly designed and equipped to abate the released polluting substances, and that such releases are not leading to an increased load of pollutants in receiving waters (when compared to a situation where the installation applies BAT and meets stricter ELVs for direct discharges to a water body).

When Indirect releases of pollutants that cannot be abated in a downstream WWTP should be prohibited as far as possible. When this is not feasible, the operator should either ensure compliance with the strictest ELVs (i.e., as if they would directly discharge in a water body) for such substances, or discharge to a WWTP that is specifically equipped and permitted to treat such heavily polluted waste waters. Special consideration should also be given to the overall pollution mass loads, which may also be transferred to the sewage sludge; a combined approach of absolute load limits with concentration levels should be considered. Furthermore, permits should include whole effluent assessment to account for cocktail effects²².





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