

Best available techniques reference documents: their contribution to the use/emissions of less hazardous substances, PFAS as a case example

PFAS: Global Regulations, Restrictions and Alternatives

5 December 2023. Chemical Watch

[REDACTED]
European Commission

Joint Research Centre

Directorate B – Fair and Sustainable Economy

Content



General procedure to derive best available techniques for associated emission levels

Work programme

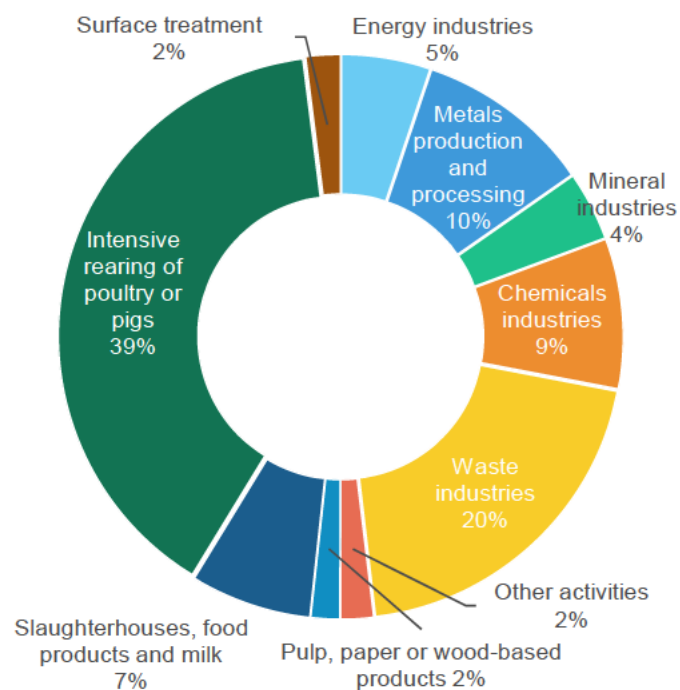
Case example of PFAS in different industrial sectors

General procedure to derive Best Available Techniques for Associated Emission Levels (BAT-AELs)

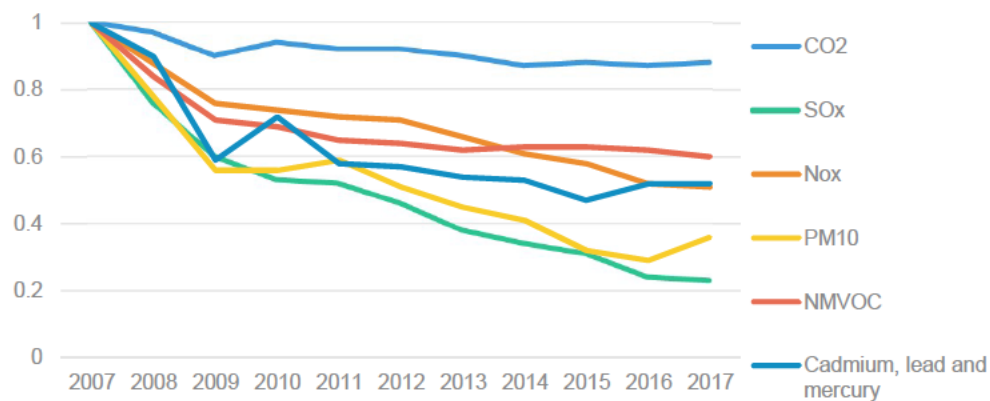
Industrial Emissions Directive (IED)

IED regulates over **30 000+ large industrial installations** and **20 000+ farms**

% of installations per industry sector



Supports a **high level of protection** of human health and the environment as a whole



Emissions of air pollutants by industry

Good news: reduction by 40-75% of key pollutants over a decade
However: IED plants still c. **50% of emissions of SO₂ & heavy metals, 40% of GHG emissions and 30% of NOx & PM₁₀**

What is a BREF? (1/2)

Preface

Scope

General information about the sector concerned

Applied processes and techniques

Current emission and consumption levels

Techniques to consider in the determination of BAT

Best available techniques (BAT) conclusions

Emerging techniques

Concluding remarks and recommendations for future work

References

Glossary of terms and abbreviations

Annexes



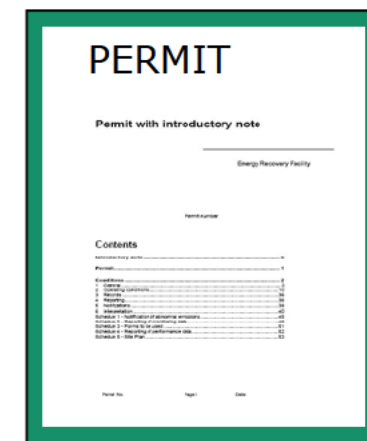
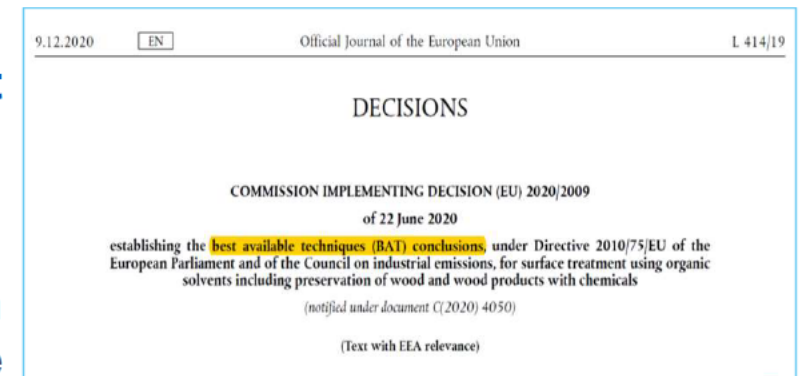
What is a BREF? (2/2)

BAT conclusions = parts of a BAT reference document laying down:

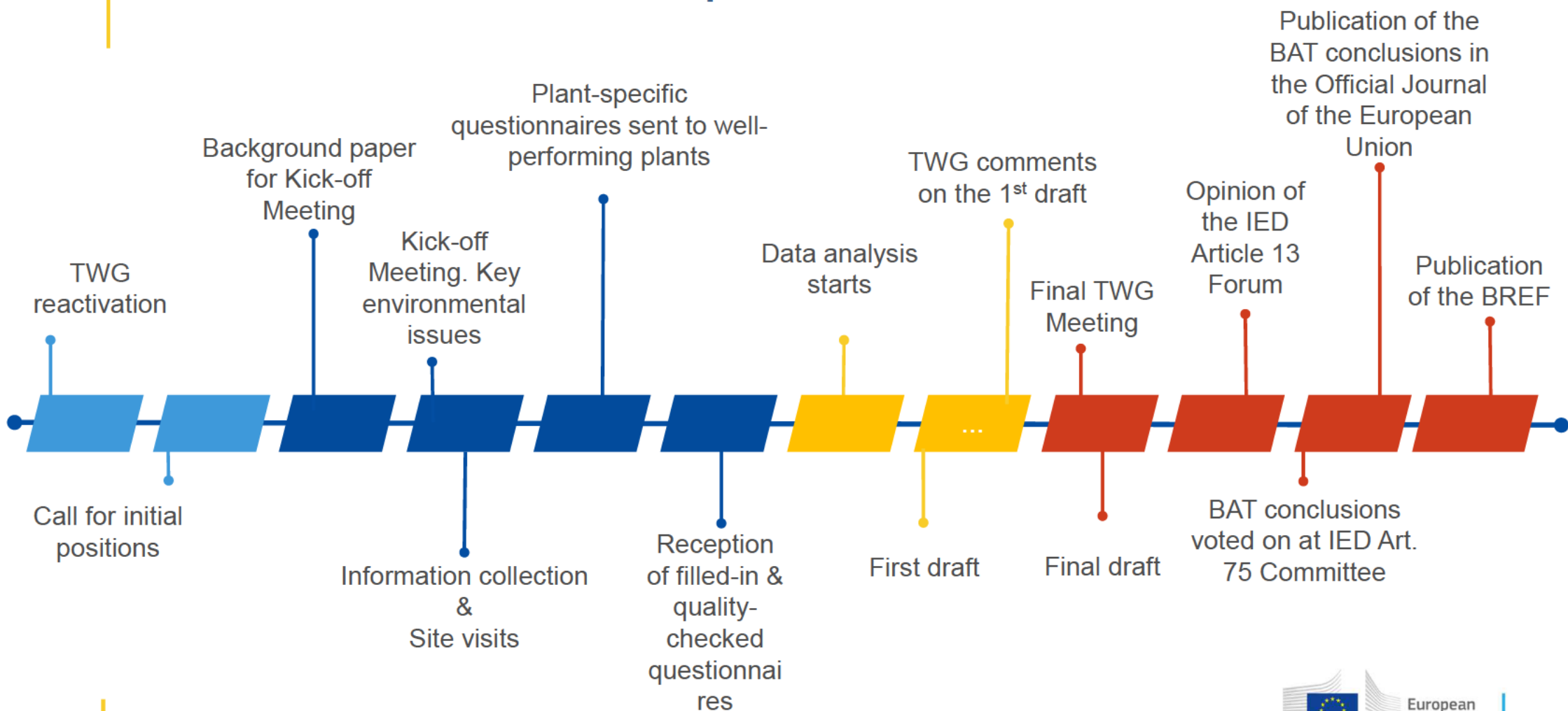
- the conclusions on BAT
- technical description of BAT
- information on the applicability of BAT
- the emission levels associated with BAT (BAT-AELs)
- other associated environmental performance levels (BAT-AEPLs)
- associated monitoring
- site remediation measures (where appropriate)

Role of BAT conclusions in permitting

- BAT conclusions are the **reference for setting permit conditions** (IED Article 14(3))
 - New installations: **immediately**
 - Existing installations: **within 4 years** of publication (in OJEU) of decision of BAT conclusions relating to the main activity of an installation (IED Article 21(3))
- Permits shall contain **emission limit values (ELVs)**
 - ensuring that, under normal operating conditions, emissions do not exceed BAT-associated emission levels (BAT-AELs) (IED Article 15(3))
- **Monitoring conditions**: based on BAT conclusions (Art. 16)



BREF review main steps

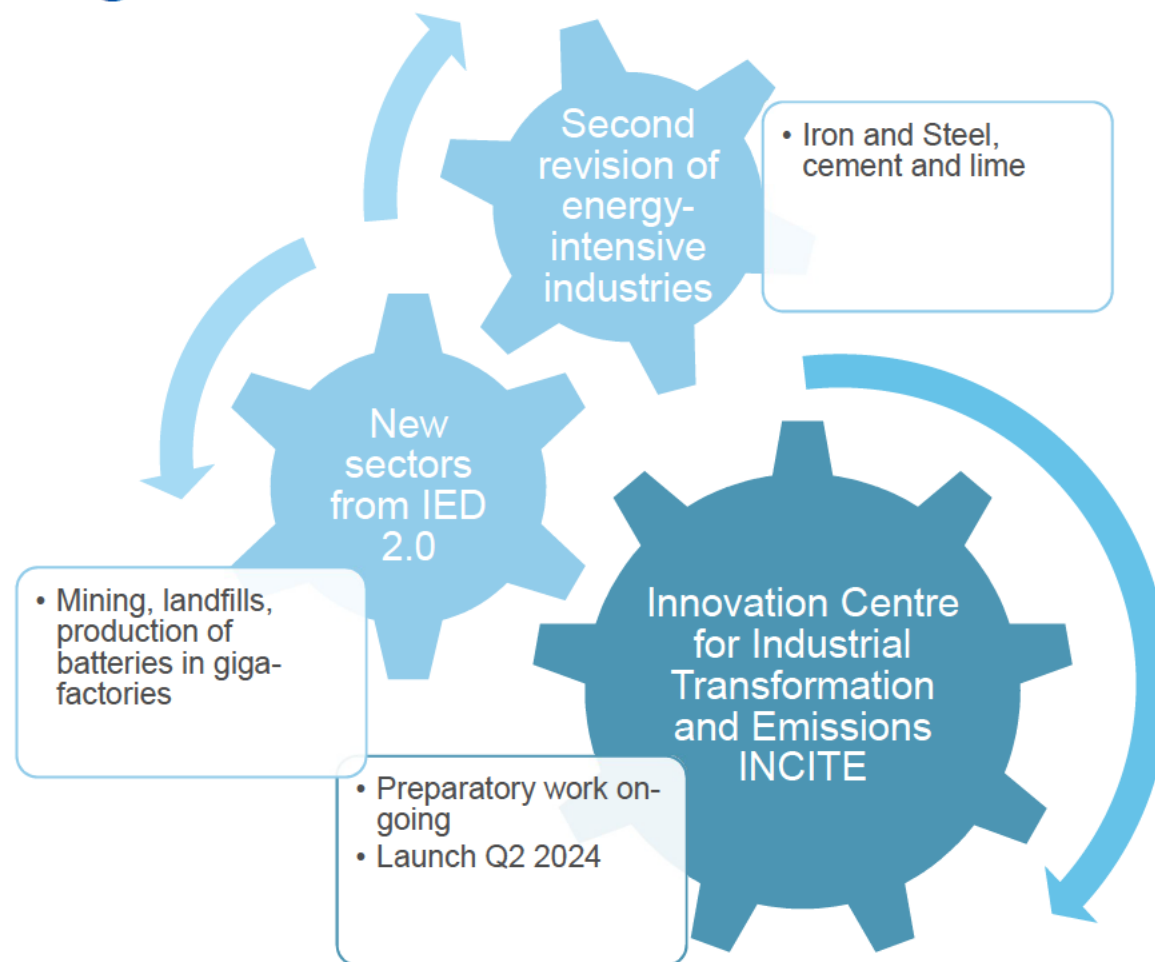


Work programme of the EIPPCB

BREFs under review (from 32 BREFs)

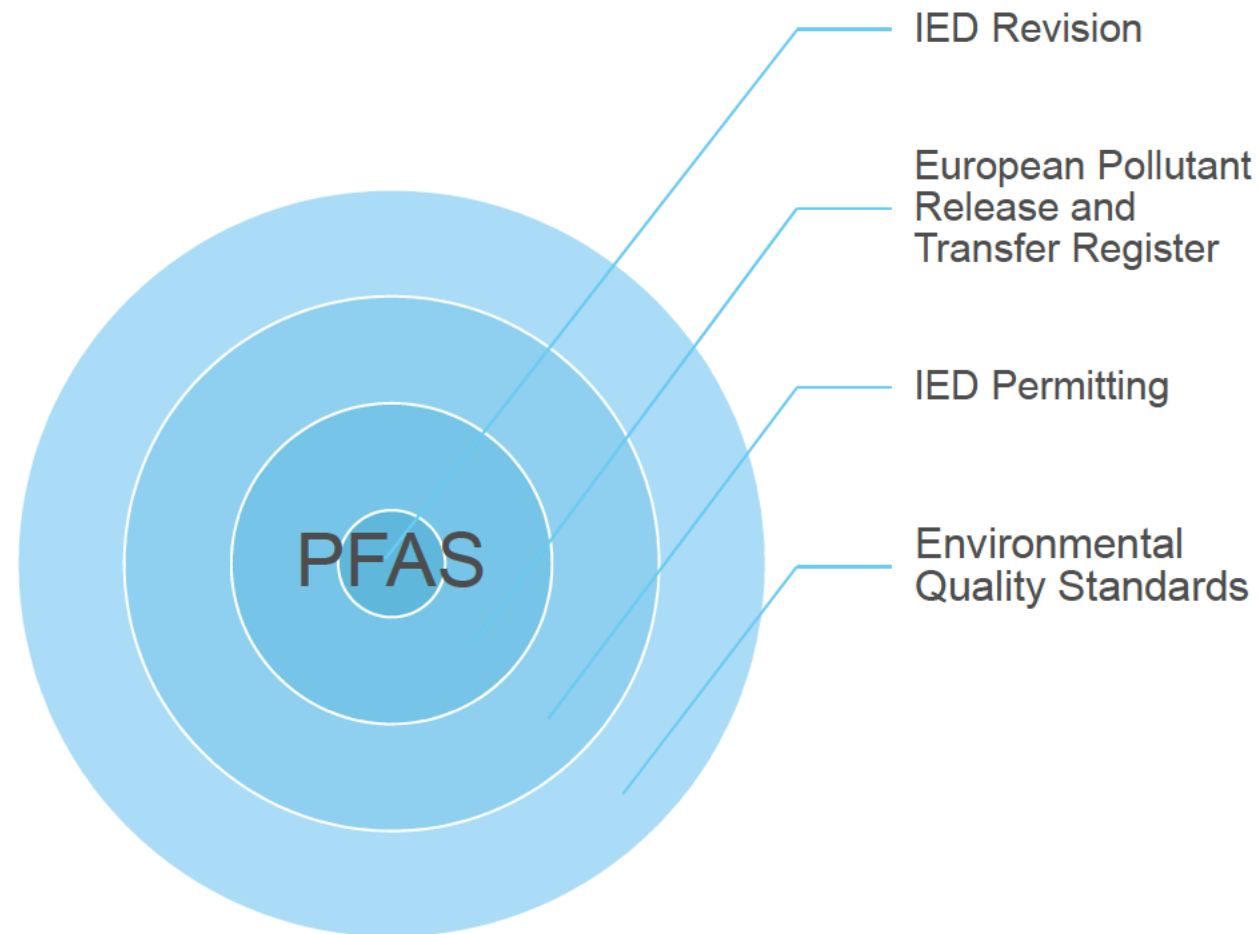
BREF	Status	
Common Waste Gas Management and Treatment Systems in the Chemical Sector WGC	Published (January 2023)	
Textiles Industry TXT	Published (January 2023)	
Slaughterhouses and Animal By-Products Industries SA	Final draft (in progress)	
Smitheries and Foundries Industry SF	Final meeting (June 2023)	
Ceramic Manufacturing Industry CER	Draft 1 (August 2023)	
Surface Treatment of Metals and Plastics STM	Data analysis (in progress)	
Large Volume Inorganic Chemicals LVIC	Data collection (in progress)	

Other on-going activities



Case example of PFAS in different industrial sectors

Current measures of the IED on PFAS?



PFAS in the BAT conclusions



Waste Treatment (2018)

- The BAT conclusions for waste treatment address PFOA and PFOS, but not other PFAS.
- Authorities can consider emission limits for all other PFAS as well as for PFOS and PFOA.
- BAT 7. **BAT** is to monitor emissions to water with at least the frequency given below*, and in accordance with EN standards (if available).

* *Minimum monitoring frequency once every 6 months.*

PFAS in the BAT conclusions



Textiles Industry (2022)

- The BAT conclusions for waste treatment address PFAS in a general way.
- They provide for the periodic monitoring of PFAS emissions to water, the regular analysis of the potential for substitution of PFAS, the pre-treatment of waste water streams containing PFAS, for waste the separation and storage when contaminated with PFAS, and the selection of repellent with improved environmental performance, in particular regarding toxicity.
- BAT 8. BAT is to monitor emissions to water with at least the frequency given below* and in accordance with EN standards (if available).

** Minimum monitoring frequency once every 3 months.*

PFAS in the BAT conclusions

Kick-off meeting

Surface Treatment of Metals and Plastics (under review) **Large Volume Inorganic Chemicals (under review)**

- To include PFAS as a KEI and to collect data on PFAS emissions to water through the plant-specific questionnaires.
- To collect information on the exact PFAS types used (e.g. 6:2 FTS), their quantities, their potential substitution with less harmful (e.g. fluorine-free) alternatives and the applied waste water treatment techniques (e.g. for short- or long-chain PFAS).
- The TWG to decide at a later stage, based on the data collected through the questionnaires, whether BAT-AELs for PFAS emissions to water should be derived.
- Not to include PFAS as a KEI for emissions to air and not to collect data on PFAS emissions to air.

Thank you!



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