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REVIEW OF THE BEST AVAILABLE TECHNIQUES (BAT) REFERENCE DOCUMENT FOR WASTE TREATMENT (WT BREF)

Assessment of split view rationales

1	INT	RODUCTION	.3
	1.1	GENERAL ASPECTS	3
	1.2	OVERVIEW OF SPLIT VIEWS EXPRESSED AT THE FINAL TWG MEETING FOR THE REVIEW OF THE WT BREF	5
	1.3	SPLIT VIEWS EXPRESSED AFTER THE FINAL TWG MEETING FOR THE REVIEW OF THE WT BREF	7
	1.4	Split views expressed during the final TWG meeting for the review of the WT BREF but not confirmed after the meeting	8
2	SCC	OPE	.9
	2.1	CONSIDERATION OF THE IED 6.11 ACTIVITY "INDEPENDENTLY OPERATED TREATMENT OF WASTE WATER" (EURITS, HWE)	9
	2.2	USE OF "; THIS MAY BE" (SE)	11
3	GEN	NERAL CONSIDERATIONS	13
	3.1	AVERAGING PERIODS FOR EMISSIONS TO WATER (FI, SE)	13
4	GEN	NERAL BAT CONCLUSIONS	15
	4.1	ABSENCE OF BAT CONCLUSIONS ON MIXING/BLENDING OF HAZARDOUS WASTE (EURITS, HWE)	15
	4.2	MONITORING OF BROMINATED FLAME RETARDANTS (EFR)	17
	4.3	EMISSIONS TO WATER	18
	4.3.1	Absence of exemption from the BAT-AELs for TOC/COD emissions to water due to low temperature (SE)	18
	4.3.2	Footnote 3bis of Table 6.3 (BE)	20
	4.3.3	BAT-AELs for indirect discharges to a receiving water body (FR, UK)	22
	4.3.4	BAT-AELs for metals and metalloids emissions to water for direct and indirect discharges from treatments other than treatment of WBLW (BE)	25
	4.3.5	BAT-AELs for cadmium emissions to water for direct and indirect discharges from treatments other than treatment of WBLW (EEB)	29

4.3.0 4.3.7	 BAT-AELs for cadmium emissions to water for direct and indirect discharges from treatment of WBLW (BE, EEB) BAT-AELs for mercury emissions to water for direct and indirect discharges 	31
	from the treatment of WBLW (BE)	34
5 BA	T CONCLUSIONS FOR MECHANICAL TREATMENT OF WASTE 3	3 7
5.1	APPLICABILITY OF FABRIC FILTER IN BAT 25B (EFR)	37
5.2	UPPER END OF THE BAT-AEL RANGE FOR DUST EMISSIONS TO AIR FROM MECHANICAL TREATMENT OF WASTE (FR, EFR)	38
5.3	BAT FOR EMISSIONS TO AIR OF ORGANIC COMPOUNDS FROM MECHANICAL TREATMENT OF WASTE WITH CALORIFIC VALUE (RO)4	40
6 BA	T CONCLUSIONS FOR THE BIOLOGICAL TREATMENT OF	
WA	STE	12
6.1	BAT STATEMENT OF BAT 32 (IT, EEB)	42
6.2	UPPER END OF THE BAT-AEL RANGE FOR ODOUR EMISSIONS TO AIR SET IN TABLE 6.8 (ECN, EBA, MWE)	44
6.3	UPPER END OF THE BAT-AEL RANGE FOR ODOUR EMISSIONS TO AIR (ADDITION OF A FOOTNOTE IN TABLE 6.8) (EEB)	45
6.4	UPPER END OF THE BAT-AEL RANGE FOR NH ₃ EMISSIONS TO AIR FROM MECHANICAL-BIOLOGICAL TREATMENT OF WASTE IN TABLE 6.8 (EEB)	46

1 INTRODUCTION

1.1 General aspects

According to Commission Implementing Decision 2012/119/EU (Section 4.6.2.3, page 27), the following provisions apply to dissenting views expressed at final TWG meetings:

4.6.2.3 Final TWG meeting

4.6.2.3.1 General

The final TWG meeting aims at resolving outstanding issues with a view to conclude the technical discussions within the TWG.

In the final TWG meeting, the objective is to reach conclusions by consensus of the TWG members present. When there are well founded dissenting views, these will be recorded as indicated in Section 4.6.2.3.2 below.

4.6.2.3.2 Split views

BAT as well as environmental performance levels (see Section 3.3) associated with BAT will be drafted by the EIPPCB on the basis of information available at the time of distributing the draft to the TWG for its final meeting (see Section 4.6.2.3). Such information may include any specific proposals for BAT or associated environmental performance levels received from the TWG.

TWG members are expected to provide sound technical, cross-media and economic arguments as relevant to their case when they do not agree with the draft BAT conclusions. Such arguments should be submitted initially as comments to the formal draft BREF within the consultation period set (see Section 1.2.4).

If the TWG in the end reaches no consensus on an issue, the dissenting views and their rationale will be reported in the "Concluding remarks and recommendations for future work" section of the BREF only if both the following conditions are fulfilled:

1. the dissenting view is based on information already made available to the EIPPCB at the time of drafting the conclusions on BAT for the BREF or has been provided within the commenting period corresponding to such a draft;

2. a valid rationale supporting the split view is provided by the TWG member(s) concerned. The EIPPCB will consider a rationale to be valid if it is supported by appropriate technical, cross-media or economic data or information relevant to the definition of BAT.

The Member States, environmental NGOs or industry associations that bring or support the split view will be explicitly named in the document (see Section 2.3.10).

This document lists the split views submitted in the context of the final TWG meeting for the review of the WT BREF, and assesses for each split view whether both of the conditions 1 and 2 listed above are met. The chapter on "Concluding remarks and recommendations for future work" of the revised WT BREF shall reflect the dissenting views for which the present assessment shows that such conditions are met.

However, a positive assessment of those conditions and the reporting of a dissenting view in the BREF are not to be interpreted as an agreement of the EIPPCB with the arguments supporting that split view, or as an indication that the related BAT conclusion as agreed at the final TWG meeting may be subject to changes.

Acronym	Definition
BP	Background paper for the final meeting of the Technical Working Group (TWG) for the review of the WT BREF
D1	First draft of the revised WT BREF, released on 18 December 2015
FGT	Flue-gas treatment
LoQ	Limit of quantification
MBT	Mechanical-biological treatment
ROM	JRC Reference document on monitoring of emissions to air and water from IED installations
TWG	Technical Working Group for the review of the WT BREF
WBLW	Water-based liquid waste
WT	Waste treatment
WWTP	Waste water treatment plant

For the purposes of this document, the following acronyms are used.

1.2 Overview of split views expressed at the final TWG meeting for the review of the WT BREF

During the final TWG meeting for the review of the WT BREF held from 19 to 23 March 2017 in Seville, a high degree of consensus was achieved within the TWG. Nevertheless, 19 dissenting views were recorded, which are listed in the following table.

Split view number	Consolidated WT final meeting conclusions' slide number(s)	Торіс	BAT conclusion / Section / Table number	TWG member(s) raising the split view(s) and those supporting it	Section number in this document
1	6	Consideration of the IED 6.11 activity "independently operated treatment of waste water"	Scope	EURITS, HWE	2.1
2	8 - 10	Use of "; this may be"		SE	2.2
3	17 – 19	Averaging periods for emissions to water	General considerations	FI, SE	3.1
4	41	Absence of a BAT on mixing/blending hazardous waste; related to dilution	No BAT	EURITS, HWE, (supported by EEB)	4.1
5	191	Monitoring of brominated flame retardants	BAT 4	EFR	4.2
6	104, 105, 107	Absence of exemption from BAT-AELs for TOC/COD emissions due to cold climate	Table 6.3	SE	4.3.1
7	104, 105, 107	Footnote 3bis in Table 6.3	Table 6.3	BE	4.3.2
8	163 – 183	BAT-AELs for indirect discharges to water	Table 6.4	FR, UK	4.3 <u>.</u> 3
9	120, 121, 126 – 139, 166 – 183	BAT-AELs for metals and metalloids emissions to water – all treatments except treatment of WBLW	Tables 6.3 and 6.4	BE (supported by EEB)	4.3.4
10(¹)	126, 157, 168, 182	BAT-AELs for cadmium emissions to water – all treatments of waste	Tables 6.3 and 6.4	EEB	4.3.5 and 4.3.6
11	157, 182	BAT-AELs for cadmium emissions to water – treatment of WBLW	Tables 6.3 and 6.4	BE, EEB	4.3.6
12	160, 183	BAT-AELs for mercury emissions to water – treatment of WBLW	Tables 6.3 and 6.4	BE (supported by EEB)	4.3.7
13	187	Applicability of fabric filter	BAT 25b	EFR	5.1

14	189	Upper end of the BAT- AEL range for dust emissions to air from mechanical treatment of waste as set in	Table 6.5	FR, EFR	5.2
15 212 - 213		Footnote 1 of Table 6.5 BAT for emissions to air of organic compounds from mechanical treatment	BAT 29ter and Table 6.6bis	RO	5.3
16 222		BAT statement of BAT	BAT 32	IT, EEB	6.1
17	227	Upper end of the BAT- AEL range for odour emissions to air	Table 6.8	EBA, ECN, MWE	6.2
18	227	Upper end of the BAT- AEL range for odour emissions to air	Table 6.8	EEB	6.3
19	227	Upper end of the BAT- AEL range for NH ₃ emissions to air from MBT	Table 6.8	EEB	6.4 _
⁽¹⁾ For reasons of clarity, this split view is addressed in two different sections: one concerning the treatment of waste other than WBLW and one concerning the treatment of WBLW.					

For each of the split views, the detailed rationales provided by the TWG member(s) concerned are summarised in the following pages together with the EIPPCB's assessment and an indication of whether/how the split views could be formulated in the BREF. The contents of individual split views on the same topic may differ from one to another. In this document, some split views are grouped together when the proposal and the rationale are similar.

1.3 Split views expressed after the final TWG meeting for the review of the WT BREF

Additional split views (see table below) were submitted by TWG members after the final TWG meeting without having been raised during the meeting. These positions are not presented or assessed in this document given that the last paragraph of Section 4.6.2.3.1 of Commission Implementing Decision 2012/119/EU (under "4.6.2.3 Final TWG meeting") stipulates that:

"In the final TWG meeting, the objective is to reach conclusions by consensus of the TWG members present. When there are well founded dissenting views, these will be recorded as indicated in Section 4.6.2.3.2 below."

Additional split view number	Consolidated WT final meeting conclusions' slide number(s)	Торіс	BAT conclusion / Section / Table number	TWG member(s) raising the split view(s)
1	Not applicable	Definition of re- refining of waste oils	Definitions	GEIR
2	Not applicable	Absence of a BAT on the optimisation of the decomposition level of organic substances	New BAT 36bis	PL
3	Not applicable	Include in BAT 40 the description of the waste treatment process and of the output quality	BAT 40	GEIR
4	Not applicable	Absence of a BAT regarding the prevention and reduction of diffuse emissions from the mechanical treatment in shredders of metal waste.	New BAT 26bis	BE

1.4 Split views expressed during the final TWG meeting for the review of the WT BREF but not confirmed after the meeting

Four dissenting views were expressed during the final TWG meeting that were not confirmed by sending documentation to the EIPPCB after the meeting. These split views are considered as not having been submitted and are not presented or assessed in this document.

Non- confirmed split view number	Consolidated WT final meeting conclusions' slide number(s)	Торіс	BAT conclusion / Table number	TWG member(s) raising the split view(s) and those supporting it
1	7, 10	7, 10 Inclusion in the scope of treatment of fly ashes and FGT residues		CEWEP, ESWET
2 189 BAT-AE emissio mechanical		BAT-AEL range for dust emissions to air from mechanical treatment of waste	Table 6.5	RO
3	227, 230	Upper ends of the BAT-AEL ranges for NH ₃ and TVOC emissions to air from MBT	Table 6.8	CZ
4	260	Upper end of the BAT-AEL range for TVOC emissions to air from the re-refining of waste oil, the physicochemical treatment of liquid waste with calorific value and the regeneration of spent solvents	Table 6.13bis	EUCOPRO

2 SCOPE

2.1 Consideration of the IED 6.11 activity "independently operated treatment of waste water" (EURITS, HWE)

Conclusion of the meeting

Slide 6 on the part of the scope where activities from Annex I to Directive 2010/75/EU that are concerned by the WT BAT conclusions are specified.

Scope

These BAT conclusions concern the following activities specified in Annex I to Directive 2010/75/EU, namely:

(...)

• 6.11. Independently operated treatment of waste water not covered by Directive 91/271/EEC and discharged by an installation undertaking activities covered under points 5.1, 5.3 and 5.5 above.

Referring to independently operated treatment of waste water not covered by Directive 91/271/EEC above, these BAT conclusions also cover the combined treatment of waste water from different origins if the main pollutant load originates from the activities covered under points 5.1, 5.3 and 5.5 of Annex I to Directive 2010/75/EU.

Split view summary

• HWE and EURITS propose to delete the entire aforementioned paragraph "Referring to (...) Annex I to Directive 2010/75/EU".

The split view is accompanied by the following rationale

- The kick-off meeting report was clear that the WT BREF scope should not include: "installations/plants covered in the CWW BREF or in other BREFs covering Activity 6.11 of Annex I to the IED ('Independently operated treatment of waste water not covered by Directive 91/271/EEC and discharged by an installation covered by IED Chapter II')".
- The new wording adopted during the Final Meeting will introduce distortion in terms of the environmental performance to be achieved by an installation as, in the event that the main pollutant load does not originate from activities 5.1, 5.3 or 5.5, other BAT conclusions may apply or even no BAT conclusions at all.

Information on which the split view is based

• The split view is based on D1 of the revised WT BREF, where the wording proposed was acceptable to HWE and EURITS.

EIPPCB assessment

The documents and information referred to in the split view were available in time.

Validity of supporting rationale:

• Which BAT conclusions or which regulations apply to Activity 6.11 when the main pollutant load does not originate from activities 5.1, 5.3 or 5.5 is an implementation issue.

- There is no contradiction with the conclusions of the Kick-off meeting. Those conclusions did indeed specify that the WT BAT conclusions would not include "installations/plants covered in the CWW BREF or in other BREFs covering Activity 6.11 of the Annex I to the IED". This does not mean that the WT BATC should cover all the other 6.11 installations.
- Deleting the paragraph "Referring to (...) Annex I to Directive 2010/75/EU" may on the contrary lead to contradictions with the conclusions of the Kick-off-meeting as in that case the WT BATC could possibly also cover "installations/plants covered in the CWW BREF or in other BREFs covering Activity 6.11 of the Annex I to the IED".

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that the split view representing the opinion of the aforementioned TWG members does not fulfil the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU. This split view will therefore not be reported in the "Concluding remarks and recommendations for future work" chapter of the BREF.

2.2 Use of "; this may be" (SE)

Conclusion of the meeting

Slides 8 - 10 on the part of the scope where activities not addressed by the WT BAT conclusions are specified.

Scope

(...)

These BAT conclusions do not address the following:

(...)

- Direct recovery (i.e. without pretreatment) of waste as a substitute for raw materials in installations carrying out activities covered by other BAT conclusions, e.g.:
 - direct recovery of lead (e.g. from batteries), zinc or aluminium salts or recovery of the metals from catalysts; <u>this may be covered</u> by the BAT conclusions for the non-ferrous metals industries (NFM);
 - processing of paper for recycling; <u>this may be</u> covered by the BAT conclusions for the production of pulp, paper and board (PP);
 - use of waste as fuel/raw material in cement kilns; <u>this may be covered</u> by the BAT conclusions for the production of cement, lime and magnesium oxide (CLM).
- Waste (co-)incineration, pyrolysis and gasification; <u>this may be covered</u> by the BAT conclusions for waste incineration (WI) or the BAT conclusions for large combustion plants (LCP).
- (...)
- Treatment of slags and bottom ashes; <u>this may be covered</u> by the BAT conclusions for waste incineration (WI) and/or the BAT conclusions for large combustion plants (LCP);
- Smelting of scrap metals and metal-bearing materials; <u>this may be covered</u> in the BAT conclusions for non-ferrous metals industries (NFM), the BAT conclusions for iron and steel production (IS), and/or the BAT conclusions for the smitheries and foundries industry (SF).
- (...)
- Combustion of fuels when it does not generate hot gases which come into direct contact with the waste. <u>This may be covered</u> in the BAT conclusions for large combustion plants (LCP) or by Directive 2015/2193/EU.

Split view summary

Sweden proposes to replace semicolons with full stops before "this may be covered...", which would then read "This may be covered (...)".

The split view is accompanied by the following rationale

Semicolons are used in all occurrences before "this may be" except in the last bullet point where a full stop is used instead, which introduces room for interpretation of the meaning of "; it may be covered", which could be understood as "if covered" or "when covered".

Information on which the split view is based

- BAT conclusions updated for the WT final meeting.
- Comment SE 05 on the BAT conclusions updated for the WT final meeting.

EIPPCB assessment

The documents and information referred to in the split view were available in time.

Validity of supporting rationale:

- In the English language, the semicolon has the same function as a full stop but allows the author to underline the connection between what precedes the semicolon and what follows it.
- As such, there is no difference whatsoever between "; this may be" and ". This may be" and no room for interpretation either.
- "; this may be" has already been used in other BAT conclusions (i.e. IRPP and LVOC).

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that the split view representing the opinion of the aforementioned TWG members does not fulfil the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU. This split view will therefore not be reported in the "Concluding remarks and recommendations for future work" chapter of the BREF.

Nevertheless, for consistency, as a full stop is used in the last bullet point in the aforementioned section of the scope, all occurrences of "; this may be" could be replaced by ". This may be" for the pre-final draft of the revised WT BREF.

3 GENERAL CONSIDERATIONS

3.1 Averaging periods for emissions to water (FI, SE)

Conclusion of the meeting

Slides 17 – 19 on averaging periods associated with the BAT-AELs for emissions to water.

General considerations

(...)

Emission levels associated with the best available techniques (BAT-AELs) for emissions to water

Unless stated otherwise, emission levels associated with the best available techniques (BAT-AELs) for emissions to water given in these BAT conclusions refer to concentrations (mass of emitted substances per volume of water), expressed in mg/l.

Unless stated otherwise, averaging periods associated with the BAT-AELs refer to either of the two following cases:

- in the case of continuous discharge, daily average values, i.e. 24-hour-flow-proportional composite sample;
- in the case of batch discharge, average values over the release duration taken as flow-proportional composite samples, or, provided that the effluent is appropriately mixed and homogeneous, a grab sample taken before discharge.

Time-proportional composite sampling can be used provided that sufficient flow stability is demonstrated.

All BAT-AELs for emissions to water apply at the point where the emission leaves the installation.

Split view summary

Finland and Sweden propose to revert to the text proposed in D1, i.e. "Unless stated otherwise, the BAT-AELs refer to the flow-weighted monthly average values of all of the following samples taken during that period under normal operating conditions."

The split view is accompanied by the following rationale

- The averaging period for the BAT-AELs has been changed in the revised proposal for BAT conclusions without justification.
- In Finland and Sweden, the averaging periods for emission limit values are monthly or yearly.
- A daily average is not applicable for total nitrogen in the case of low temperatures.
- It is more representative and stricter to have a longer-term averaging period (via a longer-term sampling).
- Article 15(3) of the IED does not allow the use of longer averaging periods for emission limit values than those used for setting BAT-AELs.

Information on which the split view is based

Draft 1 of the revised WT BREF.

EIPPCB assessment

There is no reference to any "information already made available to the EIPPCB at the time of drafting the conclusions on BAT for the BREF or provided within the commenting period corresponding to such a draft".

Validity of supporting rationale:

- The EIPPCB proposal to change the averaging period for the BAT-AELs is explained in the Background Paper for the final TWG meeting (pages 18, 19 and 40): The large majority of reported emission levels in the data collection referred to grab samples or 24-hour composite samples (i.e. representing daily average values).
- Eight Finnish plants participated in the data collection, of which four reported emissions to water. Of these four plants, only one reported monthly average values for pH and daily average values for the other parameters (i.e. plant 111).
- Eight Swedish plants participated in the data collection, of which four plants reported emissions to water. Of these four plants, only one (i.e. Plant 486) reported continuous flow-proportional sampling and monthly average values.
- It is not clear why a BAT-AEL for total nitrogen expressed as a daily average would not be applicable in the case of low temperatures: the treatment itself (nitrification/denitrification) may be less efficient when it is cold but the monitoring of emissions and the subsequent averaging of the monitoring results over one day is still possible.
- The use of longer-term sampling (for instance over one month) is indeed in essence more representative than short-term sampling (for instance over one day). While this sampling regime might work for stable pollutants/parameters such as metals, it is however not suitable for pollutants/parameters whose concentrations are likely to change while being kept in the automated sampling device (e.g. COD, TSS; see ROM Section 5.3.5.4.1). Moreover, a BAT-AEL with a longer-term averaging period is not always "stricter" than a BAT-AEL with a short-term averaging period: it depends on the actual levels (i.e. numbers).
- Article 15(3)(b) of the IED allows the setting of different emission limit values to those referred to under Article 15(3)(a) in terms of values, **periods of time** and reference conditions; nevertheless this is an implementation issue and therefore not in the remit of the BREF work.

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that the split view representing the opinion of the aforementioned TWG members does not fulfil the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU. This split view will therefore not be reported in the "Concluding remarks and recommendations for future work" chapter of the BREF.

4 GENERAL BAT CONCLUSIONS

4.1 Absence of BAT conclusions on mixing/blending of hazardous waste (EURITS, HWE)

Conclusion of the meeting

Slide 41 of the consolidated conclusions of the Final Meeting.

Split view summary

• EURITS and HWE propose to introduce an additional BAT conclusion on the prevention of dilution when mixing and blending waste with hazardous properties.

The split view is supported by EEB.

The split view is accompanied by the following rationale

- BAT conclusions about mixing/blending rules are present in the 2006 WT BREF (BAT 13, 72f, 78c, 79a, 80a) and the removal of these BAT conclusions is not justified.
- The 2006 WT BREF (in the "Concluding remarks" chapter) identified the mixing and blending treatments as being a very important issue for the sector and for which information was lacking.
- According to Article 18(2) of the Waste Framework Directive, hazardous waste shall not be mixed either with other categories of hazardous waste or with other waste, substances or materials, unless a number of conditions are met. One of these conditions is that the mixing operations conform to best available techniques.
- Mixing and blending of hazardous waste with other hazardous waste or with other waste or materials could lead to improper downstream treatment of the mixed waste by waste treatment processes unsuitable for the original wastes, causing impacts on the environment and human health by generating more emission of pollutants to air, to water, to soil or by contaminating substances, mixtures or objects reintroduced in industrial processes during recovery or recycling.

Information on which the split view is based

- Comments on the revised BAT conclusions posted on BATIS in January 2017.
- Comments provided within the commenting period for Draft 1.
- Initial positions of HWE and EURITS.
- WT BREF 2006.

EIPPCB assessment

The documents and information referred to in the split view were available in time.

Validity of supporting rationale:

- According to BAT 13 of the 2006 WT BREF, BAT is to set up and implement blending and mixing rules to avoid increasing pollutant emissions of downstream waste treatments. BAT 72f, 78c, 79a, 80a include specific BAT that concretise BAT 13.
- BAT 13 however does not explicitly mention that dilution is to be avoided.
- BAT 2e of the revised BAT conclusions addresses the waste compatibility before mixing or blending of waste but this does not cover the considerations of BAT 13 in the 2006 WT BREF.

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that part of the split view representing the opinion of the aforementioned TWG member fulfils the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU. This split view will therefore be reported in part in the "Concluding remarks and recommendations for future work" chapter of the BREF.

A possible formulation of this split view could be:

BAT conclusion	Dissenting view	Expressed by	Alternative proposed level (if any)
N/A	Add a BAT conclusion that stipulates under which conditions it is BAT to mix or blend waste with hazardous properties, either with other categories of hazardous waste or with other waste, substances or materials (e.g. to avoid increasing pollutant emissions of downstream waste treatments)	EURITS, HWE (supported by EEB)	N/A

It is also proposed to add a recommendation for future work to collect information during the next review of the WT BREF on provisions taken when mixing or blending waste to avoid increasing pollutant emissions of downstream waste treatments.

4.2 Monitoring of brominated flame retardants (EFR)

Conclusion of the meeting

Slide 191 on monitoring of channelled emissions to air (BAT 4).

Substance/ Parameter	Standard(s)	Waste treatment process	Minimum monitoring frequency (¹)	Monitoring associated with	
Brominated flame retardants (⁴)	No EN standard available	Mechanical treatment in shredders of metal waste	Once every year	BAT 25	
 (¹) Monitoring frequencies may be reduced if the emission levels are proven to be sufficiently stable. (⁴) The monitoring only applies when the substance concerned is identified as relevant in the waste gas, based on the inventory mentioned in BAT 2bis. 					

Split view summary

EFR proposes to delete the conclusion on the monitoring of brominated flame retardants for shredders.

The split view is accompanied by the following rationale

- The monitoring of brominated flame retardants (BFRs) was proposed very late in the process, namely during the final TWG meeting.
- There is no EN standard for monitoring BFRs, which would lead to heterogeneity within the EU in terms of monitoring and data that is unusable to derive BAT-AELs in the future.
- The absence of an EN standard would lead to idle sampling and analytical costs for operators who have no experience in monitoring BFRs.
- If the main purpose of monitoring BFRs is to gather knowledge at EU level, information should instead be gathered via a study that would ensure comparable data.

Information on which the split view is based

The split view explains that there are no previous references available since this new parameter to be monitored was brought up during the final TWG meeting.

EIPPCB assessment

Validity of supporting rationale:

- The argument related to the timing of the proposal to monitor BFRs is not of a technical nature, but rather a procedural one. Nevertheless, the monitoring of two specific types of brominated flame retardants (i.e. brominated diphenyl ethers and hexabromocyclododecane) was already proposed by Finland in their comments on D1 (see Background Paper, page 44).
- There is indeed no EN standard for BFRs, but this is also the case for other parameters listed in BAT 3 on the monitoring of emissions to water (e.g. COD) or in BAT 4 on the monitoring of emissions to air (i.e. H₂S, HF, NH₃ and CFCs). The absence of an EN standard does not mean that there are no standards at all (there may be national or other international standards that ensure the provision of data of an equivalent scientific quality).
- The main purpose of BAT conclusions on monitoring is not the gathering of data.

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that the split view representing the opinion of the aforementioned TWG member does not fulfil the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU. This split view will therefore not be reported in the "Concluding remarks and recommendations for future work" chapter of the BREF.

4.3 Emissions to water

4.3.1 Absence of exemption from the BAT-AELs for TOC/COD emissions to water due to low temperature (SE)

Conclusion of the meeting

Slides 104, 105 and 107 on BAT-AELs for TOC/COD emissions to water.

Table 6.3: BAT-associated emission levels (BAT-AELs) for direct discharges to a receiving water body

Substance/Parameter	BAT-AEL (¹)	Waste treatment process to which the BAT-AEL applies
Total organic carbon (TOC) (²)	10–60 mg/l	• All waste treatments except treatment of water-based liquid waste
	$10-100 \text{ mg/l} (^{3\text{bis}}) (^{3\text{quater}})$	• Treatment of water-based liquid waste
Chemical oxygen demand (COD) (²)	30–180 mg/l	• All waste treatments except treatment of water-based liquid waste
	$30-300 \text{ mg/l} (^{3\text{bis}}) (^{3\text{quater}})$	• Treatment of water-based liquid waste
(¹) The averaging periods are defined in the (²) Either the BAT-AEL for COD or the BAT	General considerations Γ-AEL for TOC applies. TOC m	conitoring is the preferred option because it does not

rely on the use of very toxic compounds. (^{3bis}) The upper end of the range may not apply when:

- the abatement efficiency is ≥ 95 % as a rolling yearly average; and
- the waste input shows the following characteristics: TOC > 2 g/l (or COD > 6 g/l) as a daily average and a high proportion of refractory organic compounds (i.e. which are difficult to biodegrade).
- the chloride concentration in the waste input exceeds e.g. 5 g/l.
- ^{3quater}) This BAT-AEL may not apply to plants treating drilling muds/cuttings.

Split view summary

SE proposes to include a similar exemption for TOC and COD when the temperature of the waste water is low, as was concluded by the TWG for total nitrogen.

The split view is accompanied by the following rationale

• The BAT-AELs for total nitrogen, COD and TOC will be difficult to achieve in Sweden due to the cold climate when using the activated sludge process, a membrane bioreactor (MBR) and nitrification/denitrification. The level of 60 mg/l for TOC is not possible to meet at a number of Swedish plants where modern waste water treatment is used. At these plants, the monitored values have seasonal variations up to 300 mg/l with an annual average of about 90 mg/l. To reach the suggested BAT-AELs, the most expensive treatment methods must be used, for example Sequencing Batch Reactors or Moving Bed Biofilm Reactors which cannot be considered BAT in general.

Information on which the split view is based

• Comments provided within the commenting period for Draft 1.

EIPPCB assessment

The comments referred to in the split view were available in time. There is however no information available about the plants mentioned in the rationale.

Validity of supporting rationale:

- As mentioned in the Background Paper (BP), all plants from the data collection were considered in the data assessment including plants located in areas with a colder climate (i.e. plants from Sweden and from other Scandinavian countries). This means that these specific conditions have already been accounted for in the derivation of the BAT-AELs.
- During the exchange of information, no evidence of the influence of the low temperature on the COD/TOC abatement was provided.

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that the split view representing the opinion of the aforementioned TWG member does not fulfil the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU. This split view will therefore not be reported in the "Concluding remarks and recommendations for future work" chapter of the BREF.

4.3.2 Footnote 3bis of Table 6.3 (BE)

Conclusion of the meeting

Same as in the previous section.

Split view summary

BE proposes either:

- to delete Footnote 3bis; or
- to modify Footnote 3bis by adding a condition under which the upper end of the BAT-AEL range may not apply, namely "the residual toxicity of the effluent is not a concern for the receiving water body".

The split view is accompanied by the following rationale

Rationale for deleting Footnote 3bis:

- Waste waters with low bioeliminability should undergo physico-chemical treatments rather than biological treatments.
- Footnote 3bis seems to contradict this principle as the more refractory organic material in the input in the biological treatment, the higher the BAT-AEL for COD/TOC.
- This footnote undermines the level playing field.

Rationale for adjusting Footnote 3bis:

- Even with an abatement efficiency of 95 %, residual emissions of toxic and refractory organic compounds are possible, which poses an unacceptable risk to the environment. For instance, with an incoming waste water stream of 6 g/l of toxic and refractory COD, 300 mg/l may be discharged.
- The risk is particularly relevant in this sector since the origin and hazardous properties of the refractory organic COD are often not known.
- Higher BAT-AELs should only be possible if toxicity is not a concern for the receiving water body.
- Toxicity can be monitored in the effluents.

Information on which the split view is based

- Revised BAT conclusions released on 19.01.2017 and comment BE 35 on these revised BAT conclusions.
- Comments provided within the commenting period for Draft 1 as far as toxicity is concerned.

EIPPCB assessment

The documents and information referred to in the split view were available in time.

Validity of supporting rationale:

Rationale for deleting Footnote 3bis:

- Footnote 3bis stipulates that the upper end of the BAT-AEL range may not apply when all conditions of the first two bullet points are met at the same time, i.e.:
 - the abatement efficiency is \geq 95 % as a rolling yearly average;

- the waste input shows the following characteristics: TOC > 2 g/l (or COD > 6 g/l) as a daily average and a high proportion of refractory organic compounds (i.e. which are difficult to biodegrade).

• When a WBLW contains a high proportion of refractory organic compounds, it seems unlikely that the WT plant can achieve an abatement efficiency of ≥ 95 % by exclusively using biological

treatment. Therefore, Footnote 3bis should not rule out the use of physico-chemical treatment techniques.

Rationale for adjusting Footnote 3bis:

- The split view argues that, in addition to the three aforementioned conditions a fourth one on residual toxicity should be fulfilled in the event that the upper end of the BAT-AEL does not apply. The argument could be valid in the sense that such a plant would need to show a good or even a better performance in terms of abatement compared to other plants where emission levels are within the BAT-AEL range.
- However, with a view to ensuring a high level of protection of the environment as a whole, effluents from plants with COD/TOC levels also within the BAT-AEL range should not show residual toxicities that are of concern for the receiving water body.
- In addition, toxicity may be an issue not only for direct but also for indirect discharges as it may harm the downstream WWTP.
- Therefore, the proposed amendment to Footnote 3bis (i.e. "the residual toxicity of the effluent is not a concern for the receiving water body") would make more sense as a general BAT.
- Regarding the wording however, BAT conclusions generally do not refer to the impact on the receiving environment (e.g. the water body).
- An alternative solution would be to introduce a BAT to reduce residual toxicity, using a combination of the techniques listed in BAT 15, possibly with BAT-AELs on toxicity.
- Unfortunately, the data collection provided little information about toxicity measurements: only seven plants (of which, four treat WBLW) reported toxicity monitoring, using various EN standards.

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that part of the split view representing the opinion of the aforementioned TWG member fulfils the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU. This split view will therefore be reported in part in the "Concluding remarks and recommendations for future work" chapter of the BREF.

A possible formulation of this split view could be:

BAT conclusion	Dissenting view	Expressed by	Alternative proposed level (if any)
N/A	Add a BAT conclusion to reduce the residual toxicity of the effluent	BE	N/A

It is also proposed to add a recommendation for future work to collect information on effluent toxicity during the next review of the WT BREF.

4.3.3 BAT-AELs for indirect discharges to a receiving water body (FR, UK)

Conclusion of the meeting

The split view concerns the entire Table 6.4 (slides 163 - 183) which presents the BAT-AELs for indirect discharges to a receiving water body.

S	Substance/Parameter	BAT-AEL (¹) (²)	Waste treatment process to which the BAT-AEL applies
Hydrocarbon oil index (HOI)		0.5–10 mg/l	 Mechanical treatment in shredders of metal waste Treatment of WEEE containing VFCs and/or VHCs Re-refining of waste oil Physico-chemical treatment of waste with calorific value Water washing of excavated contaminated soil Treatment of water-based liquid waste
Cyanide (CN-)) (³)	0.02-0.1 mg/l	• Treatment of water-based liquid waste
Adsorbable organically bound halogens (AOX) (³)		0.2-1 mg/l	• Treatment of water-based liquid waste
	Arsenic (expressed as As)	0.01–0.05 mg/l	• Mechanical treatment in shredders of
	Cadmium (expressed as Cd)	0.01–0.05 mg/l	 Treatment of WEEE containing VFCs
	Chromium (expressed as Cr)	0.01–0.15 mg/l	and/or VHCsMechanical biological treatment of
	Copper (expressed as Cu)	0.05–0.5 mg/l	• Re-refining of waste oil
	Lead (expressed as Pb)	0.05–0.1 mg/l (⁴)	• Physico-chemical treatment of waste with calorific value
	Nickel (expressed as Ni)	0.05–0.5 mg/l	• Physico-chemical treatment of solid and/or pasty waste
Metals and metalloids (³)	Mercury (expressed as Hg)	0.5-5 μg/l	Regeneration of spent solventsWater washing of excavated
	Zinc (expressed as Zn)	$0.1-1 \text{ mg/l} (^5)$	contaminated soil
	Arsenic (expressed as As)	0.01–0.1 mg/l	
	Cadmium (expressed as Cd)	0.01–0.1 mg/l	
	Chromium (expressed as Cr)	0.01–0.3 mg/l	4
	Hexavalent Chromium (expressed	0.01–0.1 mg/l	

Table 6.4: BAT-associated emission levels (BAT-AELs) for indirect discharges to a receiving water body

(¹) The averaging periods are defined in the General considerations

as Cr(VI))

Copper (expressed as Cu)

Lead (expressed as Pb)

Nickel (expressed as Ni)

Zinc (expressed as Zn)

Mercury (expressed as Hg)

(²) The BAT-AELs may not apply if the downstream waste water treatment plant abates the pollutants concerned, provided this does not lead to a higher level of pollution in the environment.

0.05-0.5 mg/l

0.05-0.3 mg/l

0.05-1 mg/l

1-10 µg/l

0.1 - 2 mg/l

(³) The BAT-AELs only apply when the substance concerned is identified as relevant in the waste water inventory mentioned in BAT 2bis.

(⁴) The upper end of the range is 0.3 mg/l for mechanical treatment in shredders of metal waste.

(⁵) The upper end of the range is 2 mg/l for mechanical treatment in shredders of metal waste.

Treatment of water-based liquid waste

The associated monitoring is given in BAT 3.

Split view summary

FR and UK propose to delete Table 6.4.

The split view is accompanied by the following rationale

- As a consequence of the second paragraph of Article 15(1) of the IED, indirect discharges shall be such as BAT-AELs for direct discharges are complied with, taking into account the efficiency of the downstream waste water treatment plant, which excludes the dilution effect. It means for example that if the downstream WWTP is not designed to abate a certain pollutant, the emission limit value that will be applicable to the installation shall be the same as the BAT-AEL for direct release.
- Footnote 2 ("The BAT-AELs may not apply if the downstream waste water treatment abates the pollutants concerned, provided this does not lead to a higher level of pollution in the environment") leaves room for interpretation: it could be understood that no emission limit values should be set for indirect discharge as soon as the waste water is sent to a downstream WWTP.
- Article 15(1) of the IED may be not implemented since the reference will be Table 6.4 of the BAT conclusions.
- Only one set of BAT conclusions so far contains BAT-AELs for indirect discharges to water.
- There is no need for specific BAT-AELs for indirect emissions as the BAT-AELs for direct emissions also apply to indirect emissions unless the competent authority decides otherwise by using the second paragraph of Article 15(1) of the IED.
- If an IED installation includes a WWTP, the emissions will usually be direct and the other way around, if it does not include a WWTP, the emissions will usually be indirect.
- There may be some cases where ELVs for indirect emissions should sensibly be higher than those which would be appropriate for direct emissions.
- The nature, capabilities, demands and duties of downstream waste water treatment plants will vary from plant to plant, as will the relative proportion and composition of the input to such plants that arises from IED installations. For an indirect emission, the pollutants for which ELVs could justifiably exceed BAT-AELs, and the levels at which these should be pitched, cannot therefore be anticipated at all reliably in advance.
- ELVs should be in line with Article 15(1) of IED and this can also be done by other instruments besdies an IED permit.
- ELVs for indirect emissions are therefore set apart from the provisions of Article 15(3). Additionally, the second paragraph of Article 15(1) includes references to environmental outcomes that appear to duplicate those in Article 15(4). Furthermore, the final release to receiving waters could be regulated separately, possibly under a permit under the Water Framework Directive.

Information on which the split view is based

• Comment FR 40 and UK 15 on the revised BAT conclusions (January 2017).

EIPPCB assessment

The comments referred to in the split view were available before the Final TWG meeting. There were however no comments, information or data provided during the commenting period for D1 and supporting this split view.

Validity of supporting rationale:

- The rationale concerns mainly the IED and its implementation, not providing "technical, crossmedia or economic data or information relevant to the definition of BAT".
- The setting of ELVs is an implementation issue outside the remit of the BAT conclusions.

- The BAT conclusions reflect that if the downstream WWTP is not designed to abate a certain pollutant, the BAT-AEL for indirect discharges is the same as for direct discharges. The rationale for deleting Table 6.4 is therefore not very clear.
- It is not clear how Footnote 2 leaves room for interpretation. It is explicitly mentioned that "BAT-AELs may not apply if the downstream waste water treatment abates the pollutants concerned". This does not however mean that no emission limit values should be set. The requirement to set emission limit values is covered by IED Articles 14.1(a) and 15 and is outside the remit of the BAT conclusions.
- It is not clear how IED Article 15(1) may not be implemented because of the information contained in Table 6.4.
- The principle of potentially setting BAT-AELs for indirect discharges was established via the Tanneries (TAN) BREF. Based on the information exchange, the TWG decided on setting such BAT-AELs if deemed relevant and appropriate.
- One BAT-AEL table for all types of discharges could have been drafted, without making a distinction between direct and indirect discharges. Two separate tables were chosen by the TWG for reasons of clarity.
- Many of the plants in the data collection with indirect discharges reported on-site waste water treatment (i.e. 82 out of 128 emission points).

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that the split view representing the opinion of the aforementioned TWG members does not fulfil the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU. This split view will therefore not be reported in the "Concluding remarks and recommendations for future work" chapter of the BREF.

4.3.4 BAT-AELs for metals and metalloids emissions to water for direct and indirect discharges from treatments other than treatment of WBLW (BE)

Conclusion of the meeting

Slides 120, 121, 126 – 139, 166 to 183 present BAT-AELs for metals and metalloids emissions to water for direct and indirect discharges to a receiving water body.

Table 6.3: BAT-associated emission levels (BAT-AELs) for direct discharges to a receiving water body

Substance/Parameter		BAT-AEL (¹)	Waste treatment process to which the BAT-AEL applies
	Arsenic (expressed as As)	0.01–0.05 mg/l	• Mechanical treatment in shredders of metal waste
	Cadmium (expressed as Cd)	0.01–0.05 mg/l	• Treatment of WEEE containing VFCs
Metals and metalloids (⁴)	Chromium (expressed as Cr)	0.01–0.15 mg/l	and/or VHCsMechanical biological treatment of waste
	Copper (expressed as Cu)	0.05–0.5 mg/l	Re-refining of waste oilPhysico-chemical treatment of waste with
	Lead (expressed as Pb)	0.05–0.1 mg/l ⁽⁵⁾	calorific value
	Nickel (expressed as Ni)	0.05–0.5 mg/l	and/or pasty waste
	Mercury (expressed as Hg)	0.5-5 μg/l	• Regeneration of spent solvents
	Zinc (expressed as Zn)	0.1–1 mg/l (⁶)	• water washing of excavated contaminated soil

 $(^{1})$ The averaging periods are defined in the General considerations.

(⁴) The BAT-AELs only apply when the substance concerned is identified as relevant in the waste water inventory mentioned in BAT 2bis.

(⁵) The upper end of the range is 0.3 mg/l for mechanical treatment in shredders of metal waste. (⁶) The upper end of the range is 2 mg/l for mechanical treatment in shredders of metal waste.

and

Table 6.4: BAT-associated emission levels (BAT-AELs) for indirect discharges to a receiving water body

Substance/Parameter		BAT-AEL (¹) (²)	Waste treatment process to which the BAT-AEL applies
	Arsenic (expressed as As)	0.01–0.05 mg/l	• Mechanical treatment in shredders of
	Cadmium (expressed as Cd)	0.01–0.05 mg/l	 Treatment of WEEE containing VFCs
	Chromium (expressed as Cr)	0.01–0.15 mg/l	and/or VHCsMechanical biological treatment of
Metals and	Copper (expressed as Cu)	0.05–0.5 mg/l	• Re-refining of waste oil
metalloids (³)	Lead (expressed as Pb)	0.05–0.1 mg/l (⁴)	• Physico-chemical treatment of waste with calorific value
	Nickel (expressed as Ni)	0.05–0.5 mg/l	• Physico-chemical treatment of solid and/or pasty waste
	Mercury (expressed as Hg)	0.5-5 μg/l	Regeneration of spent solventsWater washing of excavated
	Zinc (expressed as Zn)	$0.1-1 \text{ mg/l} (^5)$	contaminated soil

⁽¹⁾ The averaging periods are defined in the General considerations.

 $\binom{2}{2}$ The BAT-AELs may not apply if the downstream waste water treatment plant abates the pollutants concerned, provided this does not lead to a higher level of pollution in the environment.

 $\binom{3}{1}$ The BAT-AELs only apply when the substance concerned is identified as relevant in the waste water inventory mentioned in BAT 2bis.

(⁴) The upper end of the range is 0.3 mg/l for mechanical treatment in shredders of metal waste.

⁵) The upper end of the range is 2 mg/l for mechanical treatment in shredders of metal waste.

Split view summary

BE proposes to decrease the lower and the upper ends of the BAT-AEL ranges for metals and metalloids.

This split view is supported by EEB.

The split view is accompanied by the following rationale

Concerning the lower ends of the BAT-AEL ranges:

- Some plants report maximum emission levels below the lower end of the BAT-AEL range.
- According to the ROM, the lower end of the BAT-AEL range can be defined as (at least) the typical limit of quantification (LoQ).
- One example is given for mercury:
 - The lowest Hg concentration reported by a plant using an EN standard is 0.04 μ g/l (Plant 427).
 - $\circ~$ The LoQ is lower than 0.5 $\mu g/l$ and the maximum LoQ is 0.15 $\mu g/l.$
 - \circ $\;$ The lower end of the range could be therefore 0.15 $\mu g/l.$

Concerning the upper ends of the BAT-AEL ranges:

- According to reference [1] (see below), a significant fraction of the pollution in polluted run-off water is associated with particles. Therefore, the WWTP should be designed and operated so as to ensure the efficient removal of TSS. This will also lead to reductions in other parameters, such as heavy metals. TSS concentration levels of < 60 mg/l are considered to be achievable using a well-designed and operated WWTP. Other associated emission levels, e.g. those for heavy metals, should be determined by considering only emission data from plants applying WWT and excluding all samples with TSS levels of more than 60 mg/l.
- Plants not reporting emission data on TSS should be excluded from the data set when determining BAT-AELs for metals and metalloids, as it is impossible to judge whether they are well-designed and operated.
- When determining BAT-AELs for metals and metalloids for indirect discharges, one should apply either the same approach as mentioned above for direct discharges, or one should differentiate BAT-AELs for metals and metalloids for direct and indirect discharges.
- One example is given for cadmium:
 - Direct discharges:
 - Plant 221_1 reports no treatment and no data on TSS.
 - Plants 170 and 174C do no report real measurement values.
 - Plant 350_1 reports no treatment and a TSS concentration above 60 mg/l.
 - Plant 427 should be the reference value for setting the upper end of the range.
 - Indirect discharges:
 - $\circ~$ Plants 566 and 605 do not report real measurement values.
 - Plant 14_1 reports no data on TSS, it has a high variability of cadmium releases and there is no data on the monitoring standard used.

- For Plant 571 there is a lack of clarity about the emission data on Cd reported. The emission data on Cd is reported as lower than the LoQ. Furthermore, all other shredder plants report maximal effluent concentrations of Cd lower than 0.01 mg/l.
- Plant 257_1 reports no data on TSS. A maximal effluent concentration of 0.03 mg/l is reported, but a low average concentration of 0.0105 mg/l. The maximal effluent concentration is based on one measurement only.
- Plant 235 reports no data on TSS. Furthermore there is a lack of clarity about the emission data on Cd reported. The emission data on Cd is reported as lower than the ELV.
- Plant 244 reports no data on TSS. A maximal effluent concentration of 0.0164 mg/l is reported, but a very low average concentration of 0.00118 mg/l. The 95th percentile value is approximately 0.001 mg/l.
- Plant 336 reports no information on treatment and the maximal effluent concentration of TSS is above 60 mg/l (i.e. 185 mg/l). A maximal effluent concentration of 0.014 mg/l is reported and a low average concentration of 0.012 mg/l.
- The reference plant for setting the upper end value of the BAT-AEL range for Cd should be Plant 293C.

Information on which the split view is based

- Data set available in BATIS.
- ROM.
- Revised draft BAT conclusions, January 2017.
- Comment BE 73 on D1.
- Comments BE 41 and 42 on the revised draft BAT conclusions of January 2017.
- [1] D. Huybrechts, E. Verachtert, S. Vander Aa, C. Polders, L. Van den Abeele, Polluted rainwater runoff from waste recovery and recycling companies: Determination of emission levels associated with the best available techniques, Waste Management 2016, 54, pp. 74-82 (draft sent to EIPPCB in March 2016).

EIPPCB assessment

The documents and information referred to in the split view were available in time.

Validity of supporting rationale:

Concerning the lower ends of the BAT-AEL ranges:

- Although in some cases the lower ends of the BAT-AEL ranges have been set at levels that are typical for the LoQ, it does not mean that the LoQ should always be taken as a reference.
- Concerning the example given in the rationale about mercury: the proposed value of 0.15 µg/l is not based on collected data and does not seem to correspond to the information contained in the JRC Reference Report on Monitoring of Emissions to Air and Water from IED installations (ROM). According to the ROM, the LoQ for measurement of mercury are (depending on the EN standard used): 0.008 µg/l or 0.024 µg/l with EN ISO 12846:2012 (with or without enrichment respectively), < 1 ng/l with EN ISO 17852:2008 and about 0.05 µg/l with EN ISO 17294-2:2016.
- For the other metals/metalloids, no example plants are cited on which different lower ends of the BAT-AEL ranges could be based. No proposals are made either.

Concerning the upper ends of the BAT-AEL ranges:

• The reduction of metals/metalloids is linked to the abatement of particles and this was taken into consideration in the proposed BAT-AELs, i.e. the plants applying particle removal

techniques (for instance sedimentation) were considered as applying the appropriate techniques to abate the metals.

- The BAT-AELs for indirect discharges "may not apply if the downstream waste water treatment plant abates the pollutants concerned, provided this does not lead to a higher level of pollution in the environment" (Footnote 2 in Table 6.4). This means that the BAT-AELs apply if the downstream WWTP does not abate the metals and there is no technical reason for having different BAT-AELs for direct and for indirect discharges.
- There is no technical reason for not considering plants with an indirect discharge when determining the BAT-AELs for both direct and indirect discharges.
- The absence of information about the TSS emission levels does not seem to be a sufficient technical reason to disregard the corresponding metal emissions as it is not proof that the plant concerned is not performing well and there was no decision of the TWG to exclude plants from the data collection that did not report TSS values.
- Moreover, a fraction of the metals/metalloids may also be present in dissolved form (e.g. as complexes or as anions (e.g. arsenate), which means that there may be high metal concentrations in conjunction with low TSS concentrations or the other way around. Therefore, the TSS level is not the only criterion to take into consideration.
- The emissions of metals to water should be considered as a whole and not only metal by metal.
- Concerning the example given in the rationale about cadmium:
 - Plant 293C mentioned in the split view applies BAT to reduce emissions of particulatebound cadmium to water (sedimentation) and achieves emissions of 0.01 mg/l. However, the Cu emissions from this plant are relatively high (0.54 mg/l, i.e. higher than the upper end of the BAT-AEL range) and the same is true for Pb and Zn. It is therefore not clear whether Plant 293C is a well-performing plant.
- For the other metals/metalloids, no example plants are cited on which different upper ends of the BAT-AEL ranges could be based. No proposals are made either.

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that the split view representing the opinion of the aforementioned TWG member does not fulfil the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU. This split view will therefore not be reported in the "Concluding remarks and recommendations for future work" chapter of the BREF.

It is proposed however to add a recommendation for future work as to the collection of information about the relationship between TSS and metals emissions to water for the next review of the BREF, also taking into account the direct and indirect discharges.

4.3.5 BAT-AELs for cadmium emissions to water for direct and indirect discharges from treatments other than treatment of WBLW (EEB)

Conclusion of the meeting

Same as in Section 4.3.4 above.

Split view summary

EEB proposes to modify the BAT-AEL range for cadmium to $<4~\mu\text{g/l}$ for treatments other than treatment of WBLW.

The split view is accompanied by the following rationale

- Cd is a Priority Hazardous Substance.
- The Maximum Allowable Concentration limit under the EU Water Framework Directive is set at 1.5µg/l
- Several plants achieve Cd emission levels lower than 0.01 mg/l.
- The upper end of the BAT-AEL range is based on Plant 571. This plant uses air flotation which is not the proper abatement technique.
- All the seven other shredders achieve lower Cd emission levels.
- Plant 427 would cover all the WT inputs and achieved an average Cd emission level of 0.0019 mg/l in 2010 and 0.0035 mg/l in 2011.

Information on which the split view is based

- Data collection.
- Water Framework Directive.

EIPPCB assessment

The documents and information referred to in the split view were available in time.

Validity of supporting rationale:

- Concerning the consideration of the Water Framework Directive and Directive 2008/105/EC on environmental quality standards in the field of water policy, the BAT conclusions are of course applied without prejudice to other legislation but this does not seem to correspond to "*technical, cross-media or economic data or information relevant to the definition of BAT*".
- Plant 427 mentioned in the split view uses precipitation, sedimentation, filtration and activated carbon to abate cadmium emissions to water and has achieved emission values up to 0.0091 mg/l (in 2012). It is not clear why this value was not considered for the proposed upper end of the BAT-AEL range.
- This being said, 9 plants / emission points out of 32 reported Cd emission values below 4 μg/l. Of those, 5 apply techniques considered BAT by the TWG to abate metals and/or particulate-bound metals (precipitation, sedimentation/decantation, filtration).
- The BAT-AEL range for cadmium expressed as $< 4 \mu g/l$ would therefore be possible.

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that the split view representing the opinion of the aforementioned TWG member fulfils the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU. This split view will therefore be reported in the "Concluding remarks and recommendations for future work" chapter of the BREF.

A possible formulation of this split view could be:

BAT conclusion	Dissenting view	Expressed by	Alternative proposed level (if any)
BAT 15, Tables 6.3 and 6.4	Modify the BAT-AEL range for cadmium emissions to water for direct and indirect discharges from waste treatments other than treatment of water-based liquid waste.	EEB	< 4 µg/l

4.3.6 BAT-AELs for cadmium emissions to water for direct and indirect discharges from treatment of WBLW (BE, EEB)

Conclusion of the meeting

Same as in Section 4.3.4 above.

Split view summary

BE and EEB propose to modify the BAT-AEL range for cadmium as follows: $1-50 \mu g/l$.

The split view is accompanied by the following rationale

General:

- Techniques to remove Cd should be applied: flocculation and precipitation (corrected pH, using sulphide), combined with selective ion exchange or sand filtration and activated carbon filtration.
- Cd is a Priority Hazardous Substance.

Rationale on the lower end of the BAT-AEL range:

- 17 plants (direct and indirect dischargers) report maximal Cd concentrations lower than 0.01 mg/l.
- The lowest effluent concentration reported by a plant (i.e. Plant 423_org) is 0.00003 mg/l.
- The lowest Cd effluent concentration reported by a plant making reference to an EN standard (i.e. Plant 392) is 0.001 mg/l.
- The Cd LoQ is $0.8 \mu g/l$ as a maximum.
- According to the ROM, the lower end value of the BAT-AEL range can be defined as (at least) the typical LoQ. This (still) guarantees a level which can be quantified by applying the available measurement methods.

Rationale on the upper end of the BAT-AEL range:

- The upper end of the range has been based on values which do not correspond to measured values (Plants 04, 401_2W and 471_AI).
- Plant 569 has no emission data on cadmium.
- 15 plants applying chemical precipitation and/or activated carbon report maximal Cd concentrations ≤ 0.05 mg/l.
- Meanwhile, Plants 194C_Org, 401_2W, 04_Org_Inorg, 194C_Al_Org, 151C_Org and 140C_Org_Inorg do not apply chemical precipitation or activated carbon.
- Plants 550, 156_2W_Org_Inorg, 156C_1W_Org_Inorg, 154C_Al_Inorg and 322_Org_Inorg provide no data on the monitoring standard used.
- For Plants 550, 156_2W_Org_Inorg, 154C_Al_Inorg, the variability of effluent concentrations is high, but the average emission value is far below 0.05 mg/l.
- Plants 192C_Inorg, 144C, 156C_1W_Org_Inorg and 154C_Al_Inorg (direct discharges) report high maximal concentrations of TSS (> 60 mg/l), which is an important factor considering the high metal partition coefficient for cadmium.
- Plants 192C_Inorg, 144C, 569_Org_Inorg and 322_Org_Inorg have an ELV of more than 0.05 mg/l. There is no incentive for an additional reduction of Cd, but five out of six plants with an ELV lower than 0.05 mg/l are able to respect this value.
- For Plant 144C, the maximal concentration for Hg is higher than the upper end value of the BAT-AEL range for Hg. For Plants 569_Org_Inorg, 215_A1_Org_Inorg, 322_Org_Inorg, 154C_A1_Inorg, all effluent concentrations are above the upper end value of the BAT-AEL range for Hg. These plants are thus not considered well-designed and operating plants.
- In Flanders, a value of 0.002 mg/l was set as the upper end value of the BAT-AEL range, based on an extensive data analysis.

Information on which the split view is based

- Data collection.
- Revised BAT conclusions, January 2017.
- Water Framework Directive.
- ROM.
- Comments BE 65, 66 and 68 on D1.
- Comment BE 39 and 42 on the revised draft BAT conclusions, January 2017.
- Report "BAT for processing of external industrial waste water & liquid sludgy industrial waste streams" available on BATIS since 13.01.2014.

EIPPCB assessment

The documents and information referred to in the split view were available in time.

Validity of supporting rationale:

General:

- The abatement techniques considered BAT by the TWG are listed in BAT 15 and the BAT-AELs have been determined on the basis of the use of these techniques. No technique has been particularly flagged for the abatement of cadmium. Chemical precipitation and activated carbon are relevant to treat dissolved components but it is not possible from the data collection to know the proportion of dissolved metals and the proportion of particle-bound metals for which the solids removal techniques should be relevant. It is to be noted however that cadmium has a relatively high partition coefficient.
- Only one plant (Plant 215_AI_ORG_INORG) uses ion exchange as an abatement technique.
- Concerning the consideration of the Water Framework Directive, the BAT conclusions are of course applied without prejudice to other legislation but this does not seem to correspond to *"technical, cross-media or economic data or information"*.

Rationale on the lower end of the BAT-AEL range:

- Although in some cases the lower ends of the BAT-AEL ranges have been set at levels that are typical for the LoQ, it does not mean that the LoQ should always be taken as a reference.
- Plant 392 achieves Cd emission values below 1 μ g/l measured according to EN-ISO 17294-2 (LoQ is about 0.1 μ g/l) and uses sedimentation for the abatement of suspended particles and particle-bound metals. Therefore a lower end of the BAT-AEL range for cadmium at 1 μ g/l would be possible.

Rationale on the upper end of the BAT-AEL range:

- Concerning the use or not of chemical precipitation and activated carbon, see the assessment of the general issues above.
- High Hg emissions from a given plant can give an indication of insufficient abatement when considering Cd emissions. However, it may also be the case that the abatement efficiency for metals other than Hg may be relatively good (for instance in the case of Plant 569 for Cr, Ni or Pb), so this indication needs to be used carefully.
- National legislation is useful contextual information but is not used as the basis to determine BAT-AELs.
- This being said, 28 plants / emission points out of 44 reported Cd emission values below 0.05 mg/l. Of those, 22 apply techniques considered BAT by the TWG to abate metals and/or

particulate-bound metals (precipitation, sedimentation/decantation, filtration, ultrafiltration, nano-filtration, activated carbon adsorption).

• An upper end of the BAT-AEL range for cadmium at 50 μ g/l would therefore be possible.

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that the split view representing the opinion of the aforementioned TWG member(s) fulfils the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU. This split view will therefore be reported in the "Concluding remarks and recommendations for future work" chapter of the BREF.

A possible formulation of this split view could be:

BAT conclusion	Dissenting view	Expressed by	Alternative proposed level (if any)
Tables 6.3 and 6.4	Decrease the lower end of the BAT-AEL range for cadmium emissions to water for direct and indirect discharge from treatment of water-based liquid waste.	BE, EEB	1 μg/l
Tables 6.3 and 6.4	Decrease the upper end of the BAT-AEL range for cadmium emissions to water for direct and indirect discharge from treatment of water-based liquid waste.	BE,EEB	50 μg/l

4.3.7 BAT-AELs for mercury emissions to water for direct and indirect discharges from the treatment of WBLW (BE)

Conclusion of the meeting

Same as in Section 4.3.4.

Split view summary

BE proposes to modify the BAT-AEL range for Hg emissions to water from the treatment of WBLW as follows: $0.15-5 \mu g/l$.

This split view is supported by EEB.

The split view is accompanied by the following rationale

General:

- Hg is a Priority Hazardous Substance.
- Techniques to remove Hg should be applied: precipitation (corrected pH, using sulphide), combined with selective ion exchange or sand filtration and activated carbon filtration.

Rationale on the lower end of the BAT-AEL range:

- The LoQ is lower than 1 μ g/l, and the maximal LoQ is 0.15 μ g/l.
- According to the ROM, the lower end value of the BAT-AEL range can be defined as (at least) the typical LoQ. This (still) guarantees a level which can be quantified by applying the available measurement methods.
- 10 plants (direct and indirect dischargers) report maximal Hg concentrations lower than 1 μ g/l.
- The lowest concentration reported by a plant (i.e. Plant 421_org) is $0.04 \mu g/l$.
- The lowest effluent concentration reported by a plant making reference to an EN standard (i.e. Plant 392) is $0.1 \mu g/l$.

Rationale on the upper end of the BAT-AEL range:

- Nine plants applying chemical precipitation, whether combined with activated carbon or not, report maximal Hg concentrations $\leq 5 \ \mu g/l$.
- Meanwhile, Plants 156C_AI_Org, 471, 215_Org_Inorg, 473_Al, 473, 401_2W, 140_AI_Org and 04_Org_Inorg do not apply chemical precipitation or activated carbon.
- Plants 471_A1 and 215_A1_Org_Inorg report their maximal concentration as being < 0.05 mg/l. The actual maximal concentrations are not reported.
- Plants 322_Org_Inorg, 154C_Al_Inorg, 317_AI_Org_Inorg and 154C_Inorg provide no data on the monitoring standard used.
- All values reported by Plant 154C_Inorg (72 in total) are equal to 0.01 mg/l. The reported values are undoubtedly the LoQ of the standard used.
- Plants 154C_Al_Inorg and 144C (direct discharges) report high concentrations of TSS (> 60 mg/l), which is an important factor considering the high metal partition coefficient for mercury.
- Plants 569_Org_Inorg, 322_Org_Inorg, 154C_Al_Inorg, 144C, 317_Org_Inorg and 154C_Inorg have an ELV of 0.05 mg/l, or 50 µg/l. There is no incentive for an additional reduction of Hg (adding additional coagulant/flocculant). All plants with an ELV lower than 0.005 mg/l, or 5 µg/l, are able to respect this value.
- In Flanders, a value of 0.0003 mg/l, or 0.3 µg/l, is considered viable, based on an extensive data analysis.

Information on which the split view is based

- Revised BAT conclusions, January 2017.
- Data collection.
- Water Framework Directive.
- ROM.
- Comments BE 65 and 68 on D1.
- Comment BE 42 on the revised BAT conclusions.
- Report "BAT for processing of external industrial waste water & liquid sludgy industrial waste streams" available on BATIS since 13.01.2014.

EIPPCB assessment

The documents and information referred to in the split view were available in time.

Validity of supporting rationale:

General:

- The abatement techniques considered BAT by the TWG are listed in BAT 15 and the BAT-AELs have been determined on the basis of these techniques. No technique has been particularly flagged to the abatement of mercury. Chemical precipitation and activated carbon are relevant to treat dissolved components, but it is not possible from the data collection to know the proportion of dissolved metals and the proportion of particle-bound metals for which the solids removal techniques should be relevant. It is to be noted however that mercury has a high coefficient partition.
- Concerning the consideration of the Water Framework Directive, the BAT conclusions are of course applied without prejudice to other legislation but this does not seem to correspond to *"technical, cross-media or economic data or information relevant to the definition of BAT"*.

On the lower end of the BAT-AEL range:

- Although in some cases the lower ends of the BAT-AEL ranges have been set at levels that are typical for the LoQ, it does not mean that the LoQ should always be taken as a reference.
- The proposed value of $0.15 \,\mu g/l$ for the lower end of the BAT-AEL range is not based on collected data and does not seem to correspond to the information contained in the ROM. According to the ROM, the LoQ for measurement of mercury are (depending on the EN standard used): $0.008 \,\mu g/l$ or $0.024 \,\mu g/l$ with EN ISO 12846:2012 (with or without enrichment respectively), < 1 ng/l with EN ISO 17852:2008 and about 0.05 $\mu g/l$ with EN ISO 17294-2:2016.

On the upper end of the BAT-AEL range:

- Concerning the use or non-use of chemical precipitation and activated carbon, see the assessment of the general issues above.
- National legislation is useful contextual information but is not used as basis to determine BAT-AELs.
- This being said, 21 plants / emission points out of 38 reported Hg emission values below 5 µg/l. Of those, 17 apply techniques considered BAT by the TWG to abate metals and/or particulate-bound metals (precipitation, sedimentation/decantation, filtration, ultrafiltration, nano-filtration activated carbon adsorption,).
- An upper end of the BAT-AEL range for mercury at 5 μ g/l would therefore be possible.

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that part of the split view representing the opinion of the aforementioned TWG member fulfils the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU. This split view will therefore be reported in part in the "Concluding remarks and recommendations for future work" chapter of the BREF.

A possible formulation of this split view could be:

BAT conclusion	Dissenting view	Expressed by	Alternative proposed level (if any)
BAT 15, Tables 6.3 and 6.4	Decrease the upper end of the BAT- AEL range for mercury emissions to water for direct and indirect discharges from treatment of water- based liquid waste.	BE (supported by EEB)	5 μg/l

5 BAT CONCLUSIONS FOR MECHANICAL TREATMENT OF WASTE

5.1 Applicability of fabric filter in BAT 25b (EFR)

Conclusion of the meeting

Slide 187 on techniques to reduce dust, particulate-bound metals, PCDD/Fs and dioxin-like PCBs.

Technique		Description	Applicability
a	Fabric filter	See Section 6.6.1.	May not be applicable to exhaust air ducts directly connected to the shredder when the effects of deflagration on the fabric filter cannot be mitigated (e.g. by using pressure relief valves).

Split view summary

EFR proposes to revert the text of the applicability to the wording of D1, i.e. "May not be applicable to exhaust air ducts directly connected to the shredder when there is a risk of deflagration".

The split view is accompanied by the following rationale

- The effects of the deflagration on the fabric filter cannot be mitigated by pressure relief valves, which allow the prevention of damage to the shredder and the pipes.
- Besides deflagration, fire is also a risk for the fabric filter and the pressure relief valves have no effect on this.
- The applicability of fabric filters is also restricted by climate conditions: in the case of cold weather, the fabric filter would need to be heated continuously.
- The applicability of fabric filters is also restricted by potential clogging due to the mixture of dust and oily liquids contained in the waste gas.

Information on which the split view is based

- Draft 1 of the revised WT BREF.
- Letter from METSO (manufacturer of shredders), in BATIS.

EIPPCB assessment

The documents and information referred to in the split view were available in time.

Validity of the supporting rationale:

- There is no justification why the effects of deflagrations on the fabric filter cannot be mitigated by pressure relief valves.
- The applicability restrictions due to fire, climate conditions or risk of clogging are not mentioned in the text which EFR proposed to adopt, so it is not clear how they relate to the split view.
- In any case, there seems to be a misunderstanding of the applicability restriction. The text does not say that fabric filters are applicable when pressure relief valves are used. Instead, pressure relief valves are listed as one example of a solution to mitigate the effects of deflagration: if this technique does not work and the effects of deflagration cannot be mitigated by other techniques either, then fabric filters may not be applicable.

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that the split view representing the opinion of the aforementioned TWG member does not fulfil the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU. This split view will therefore not be reported in the "Concluding remarks and recommendations for future work" chapter of the BREF.

5.2 Upper end of the BAT-AEL range for dust emissions to air from mechanical treatment of waste (FR, EFR)

Conclusion of the meeting

Slide 189 on the BAT-AEL range for channelled dust emissions to air from mechanical treatment of waste.

Table 6.5: BAT-associated emission levels (BAT-AELs) for channelled dust emissions to air from mechanical treatment of waste

Parameter	Unit	BAT-AEL (Daily average or average over the sampling period)
Dust	mg/Nm ³	$2-5(^{1})$
(¹) When a fabric filter is not appli	icable, the upper end	of the range is 10 mg/Nm ³ .

Split view summary

FR and EFR propose to amend the BAT-AEL range in Footnote 1 of Table 6.5. The proposal is to increase the upper end from 10 mg/Nm³ to 20 mg/Nm³ (or, as an alternative, to increase the upper end only for mechanical treatment in shredders of End-of-Life Vehicles (EoLV) and large appliances not containing VFCs and/or VHCs).

The split view is accompanied by the following rationale

- The data set on which the BAT-AEL is based concerns different types of mechanical treatment with different waste gas characteristics and different dust characteristics. Therefore, the different types of mechanical treatment should be considered separately.
- In particular, shredders designed to treat EoLV and large appliances are subject to a higher risk of deflagration and should not be compared to shredders of small appliances (Plants 27, 29 and 464).
- FR proposed two plants for the data collection which appeared not to be representative of the French plants, hence additional data was provided by EFR in agreement with FR.
- Some emission points do not correspond to the shredder itself (Plants 28_1, 282C, 285C_2, 286, 293C and 294C) and Plant 464 should not be considered in the data collection because it reports five points of emission whereas this kind of plant usually has no more than two.
- A reassessment of the data processed by the EIPPCB as well of the additional data shows that an upper end of the range of 20 mg/Nm³ is reasonable for mechanical treatment in shredders of EoLV and large appliances not containing VFCs and/or VHCs.

Information on which the split view is based

- Draft D1 of the revised WT BREF.
- Comments provided within the commenting period for Draft 1.
- Additional data provided by EFR.
- Comments made on the revised draft BAT conclusions prior to the final TWG meeting.

EIPPCB assessment

The documents and information referred to in the split view were available in time.

Validity of the supporting rationale:

• The basis (e.g. plants, abatement techniques used, applicability of fabric filter) for proposing 20mg/Nm³ as the upper end of the range when the fabric filter is not applicable is not explained.

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that the split view representing the opinion of the aforementioned TWG member does not fulfil the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU. This split view will therefore not be reported in the "Concluding remarks and recommendations for future work" chapter of the BREF.

5.3 BAT for emissions to air of organic compounds from mechanical treatment of waste with calorific value (RO)

Conclusion of the meeting

Slides 212 - 213 on emissions to air of organic compounds from the mechanical treatment of waste with calorific value.

BAT 29ter. In order to reduce emissions to air of organic compounds, BAT is to apply BAT 10d and to use one or a combination of the techniques given below.

	Technique	Description
a	Adsorption	
b	Biofilter	See Section 6.6.1
с	Thermal oxidation	See Section 0.0.1.
d	Wet scrubbing	

Table 6.6 bis: BAT-associated emission levels (BAT-AELs) for channelled TVOC emissions to air from the mechanical treatment of waste with calorific value

Parameter	Unit	BAT-AEL (Average over the sampling period)		
TVOC	mg/Nm ³	10-30 (¹)		
¹) The BAT-AEL only applies when organic compounds are identified as relevant in the waste gas stream, based on the neutrony mentioned in BAT 2 bis				

The associated monitoring is given in BAT 4.

Split view summary

RO proposes either:

- A) to delete BAT 29ter (and the corresponding BAT-AEL) and to add a recommendation that more information on emissions of organic compounds to air from mechanical treatment of waste with calorific value should be collected during the next review of the BREF; or
- B) to increase the upper end of the BAT-AEL range for TVOC in Table 6.6bis to 40 mg/Nm³.

The split view is accompanied by the following rationale

Concerning proposal A):

- Only 7 plants out of 35 carrying out mechanical treatment of waste with calorific value reported emissions of organic compounds to air.
- Therefore the applicability of recommended abatement techniques is questionable, as a direct link between the techniques applied and the emission values cannot be shown statistically. For instance, for each of the possible techniques, there are only one to four plants using this technique with emission values which may be above the upper end of the BAT-AEL range.
- According to Commission Implementing Decision 2012/119/EU, "evidence (i.e. solid technical and economic information) to support a technique as being BAT can come from one or more plants applying the technique somewhere in the world. In cases where the information on the technique comes from only one plant and/or from plants located in third regions, a thorough assessment of the applicability within the sector will be carried out by the TWG". Given the time restrictions, the assessment made by the TWG was not a thorough one.

Concerning proposal B):

- An upper end of the range at 40 mg/Nm³ for TVOC would be consistent with BAT 32 where the same techniques are used and non-hazardous wastes from the same waste streams are treated.
- An identical upper end of the range would ensure a level playing field between various treatments.
- The environmental impact of this type of waste treatment is low.

Information on which the split view is based

- Data set for mechanical treatment of waste.
- Revised proposals for draft BAT conclusions posted in BATIS in January 2017.
- Commission Implementing Decision 2012/119/EU.

EIPPCB assessment

The documents and information referred to in the split view were available in time.

Validity of the supporting rationale:

Concerning proposal A):

- According to Commission Implementing Decision 2012/119/EU, "evidence (i.e. solid technical and economic information) to support a technique as being BAT can come from one or more plants applying the technique somewhere in the world". Having in the data collection only one plant applying a technique listed as BAT does therefore not contradict the BAT guidance.
- The techniques listed are widely used in different industry sectors to abate emissions of organic compounds to air (see e.g. CWW BREF). No rationale is provided as to why these techniques should not be applicable for the treatment of waste gases from the mechanical treatment of waste with calorific value.
- The argument on the absence of thoroughness of the TWG review due to lack of time relates to the procedure, but it is not based on *"appropriate technical, cross-media or economic data or information"*.

Concerning proposal B):

- MBT plants and plants for the mechanical treatment of waste with calorific value use the same waste gas treatment techniques and process similar waste streams (mostly municipal waste). However, the waste treatment itself is different as there is a biological step at MBT plants which does not exist at plants carrying out mechanical treatment of waste with calorific value. In fact, most of the emissions reported by MBT plants include emissions from the biological step of the treatment.
- BAT-AELs are derived from emission data of plants using BAT and not on data relating to the environmental impact.

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that the split view representing the opinion of the aforementioned TWG member does not fulfil the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU. This split view will therefore not be reported in the "Concluding remarks and recommendations for future work" chapter of the BREF.

6 BAT CONCLUSIONS FOR THE BIOLOGICAL TREATMENT OF WASTE

6.1 BAT Statement of BAT 32 (IT, EEB)

Conclusion of the meeting

Slide 222 on BAT 32.

BAT 32. In order to reduce channelled emissions to air of dust, organic compounds and odorous compounds, including H₂S and NH₃, BAT is to use one or a combination of the techniques given below.

	Technique	Description
a	Adsorption	See Section 6.6.1.
b	Biofilter	See Section 6.6.1. A pretreatment of the waste gas before the biofilter (e.g. with a water or acid scrubber) may be needed in the case of high NH_3 content (e.g. 5–40 mg/Nm ³) in order to control the media pH and to limit the formation of N_2O in the biofilter. Some other odorous compounds (e.g. mercaptans, H_2S) can cause acidification of the biofilter media and necessitate the use of a water or alkaline scrubber as pretreatment of the waste gas before the biofilter.
с	Fabric filter	See Section 6.6.1. The fabric filter is used in the case of mechanical biological treatment of waste.
d	Thermal oxidation	See Section 6.6.1.
e	Wet scrubbing	See Section 6.6.1. Water, acid or alkaline scrubbers are used in combination with a biofilter, thermal oxidation or adsorption on activated carbon.

Split view summary

EEB and IT propose to modify the BAT statement as follows: "In order to reduce emissions to air of dust, organic compounds and odorous compounds, including H_2S and NH_3 , BAT is <u>to apply BAT 10d</u> and to use one or a combination of the techniques given below".

The split view is accompanied by the following rationale

- The reference to BAT 10d in the statements of the treatment-specific BAT conclusions aims to address diffuse emissions of these processes. This reference has been deleted in BAT 32 regarding biological treatment without sound justification, leading to inconsistency in the conclusions and to a lower level of ambition in general.
- The intensive decomposition (active composting time) of highly putrescible waste, when taking place in open systems, may cause huge problems related to the emission of odorous compounds.
- MBT plants performing not only biological but also mechanical treatment of waste also fall under the scope of the BAT conclusions for biological treatment.
- The statement added in BAT 10d ("*Depending on the risk posed by the waste in terms of diffuse emissions to air, BAT 10d is specially relevant*") is not an adequate alternative solution as it leaves a lot of room for misinterpretation and does not ensure that 10d will indeed be implemented when diffuse emissions have a serious impact.
- During the final meeting, it was suggested to keep the statement of BAT 32 with the reference to BAT 10d, and to adjust the applicability of BAT 10d in order to give the possibility to exempt specific situations from the technique (e.g. open-air composting of non-putrescible waste).

Information on which the split view is based

• Comments IT 22 and 45 on D1 of the revised WT BREF.

• Background Paper (BP) for the final TWG meeting, notably the EIPPCB's assessments on page 58, "Additional techniques", second bullet point, and on page 118, last bullet point.

EIPPCB assessment

The documents and information referred to in the split view were available in time.

Validity of the supporting rationale:

- The change of wording is the result of the TWG discussion during the final TWG meeting.
- Enclosure is not the only measure to reduce odour emissions from putrescible waste. BAT 9 gives other possible techniques and the statement added in BAT 10 about BAT 10d is guidance to choose the most appropriate solution.
- This being said, MBT plants include a mechanical step and other BAT related to emissions to air from other types of mechanical treatment refer to BAT 10d in their statements. In some of these mechanical treatments (for instance in mechanical treatment of waste with calorific value), similar waste may be treated (e.g. mixed municipal waste) and it would make sense to also have a reference to BAT 10d in that case (in BAT 32 and also possibly in BAT 36).
- Moreover, as mentioned in the Background Paper in page 58, enclosure of intensive decomposition could be a technique to prevent and reduce odour emissions.

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that a part of the split view representing the opinion of the aforementioned TWG members fulfils the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU as far as MBT plants are concerned. This split view will therefore be reported in part in the "Concluding remarks and recommendations for future work" chapter of the BREF.

A possible formulation of this split view could be:

BAT conclusion	Dissenting view	Expressed by	Alternative proposed level (if any)
BAT 32	As far as MBT plants and intensive decomposition of highly putrescible waste are concerned, reformulate the BAT statement as follows: "() BAT is to apply BAT 10d and to use one or a combination of the techniques given below."	IT, EEB	N/A

6.2 Upper end of the BAT-AEL range for odour emissions to air set in Table 6.8 (ECN, EBA, MWE)

Conclusion of the meeting

Slide 227 presents the BAT-AEL for odour emissions to air from biological treatment of waste.

Table 6.8: BAT-associated emission levels (BAT-AELs) for channelled NH₃, odour, dust and TVOC emissions to air from the biological treatment of waste

Parameter	Unit	BAT-AEL (Daily average or average over the sampling period)	Waste treatment process	
$NH_{3}(^{1})(^{2})$	mg/Nm ³	0.3–20		
Odour concentration $\binom{1}{2}$	ou _E /Nm ³	200–1000	All biological treatments of waste	
Dust	mg/Nm ³	2–5 Mechanical biological tre		
TVOC	mg/Nm ³	$5-40(^3)$ waste		
(¹) Either the BAT-AEL for NH ₃ or the BAT-AEL for the odour concentration applies. (²) This BAT-AEL does not apply to the treatment of waste mainly composed of manure.				

The associated monitoring is given in BAT 4.

Split view summary

ECN, EBA and MWE propose to increase the upper end of the range for odour concentration to $1500 \text{ ou}_{\text{E}}/\text{Nm}^3$.

The split view is accompanied by the following rationale

- There are different kinds of odour, all measured with the standard EN 13725 but not all types are unpleasant and a source of nuisance.
- Odour may be a nuisance but does not represent a direct environmental or health risk, and nuisance depends on a lot of factors (presence and location of sensitive receptors, local topographical and meteorological conditions, etc.).
- During the final TWG meeting, the value of $1500 \text{ ou}_{\text{E}}/\text{Nm}^3$ was supported by several Member States and only challenged by Italy and EEB.
- It will be the first BREF where a BAT-AEL for odour will be included, so the BAT-AEL should not be too strict.
- More than 30 % of the plants covered in the data collection exceeded the 1 500 ou_E/Nm^3 .
- Lack or insufficiency of contextual information associated with the data reported.
- There is a lack of reproducibility in olfactometry.
- Some data has been reported with high uncertainties.

Information on which the split view is based

- Data collection for biological treatment plants.
- Comments ECN 47 and EBA 33 on the revised BAT conclusions.

EIPPCB assessment

The documents and information referred to in the split view were available in time.

Validity of the supporting rationale:

• In the context of BAT 32, odour is not to be considered as a nuisance but as a surrogate parameter for other pollutants which have an impact on the environment. For example, the BAT-AEL on

odour is an alternative to the BAT-AEL on NH₃. This means that the BAT-AEL does not depend on the location of the plant and the presence of sensitive receptors (like for NH₃).

- The level of support given to different positions during the final TWG meeting cannot be considered "*technical, cross-media or economic data or information relevant to the definition of BAT*".
- This BREF being the first one to include a BAT-AEL on odour cannot be considered "*technical*, *cross-media or economic data or information relevant to the definition of BAT*".
- The basis (e.g. plants concerned, abatement techniques used) for proposing 1 500 ou_E/Nm³ as an upper end of the BAT-AEL range is not clear.

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that the split view representing the opinion of the aforementioned TWG members does not fulfil the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU. This split view will therefore not be reported in the "Concluding remarks and recommendations for future work" chapter of the BREF.

6.3 Upper end of the BAT-AEL range for odour emissions to air (addition of a footnote in Table 6.8) (EEB)

Conclusion of the meeting

Same as in the previous section.

Split view summary

EEB proposes to add the following footnote in Table 6.8 regarding the BAT-AEL for odour: "The upper level of the BAT-AEL is $500 \text{ ou}_{\text{E}}/\text{Nm}^3$ in the proximity of sensitive receptors".

The split view is accompanied by the following rationale

- A level of 500 ou_E/Nm^3 can be achieved with the application of appropriate techniques as shown by the results of the data collection.
- Furthermore, plants are already regulated to this level in Germany.
- The initial EIPPCB proposal of $100-400 \text{ ou}_{\text{E}}/\text{Nm}^3$ in the revised BAT conclusions has now been considerably increased to $200-1\ 000\ \text{ou}_{\text{E}}/\text{Nm}^3$ without justification based on the available data.
- At least in the case where a plant is located close to sensitive receptors, the competent authority should be supported by the BAT conclusions to set the permit level at $500 \text{ ou}_{\text{E}}/\text{Nm}^3$ or lower.

Information on which the split view is based

- Data collection.
- TA Luft (German regulation on air pollution).
- Revised draft BAT conclusions, January 2017.

EIPPCB assessment

The documents and information referred to in the split view were available in time.

Validity of the supporting rationale:

- The setting of BAT-AELs is the result of the TWG discussions at the final TWG meeting.
- Legislation may be a driving force for implementing techniques but cannot be used as a basis to set BAT-AELs.

• In the context of BAT 32, odour is not to be considered as a nuisance but as a surrogate parameter for other pollutants which have an impact on the environment. For example, the BAT-AEL on odour is an alternative to the BAT-AEL on NH₃. This means that the BAT-AEL does not depend on the location of the plant and the presence of sensitive receptors nor does it depend on whether odour is considered a nuisance or not.

The split view proposes to add the footnote to table 6.8 "the upper level of the BAT-AEL is 500 ou_E/Nm^3 in the proximity of sensitive receptors." The last words of the footnote clearly mean that the upper level of the BAT-AEL is 500 ou_E/Nm^3 only if there is a nuisance, which is in contradiction with the above mentioned principle.

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that the split view representing the opinion of the aforementioned TWG member does not fulfil the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU. This split view will therefore not be reported in the "Concluding remarks and recommendations for future work" chapter of the BREF.

6.4 Upper end of the BAT-AEL range for NH₃ emissions to air from mechanical-biological treatment of waste in table 6.8 (EEB)

Conclusion of the meeting

Same as in the previous section.

Split view summary

EEB proposes to decrease the upper end of the range of the BAT-AEL for NH_3 for MBT plants from 20 mg/Nm³ to 10 mg/Nm³.

The split view is accompanied by the following rationale

- A level of 10 mg/Nm³ can be achieved with the application of appropriate techniques as shown by the results of the data collection (all plants but one report emission levels below 10 mg/Nm³).
- The initial EIPPCB proposal for an upper end of the BAT-AEL range of 10 mg/Nm³ has now been increased to 20 mg/Nm³ without justification based on the available data.
- At least in the case of MBT plants, where the capacity (and corresponding emission flow) is high for most plants, the competent authority should be supported by the BAT conclusions to set the permit level at 10 mg/Nm³ or lower to ensure the impact is minimised.

Information on which the split view is based

- Data collection.
- Revised draft BAT conclusions, January 2017.

EIPPCB assessment

The documents and information referred to in the split view were available in time.

Validity of the supporting rationale:

- The change to the BAT-AEL is the result of the TWG discussion during the final TWG meeting.
- This being said, out of 15 MBT plants / emission points reporting NH₃ emissions to air, 13 reported emissions below 10 mg/Nm³ and apply techniques considered BAT for NH₃ abatement (biofilter, sometimes with water or acid scrubbing).

EIPPCB conclusion

Taking these aspects into account, the EIPPCB considers that the split view representing the opinion of the aforementioned TWG member fulfils the conditions set out in Section 4.6.2.3.2 of Commission Implementing Decision 2012/119/EU. This split view will therefore be reported in the "Concluding remarks and recommendations for future work" chapter of the BREF.

A possible formulation of this split view could be:

BAT conclusion	Dissenting view	Expressed by	Alternative proposed level (if any)
Table 6.8	Decrease the upper end of the BAT-AEL range for NH3 emissions to air from MBT plants.	EEB	$10 mg/Nm^3$