

**OPINION OF THE FORUM FOR THE EXCHANGE OF INFORMATION PURSUANT TO ARTICLE
13 OF THE DIRECTIVE 2010/75/EU ON INDUSTRIAL EMISSIONS (IED ARTICLE 13
FORUM)**

concerning the Draft Best Available Techniques (BAT) Reference document for
Waste Incineration

Meeting of 27 February 2019

1. BACKGROUND

Article 13(1) of Directive 2010/75/EU on industrial emissions¹ (the Directive) requires the Commission to organise an exchange of information between Member States, the industries concerned, non-governmental organisations promoting environmental protection and the Commission.

Article 13(3) of the Directive requires the Commission to establish and regularly convene a forum composed of representatives of Member States, the industries concerned and non-governmental organisations promoting environmental protection and to obtain the opinion of the forum on the practical arrangements for the exchange of information foreseen under that Article. In accordance with Article 13(3) of the Directive, the guidance referred to in points (c) and (d) of the second subparagraph of that Article shall take account of the opinion of the forum and shall be adopted in accordance with the regulatory procedure referred to in Article 75(2).

Commission Decision 2011/C 146/03² established the forum for the exchange of information pursuant to Article 13 of the Directive (the forum). In accordance with Article 3 of this Decision, the forum may be consulted on any matter relating to Article 13 of the Directive or on any matter relating to BAT as defined in Article 3(10) of the Directive.

2. OPINION OF THE FORUM

In accordance with Article 13(3) of the Directive, the forum hereby gives its opinion on the draft Best Available Techniques (BAT) reference document for Waste Incineration as presented at the meeting of the forum of 27 February 2019³.

¹ OJ L 334, 17.12.2010, p. 17–119, Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control), Text with EEA relevance,

² OJ C 146, 17.5.2011, Commission Decision of 16 May 2011 establishing a forum for the exchange of information pursuant to Article 13 of the Directive 2010/75/EU on industrial emissions

³ <https://circabc.europa.eu/ui/group/06f33a94-9829-4eee-b187-21bb783a0fbf/library/af1be248-c968-4dd2-946b-a14524bb420f/details>

Annex B

- (1) The forum welcomes the draft Best Available Techniques (BAT) reference document for Waste Incineration as presented by the Commission.
- (2) The forum acknowledges the discussions held at its meeting of 27 February 2019 and agrees that the changes to the draft Best Available Techniques (BAT) reference document for Waste Incineration, as proposed in Annex A, should be included in the final document.
- (3) The forum reaffirms the comments in Annex B as representing the views of certain members of the forum but, on which, no consensus exists within the forum to include them in the final document.

Brussels, 19 March 2019

Annex A: Comments on the draft Best Available Techniques (BAT) reference document for Waste Incineration that are consensual within the forum.

Annex B: Comments on the draft Best Available Techniques (BAT) reference document for Waste Incineration that are representing the view of certain members of the forum.

ANNEX A: COMMENTS ON THE DRAFT BEST AVAILABLE TECHNIQUES (BAT) REFERENCE DOCUMENT FOR WASTE INCINERATION THAT ARE CONSENSUAL WITHIN THE FORUM

Comment No	Chapter No/ Commnet No					Page	Comment description	Proposal for modification	Rationale
1						all	The data collection underpinning the WI BREF review is referred to in two different ways in the BREF.	In the whole document, replace "the data collection" by "the 2016 data collection".	Editorial
2	5					477	There is a typo in the sentence: "BAT is to monitor the content of unburnt substances t in slags and bottom ashes at the incineration plant with at least the frequency given below and in accordance with EN standards."	Delete the "t" between the word "substances" and "in"	Editorial
3	8	2	1			517	The text on page 517 is not in line with table 8.1 on page 516. It seems that Table 8.1 is by mistake a copy of Table 8.2.	Restore the correct Table 8.1	Correction of editing error
4	8	2				519	Table 8.3	Please replace "heat-onlyplant" by "heat-only plant"	Editorial
5	8	2					Within the Energy efficiency subgroup, examples of hybrid plants have been elaborated. Unfortunately, the latter are not mentioned in this part of the document.	Add in Annex 8.2 a further example of a hybrid plant with a condensing turbine with steam extraction that was recently developed by the Energy subgroup of the WI TWG	The examples of hybrid plants that were initially drafted were dropped from the Final Draft as they turned out to be cases that in reality could be reduced to the cases already covered by the basic configurations. The Energy subgroup has however collected additional data and worked out a further relevant example.
6	5	1	5	2	5	493	Daily averageor	Insert a space between 'average' and 'or'.	Editorial
7	3	2	1			172	CO is the only parameter described in his section that includes the units of measurement (Nm3).	Do not include units for any parameters	Consistency with other parameters / Editorial
8	3	2	1			174	Mercury and mercury compounds description should be in a new paragraph	New line for mercury and mercury description.	Consistency with other parameters / Editorial
9	3	2	1			177	The VOC term is not correct in the following context: Methane is measured among the VOC components	Amend text to: Methane is measured among the TVOC components.	Accuracy and consistency with the rest of the document / Editorial
10	2	2	3	1		31	Specify that municipal sewage sludge contains significant levels of phosphorus, an EU Critical Raw Material	Add following text: "Sewage sludge also contains phosphorus generally in the range 1-2.5% dry matter, depending on whether or not the sewage works operate phosphorus removal and on the pretreatment. There is thus an opportunity for phosphorus recovery either upstream of sewage sludge incineration or from the incineration ashes", and add the mentioned reference to the list of references.	Reference: "Phosphorus speciation in sewage sludge", E. Bezak-Mazur et al., Env Protection Engineering, 40-3, 2014 https://doi.org/10.5277/epe140313 taken from "Are standard wastewater treatment plant design methods suitable for any municipal wastewater?", G. Insel et al., Water Sci. Technol., 2012, 66, 328 https://doi.org/10.2166/wst.2012.176
11	2	2	3	2		31	Underline that priority in sewage sludge treatment should be reuse and resource recovery, conform to the Waste Framework Directive waste hierarchy	Add to Section 2.2.3.2, as an introduction to the following subsections: "Different types of pretreatment are applied to sewage sludge. Some are specifically connected to the incineration properties of the material (in particular, processes for the reduction of the water content of the sludge), while others can have different purposes, including for the recovery of the resources contained in the raw sludge (e.g. biogas, phosphorus), and may have a more or less pronounced influence on the ensuing incineration process. The following subsections describe some commonly applied sludge pretreatment processes."	This section of the BREF deals in particular with commonly practised pretreatments that are conducted for the purpose of incineration or that have a strong influence on the incineration characteristics of the sludge.

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Comment No	Chapter No/ Commnet No					Page	Comment description	Proposal for modification	Rationale
	2	6	3	4					
12	2	6	3	4		124	Specify that bottom ash from sewage sludge incineration (mono-incinerators) contains 7-11 % phosphorus, significant because phosphate rock is on the EU Critical Raw Materials list	Add at the end of Section 3.1.1: "Bottom ash and fly ash from mono-incineration of sewage sludge (that is, incineration of sewage sludge alone, not mixed with wastes containing low levels of phosphorus such as municipal solid waste or industrial sludges) contain 7-11% phosphorus, and recovery is feasible to produce e.g. industrial phosphorus chemicals (such as phosphoric acid) or fertilisers", and add the mentioned reference to the list of references.	References: "Comparison of phosphorus recovery from incinerated sewage sludge ash (ISSA) and pyrolysed sewage sludge char (PSSC)", R. Kleemann et al., Waste Management, Volume 60, February 2017, Pages 201-210 https://doi.org/10.1016/j.wasman.2016.10.055 and "Leaching of phosphorus from incinerated sewage sludge ash by means of acid extraction followed by adsorption on orange waste gel", B. Biswas, Journal of Environmental Sciences, Volume 21, Issue 12, 2009, Pages 1753-1760 https://doi.org/10.1016/S1001-0742(08)62484-5 and "Phosphorus recovery from municipal wastewater: An integrated comparative technological, environmental and economic assessment of P recovery technologies", L. Egle et al., Science of the Total Environment 571 (2016) 522–542 http://dx.doi.org/10.1016/j.scitotenv.2016.07.019 "Environmental impacts of phosphorus recovery from municipal wastewater", A. Amann, O. Zoboli, J. Krampe, H. Rechberger, M. Zessner, L. Egle, Resources, Conservation & Recycling 130 (2018) 127–139 https://doi.org/10.1016/j.resconrec.2017.11.002
13	4	7	2			451	Add under "Example plants" examples of plants using chemical processing to recover phosphorus from sewage sludge (mono)-incineration bottom and fly ash	Include in Chapter 6 an emerging technique consisting in phosphorous recovery, based on the following data sources: EasyMining Ash2Phos process, pilot plant Helsingborg, Sweden, http://www.easymining.se/news/successful-pilot-runs-of-the-ash2phos-process-in-helsingborg/ ; Remondis pilot plant operating in Elverlingsen, Germany, and full scale plant under construction in Hamburg, Germany https://www.hamburgwasser.de/privatkunden/unternehmen/presse/hamburg-wasser-und-remondis-gruenden-gesellschaft-zur-phosphorrueckgewinnung/ ; Zurich ZAB Phos4Life pilot https://awel.zh.ch/internet/audirektion/awel/de/abfall_rohstoffe_altlasten/abfall/siedlungsabfaelle/klaerschlamme/_jcr_content/contentPar/downloadlist_0/downloaditems/fiche_de_project_no__spooler.download.1494572683901.pdf/projektblatt_phosphor_klaerschlammasche_nr_5_fr.pdf	The list of examples provided only includes pilot plants or plants still under construction. The phosphorous recovery process is therefore to be considered an emerging technique rather than a BAT candidate.
14	3					178	"possibly resulting in PCDD/F emission loads equivalent to several months of normal operation being associated to a single cold start" is obsolete and not relevant.	Add a cross-reference to Section 4.5.5.2 on prevention of reformation of PCDD/F in the FGC system, where a reference to techniques to prevent PCDD/F emissions at start-up is proposed to be added (see also comment 16).	The very high concentrations during start-up were identified in the 1990s and, as soon as understood, corrected. Since at least 12/2001 (deadline for compliance with the WID of 2nd generation) these very high peaks have disappeared. It does not happen that emissions peaks equivalent to several months of operation are released. This can be verified in the reports of emissions of WI plants and in available online registers of emissions such as E-PRTR, the European Pollutant Release and Transfer Register.
15						544	Spelling mistake	Replace "ESWEP" by "ESWET" in the third row of split view 6.	ESWET stands for "European Suppliers of Waste to Energy Technology"./ Editorial

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16	4	5	5		438	PCDD/F emissions at cold starts is an important issue that may have significant impacts if not properly addressed. It therefore merits a reference in Chapter 4.	Add to Section 4.5.5.2 the following text: ' De novo synthesis may potentially also cause high PCDD/F emission loads during cold start-ups. This may be minimised by avoiding the use of a bypass upstream of the bag filter at start-up. The preheating of the bag filter before start-up, or the preheating of the flue-gas at start-up are techniques to prevent the low-temperature clogging of the bag filter '	<p>1) This is an important environmental issue, yet there seems to be a lack of knowledge and recognition outside Germany. A reference in Chapter 4 provides further background to the permit writer to understand why it is crucial to give special attention to the 'design of critical equipment' point of BAT 18 and to the examples referred to therein.</p> <p>2) Chapter 4 should, in principle, outline all the options available to deal with all important environmental issues referred to in the BREF. The importance of this issue is recognised in Chapter 3.</p> <p>3) The term 'technique' (as per the IED Article 3(10)(a) definition) includes the way in which the installation is designed, built, maintained and operated - therefore, the choice not to install, to permanently close or not to use a bypass of upstream a bag filter is relevant. Same with pre-heating the bag filter before start-up or the flue-gas at start-up to avoid clogging.</p>
17	5	1			472	The expression '...compliant with' introduced in the text of the 'Note' associated to BAT 1 might trigger at national level legal uncertainty and controversy on the area of responsibility of an 'IED Competent Authority' for assessing the effective implementation of such a BAT.	Modify the text as follows: Regulation (EC) No 1221/2009 establishes the European Union eco-management and audit scheme (EMAS), which is an example of an EMS consistent with this BAT.	The use of EMAS (or of other certified management systems/schemes) may not necessarily indicate evidence of fulfilling BAT 1 in all its features. Conclusions in this respect are considered an implementation issue.
18	Table 7.2: Split views				544	There might be a mistake in the reference of split views to BAT 5 - there are split views expressed on footnotes. However, BAT 5 does not have footnotes.	Amend the BAT numbers referred to in Table 7.2 to match the numbering in the BAT conclusions as updated in the course of the final editing of the document.	Editorial
19	5	1	6		495	In Table 5.10, the reference to daily averages in all cases is not consistent with the averaging periods of BAT-AELs for emissions to water as described in the General considerations.	Remove "daily average" from the last column's heading in Table 5.10, and include also in Table 5.10 the footnote appearing as footnote (1) in Table 5.9.	In the case of bottom ash treatment, the BAT-AELs for Pb emissions may be associated with a batch discharge.
20	7				514	CEN work is missing in Chapter 7	Add a concluding remark in chapter 7, recognising the ongoing CEN work to review and update measurement standards that are relevant for the implementation of the WI BAT conclusions.	The relative measurement uncertainty (i.e. the uncertainty expressed as a percentage of the measured value) is likely to increase with decreasing emission levels.

ANNEX B: COMMENTS ON THE DRAFT BEST AVAILABLE TECHNIQUES (BAT) REFERENCE DOCUMENT FOR WASTE INCINERATION THAT ARE REPRESENTING THE VIEW OF CERTAIN MEMBERS OF THE FORUM

Comment No	Comments from	Chapter No/ Section No					Page	Comment description	Proposal for modification	Rationale
1	FEAD	5	1	2			475	Pending ongoing legal evaluation	The issue of measurement uncertainty needs to be addressed in Chapter 5. Without such assessment, we believe that the publication of the Final Draft is too early as the work of the TWG is not yet finalised. While the BREF guidance document states that "following the finalisation of the work within the TWG, the updated final draft of a BREF will be sent to the Forum established under Article 13 of Directive 2010/75/EU [...]", it appears that the present Final Draft was issued without addressing a topic which the EIPPCB committed to address within the TWG. In any case, this topic is intrinsically linked to the work of the TWG given that TWG members have the technical expertise to bring forward the factual and technical elements that best describe the measurement uncertainty issue. Discussions held during the Final Meeting of the TWG in Seville on 23-27 April 2018 ended with the triggering of a legal evaluation aiming to assess the feasibility to add in Chapter 5 (the BAT conclusions) a reference to measurement uncertainty, factual and concise, to be linked to the BAT on monitoring of emissions to air from waste incineration plants.	
2	FEAD	8	2					Please make each table complete and standard for all cases	It seems necessary that all parameters are mentioned in each table / case. For instance, Table 8.1, Qb and Qi are not mentioned. Nor is it mentioned in Table 8.2. However, Qi is mentioned in the text. It would make more sense to add it as well in the table.	
3	FEAD	5					495	In Table 5.7, BAT-AEL ranges are too stringent	Return to BAT-AEL ranges in BREF WI 2006 (Table 5.4, page 446)	Although WI plants use the same processes and techniques as LCP and WT plants, Table 5.7 is more stringent due to application of filters on the provided data, which has not been done for the data for LCP and WT plants.
4	FEAD	5					495	In Table 5.8, BAT-AEL ranges are too stringent	Return to BAT-AEL ranges in 2006 WI BREF (Table 5.4, page 446).	Although WI plants use the same processes and techniques as LCP and WT plants, Table 5.7 is more stringent due to application of filters on the provided data, which has not been done for the data for LCP and WT plants.
5	FEAD	5	1				474	BAT 3, Waste water from bottom ash treatment plants	Add footnote (1) not applicable in case of waste water disposal to the municipal waste water treatment plant itself, which regulation shall prevail.	Technologies as Dry sorbent injection or Semi-wet do not produce waste water in significant amounts. In case of emergency situation, the produced waste water is usually transferred to a retention tank for additional treatment and disposal to the waste water treatment plant which sets the requirements for the waste water quality.
6	FEAD	5	1				474	BAT 4, TVOC	Add the possibility to monitor TOC instead of TVOC.	TOC involves all the organic components, not just the volatiles, and provides sufficient results. Especially for municipal waste incineration.
7	FEAD	5	1				476	BAT 6	Add footnote (3) not applicable in case of waste water disposal to the municipal waste water treatment plant which has its own requirements for monitoring of key process parameters.	Such requirements shall be applied just in case of waste water disposal directly into the river.
8	FEAD	5	1				479	BAT 11, municipal solid waste and other non-hazardous waste	Please clarify that calorific value could be analysed as the result of combustion process, rather than directly from the delivered MSW.	Sampling of municipal waste for the analysis of calorific value is not the correct process due to the unstable chemical composition which varies all the time. A reasonable method is the end-to-start calculation of waste calorific value as the result of the combustion process.

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9	FEAD	5	1	5	2	1	487	Table 5.1 - Powders: the "<" symbol has been inserted before the lower range	Remove the "<" symbol.	To avoid confusion and different interpretations, the limits should be defined univocally with finite values.
10	FEAD	5	1	5	2	1	487	Table 5.1 - Cd+Tl: the lower end of the range was reduced to 0.005 mg/Nmc	Reinstate at least the limit of 0.01 mg/Nm3 as indicated in the previous draft of July 2017.	The 0.005 mg/Nmc is very close to the instrumental limits of the measure.
11	FEAD	5	1	5	2	1	487	Table 5.1 - Sum of metals: the lower end of the range was reduced to 0.01 mg/Nmc	Reinstate at least the limit of 0.05 mg/Nm3 as indicated in the previous draft of July 2017.	The limit of 0.01 mg/Nmc is exceeded in several cases.
12	FEAD	5	1	5	2	2	489	Table 5.3 - HCl: the "<" symbol has been inserted before the lower end of the range	Remove the "<" symbol.	To avoid confusion and different interpretations, the limits should be defined univocally with finite values.
13	FEAD	5	1	5	2	3	490	Table 5.4 - NH3: the lower end of the range was reduced to 2 mg/Nmc	Reinstate at least the limit of 3 mg/Nm3 as indicated in the previous draft of July 2017.	
14	FEAD	5	1	5	2	4	491	Table 5.5 - TVOC: the "<" symbol has been inserted before the lower end of the range	Remove the "<" symbol.	To avoid confusion and different interpretations, the limits should be defined univocally with finite values.
15	FEAD	5	1	5	2	5	493	Table 5.6 - Hg: the "<" symbol has been inserted before the lower end of the range	Remove the "<" symbol.	To avoid confusion and different interpretations, the limits should be defined univocally with finite values.
16	FEAD	5	1	5	2	5	493	Table 5.6 - Hg: for existing plants, the upper end of the range was reduced to 20 µg/Nmc	Reinstate at least the limit of 25 µg/Nmc as indicated in the previous draft of July 2017.	Compared to the current limit of 50, the value of 25 is already very challenging and ambitious.
17	Denmark	5					466	Definition on "continuous measurement" must be amended	New text: Measurement using an automated and continuous measurement system permanently installed on site.	Without the amendment it could also be an automatic spot sampling system.
18	Denmark	5	1	2			475	BAT 4 monitoring for benzo[a]pyrene, once every year associated with BAT 30. But benzo(a)pyrene is not mentioned in BAT 30.	Either delete monitoring for benzo(a)pyrene from BAT 4 or supply BAT 30 with text about when the monitoring for benzo(a)pyrene is relevant. DK has experience with measurements for PAHs when waste with a very high content of PAHs is incinerated. And the emission level is low.	It is unclear for us why the incineration plants in general have to monitor for benzo(a)pyrene. It could be relevant if the plants incinerate waste with a high content of PAHs.
19	Ireland	2	3	1	1		68	Stop valve equipment (e.g. door seals) should be used (activated) as soon as the waste feed is stopped (due to planned or emergency shutdown of the plant) to guarantee a good seal and prevent extra air insertion that may compromise the efficiency of the remaining combustion process, leading to unnecessarily early OTNOC	The activation of the stop valve equipment shall be activated immediately after the last waste feed for planned and emergency plant shutdown.	Not having a proper seal leads to higher O2 concentrations in the chamber and afterwards which would have an impact on how soon the shutdown criteria is triggered (OTNOC). This would lead to inefficient combustion and higher results (higher pollution to the atmosphere) which would be discarded (not enforceable) as the plant is not operating as normal. By applying a proper seal by means of door seals the time the plant operates in OTNOC is reduced and so are the emissions.
20	Ireland	3	2	1			173	HF has daily and hourly ELVs according to Annex VI Part 3 of the IED. Can it be measured discontinuously as this BREF document indicates?	HF is measured continuously (as any other parameter in Annex VI Part 3).	Annex VI Part 3 of the IED. *Addressed in BAT 4 - Footnote 4. A definition of "sufficiently stable" would be necessary.
21	United Kingdom	5					465	We have realised that the scope of the BREF is not clear with respect to non-hazardous Chapter IV co-incinerators >3 tonnes per hour which burn only waste, where that waste includes some biomass listed under Article 3(31)(b) of the IED. We understand that the conclusion of the WI BREF kick-off meeting was to include such plants under the scope of the WI BREF, unless they were covered by the LCP BREF. But the way the WI BREF scope is currently written, such plants will not be covered by either the LCP or the WI BREF if their rated thermal input is less than 50 MW.	We propose that the relevant part of the scope should be changed as follows: • only wastes are combusted, except if those wastes are at least partially comprised of biomass as defined in Article 3(31)(b) of Directive 2010/75/EU and are combusted in a plant with a total rated thermal input of 50 MW or more;	To avoid confusion, the wording of the scope should match the equivalent wording used in the LCP BREF, and it also needs to make clear that relevant plants will still be included under the scope of the WI BREF if their rated thermal input is below 50 MW. See accompanying document "190201 UK proposed changes to WI BREF scope wording" for a more detailed explanation of the UK's proposal.

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		2	6	3	4					
22	ESPP					123	Ammonia stripping should be, where possible, completed by recovery and recycling of the ammonia nitrogen, either to industry or to fertiliser production.	Add: "Ammonia stripping can be completed by recovery of the nitrogen as ammonia salts (e.g. ammonium sulphate), for recycling of the nitrogen to industrial applications or to fertilisers".	Reference: "Recent Development in Ammonia Stripping Process for Industrial Wastewater Treatment", L. Kinid et al., Int. J. Chemical Engineering, Volume 2018, Article ID 3181087 https://doi.org/10.1155/2018/3181087	
23	ESPP	3	2	1		144	In the case of sewage sludge incineration, N ₂ O emissions are a significant factor in the Life Cycle Analysis, and abatement should be required.	Add (after "Sewage sludge incineration can have higher N ₂ O emissions depending Sludge"): "N ₂ O emissions, if abatement is not installed, contribute 70-90 % of the direct greenhouse gas impacts of mono-incineration (status-quo in Germany: around 150-200 mg N ₂ O/Nm ³ or 1 g N ₂ O/kg DM) can be avoided by installation of N ₂ O abatement technologies in the incinerators (example Zurich: around 10 mg N ₂ O/Nm ³ or 50 mg N ₂ O/kg DM)."	Reference: F. Kraus Life Cycle Analysis presentation PHORWÄRTS Dissemination Event "Comparative Life-Cycle Assessment of phosphate recovery from wastewater path and phosphate rock based fertilizer production" 29 October 2018 www.kompetenz-wasser.de/en/event/phorwaerts-informationsveranstaltung-und-newfertsabschlussworkshop summary in www.phosphorusplatform.eu/eNews28	
24	ESPP	4	7	1		449	Separate handling and treatment of bottom ash may not be appropriate in the case of chemical processing for phosphorus recovery from sewage sludge mono-incineration ash	Add after "Bottom ash is handled and treated separately ... waste": "In the case of chemical processing for phosphorus recovery from sewage sludge mono-incineration ashes, however, bottom and fly ash may both contain phosphorus and can be mixed and handled together, provided that the phosphorus-recovery process ensures removal of heavy metals and contaminants, and that physical characteristics are compatible with handling (dust)".	Reference: http://www.easymining.se/de/page/5/	
25	ESPP	4	7			448	Add a note that in Germany phosphorus recovery is required from sewage sludge incineration ash (under certain conditions)	Add page 448: "In some countries (Germany, Switzerland), phosphorus recovery is obligatory (under certain conditions, implementation deadlines) for ash from sewage sludge incineration. Both bottom ash and fly ash from sewage sludge (mono) incineration can be treated for phosphorus recovery."		
26	ESPP	4	7			448	Add to the six "principles" bullet points that the potential recovery of resources should be considered	Add a bullet point under the "principles" paragraph (between "Are there secondary residues ..." and "Is there a final product ..."): --- "Is resource recovery obligatory, feasible, in particular as concerns substances on the EU Critical Raw Materials List (e.g. phosphorus)"		
27	ESPP	5	1	7		496	Under "BAT 35" (separate handling of bottom and fly ash", specify that this may not be appropriate in the case of chemical processing for phosphorus recovery from sewage sludge incineration ash	Add within BAT 35 the clarification: "In the case of chemical processing for phosphorus recovery of sewage sludge mono-incineration ashes, however, bottom and fly ash may be mixed and treated together, provided that the phosphorus-recovery process ensures safe removal of heavy metals and contaminants".		
28	ESPP	5	1	7		496	Under "BAT 36" add phosphorus recovery for sewage sludge incineration	Under BAT 36, add: "g. TECHNIQUE: Recovery of phosphorus. DESCRIPTION: Recovery of phosphorus for recycling. APPLICABILITY: Mono-incineration of sewage sludge and/or other phosphorus-rich waste streams".		
29	Euroheat&Power	5	1	2		474-477	The measurement uncertainty, which is a crucial factor for the follow-up of the BAT-AELs has been found by the DG Environment to be a factor outside the jurisdiction of the European Commission, but belonging to the implementation of the individual Member States.	In BAT 3-7, delete the column for Minimum monitoring frequency.	The monitoring frequency is clearly an implementation issue that is to be set by the MS, just like the treatment of the measurement uncertainty. In fact, the monitoring frequency is closely linked to the measurement uncertainty, since the uncertainty is comprised by a number of components. One of these components is the monitoring frequency, through which the sampling error is affected. For this reason, the prescription of monitoring frequencies violates the IED in the same manner as any other advice on how to take measurement uncertainty into account in permit writing would do.	

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30	CEWEP-ESWET	2					166	Missing section on monitoring	Add a specific section on monitoring techniques applied in the incinerator sector.	Due to the specificities of Incineration in respect of monitoring (Number of pollutants much higher than for any other sectors // Concentration levels much lower than for any other sectors // Continuously monitored substances requested to comply with ELVs even in OTNOC ...), it is crucial to add a section describing the monitoring and calibration techniques in incinerators (real life). This is not covered in the ROM, which should address the techniques horizontally.
31	CEWEP-ESWET	5	1	2			507	Add a sentence in footnote (1) of BAT 4	"Generic EN standards for continuous measurements are EN 15267-1, EN 15267-2, EN 15267-3, and EN 14181. EN standards for periodic measurements are given in the table or in the footnotes. N7".	At the end of the Final Meeting, the Commission stated that it would "further reflect if and in which form [the issue of measurement uncertainty] could be addressed in the BAT conclusions". In its response to the industry letter on split view assessment by the EIPPCB and measurement uncertainty on 18/12/2018, the Commission confirmed that a "separate process was initiated at the final TWG meeting, regarding the possibility to add in the BAT conclusions a different text [from the one introduced in Chapter 7 of the BREF], factual and concise, to be linked to the BAT on monitoring of emissions to air from waste incineration plants". The proposed sentence is factual and concise and does not exceed the Commission's delegated powers in that it does not preclude local authorities from establishing monitoring requirements adapted to the local conditions. As we already said several times, the BAT conclusions will be the only part of the BREF translated into all the European languages, and therefore the only part that their users will look into for setting new ELVs based on BAT-AELs. It is then crucial that a reference to the measurement uncertainty issue, recognised in the Final Meeting by the vast majority of the TWG members, is included there. Since BAT conclusions (see BAT 5) require compliance with the requirements of the standards, it is necessary to warn the BAT conclusions users, and, in particular, the regulators, that the uncertainty issue should be investigated before setting BAT-AEL-based ELVs and that, in most cases, the requirements of the standards must be adapted.
32	CEWEP-ESWET	7					544	We do not agree with that statement, please clarify that there was no consensus on the basis underpinning the elaboration of the BAT conclusions.	Please replace with: "No consensus was reached on the content of the BAT conclusions, in particular regarding the contextual requirements such as the uncertainty issue, the BAT-AELs and other BAT-AEPLs application conditions, the manner the operation data were used to derive BAT-AELs and other BAT-AEPLs, the feasibility to use BAT-AEL values as ELVs and BAT-AEPLs to set minimum efficiency requirements."	No consensus was reached on the most important parts of the BAT conclusions, the contextual requirements, despite the fact that setting new Emission Limit Values (ELVs) with the necessary references to operating conditions for the monitoring of emissions and associated uncertainties is crucial. In particular, regarding the issue of measurement uncertainty, four TWG members objected, through a split view, to certain BAT-AELs for emissions to air as they were not taking the issue into account. These members, together with other participants, expressed strong reservations to the proposed BAT-AELs during the Final Meeting of the TWG. Moreover, the EIPPCB clearly stated during the Final Meeting that the Commission "will further reflect if and in which form this issue could be addressed in the BAT conclusions", which is again a sign that a consensus was yet to be sought on the issue. Regarding the other important contextual requirement, which is a reference to operating conditions for the monitoring of emissions, this was excluded from discussion by the EIPPCB despite a number of requests in advance from TWG members. Finally, TWG members did not have the opportunity to table, amend or withdraw their split views at the end of the Final Meeting of the TWG, as is customary. This prevented many participants from expressing their dissent with the proposals. The "high degree of consensus" is therefore a distorted representation of the reality.

ANNEX B: COMMENTS ON THE DRAFT BEST AVAILABLE TECHNIQUES (BAT) REFERENCE DOCUMENT FOR WASTE INCINERATION THAT ARE REPRESENTING THE VIEW OF CERTAIN MEMBERS OF THE FORUM

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33	CEWEP-ESWET	7				544	This section of the BREF is meant to express the topics on which there was no agreement, and it is not acceptable that topics discussed for years are not mentioned for merely formal reasons.	Add split views on NOC/EOT/OTNOC issue, on the derivation of BAT-AE(P)Ls and on measurement uncertainty, as expressed by the request of CEWEP and ESWET.	<p>The EIPPCB rejected almost all of the split views on NOC/EOT/OTNOC, the derivation of BAT-AE(P)Ls and measurement uncertainty, for merely formal reasons. In doing so, the EIPPCB interpreted rules on the tabling of split views in a very restrictive way, contrary to the spirit of consensus that should lead the work of the TWG.</p> <p>The two main conditions for tabling valid split views, set out in Section 4.6.2.3.2. of Commission Implementing Decision 2012/119/EU, were fully respected by all tabled split views. Also, it follows from these conditions that it is not a requirement to formally table a split view during the final TWG meeting, in particular when it has not been possible to address the points during the Final Meeting. On NOC/EOT/OTNOC, the EIPPCB did not accept to put the issue on the agenda of the Final Meeting as it considered it to be an implementation issue. This cannot be considered a valid argument as, yet, it allowed a discussion on measurement uncertainty, which it also considers an implementation issue, during the Final Meeting. Comment 6 explains how crucial the issue is for the waste incineration sector.</p> <p>As regards measurement uncertainty, the EIPPCB only accepted the split view requesting to increase certain BAT-AELs for emissions to air in order to take the issue into account. Comment 3 explains how crucial the issue is for the waste incineration sector.</p> <p>It must also be reminded that consensus needs to be reached on the whole work of the TWG and not only on the points addressed as part of the Final Meeting, as can be inferred from Commission Implementing Decision 2012/119/EU: "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".</p> <p>The EIPPCB was aware that these topics were crucial for a large number of TWG members, as reflected, for example, in an a requets for discussion on the above-mentioned issues during the Final Meeting.</p> <p>Therefore, as 1) both conditions for tabling split views were respected for all split views tabled regarding NOC/EOT/OTNOC and measurement uncertainty and 2) no consensus was reached on these issues (see comment 4), all dismissed split views should be included in Chapter 7.</p>	

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34	CEWEP-ESWET					507	In the specific case of incineration it is absolutely crucial to write in the BAT conclusions that BAT-AELs are only applicable in NOC. At this stage, we do not request that the list of OTNOC is given since the TWG could not agree on it, but we just need that BAT conclusions say that BAT-AELs refer to NOC.	Add in the BAT conclusions chapter, or at least in Chapter 7, that "In accordance with IED Chapters I and II, a BAT-AEL means the ranges of emission levels obtained under normal operating conditions using a (combination of) BAT".	<p>The EIPPCB assessment in BP 23/2/2018, p. 144 states very clearly that BAT-AELs refer to NOC: "The definition of BAT-AEL is part of the IED, where a clear reference to NOC is made." The next EIPPCB sentence argues that it is not necessary to repeat what the IED says: "It is an established practice not to copy IED provisions in BAT conclusions."</p> <p>However, the incineration sector is the only industrial sector for which the IED, in its "special provisions" outlined in Annex VI, requires compliance of the continuously measured emissions with the current ELVs "within the Effective Operating Time excluding the start-up and shut-down periods if no waste is being incinerated". The Effective Operating Time (EOT) is not defined in the IED but, from the sentence where the requirement is made, it can be understood that compliance with the continuous IED Annex VI ELVs is required as soon as and as long as waste is burning in the furnace (see IED Annex VI, Part 8, §1.2).</p> <p>On the other hand, the IED Chapter II requires, in Article 15.3, that "The competent authority shall set emission limit values that ensure that, under normal operating conditions, emissions do not exceed the emission levels associated with the best available techniques as laid down in the decisions on BAT conclusions".</p> <p>Since it is a very special case, this fact should be clarified to the stakeholders in the text of BAT conclusions; otherwise they will automatically refer to the existing implementation and compliance conditions (i.e. ELVs in EOT as in Annex VI) when beginning to apply the new requirements of the BAT conclusions.</p> <p>Moreover, clear references to NOC are made in three other BAT conclusions (Pulp, paper and board, page 7, LVOC, page 5, and Production of Chlor-alkali, page 8), In the Chlor-alkali BAT conclusion, referring to a performance level (BAT-AEPL), it is written (1) Given that this performance level does not relate to normal operating conditions, it is not an emission level associated with the Best Available Techniques in the sense of Article 3(13) of the Industrial Emissions Directive (2010/75/EU). This clearly means that any BAT-AEL must relate to NOC.</p>	
35	CEWEP-ESWET					544	We do not accept that the split view 6 is formulated in this way. Each split view was explained in 3 pages, and the conclusion was not a mere request to increase the BAT-AELs.	<p>Please change the text on the first row, second column (the one starting with "Change the following BAT-AELS ..") into: "State in clear in BAT conclusions chapter that the feasibility to comply with the requirements of relevant standards must be checked by the permitting authorities when setting ELVs based on BAT-AEL values.</p> <p>If this clarification is not made in the BAT conclusions, then the complete BAT-AEL ranges of these parameters should be changed to reflect the recommendations made in the INERIS study to guarantee respect of uncertainty requirements, as in the Alternative proposed level column" (see rationale).</p>	All the documents prepared and sent to the EIPPCB with the split views were either not accepted for formal reasons or reflected in the wrong way in the split view table. Please change the table to reflect our dissenting view on the BAT-AELs settings. This is not reflected by what is written now.	

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36	EEB	5	1	2		509	The addition of the word 'and' alters the scope of the applicability. The previous BATC wording presents the two bullet points as two different cases. Therefore, the BATC would have applied to plants incinerating hazardous waste with high POP content, but would also apply to plants incinerating hazardous waste that does not meet the UNEP process description specifications (independently of high or low POP content). The new BATC wording seems to demand both conditions to be fulfilled - therefore the BATC would apply only to plants incinerating hazardous waste with high POP content that - at the same time - do not meet the UNEP specifications. If this is the case, plants incinerating high-POP-content waste but meet the UNEP process description specifications are exempted.	Delete the word 'and' or replace with the word 'or'.	The POP content in the output streams is linked to the POP content in the input and the process specifications (that should lead to a high destruction efficiency). The rationale behind BAT 8 is that both issues are addressed - the applicability wording should be amended to clearly reflect this.
37	EEB	7				544	Following up the Bureau's assessment of EEB comment no 12 on the pre-final draft of the BREF, we would like to resubmit this comment that we think should be further considered. To be repeated that we fully support the EIPPCB approach of dealing with the issue of measurement uncertainty, both in terms of wording, as well as in including the text in Chapter 7 ('Concluding remarks and recommendations for future work'). However, this amendment is proposed so that the text reflects more accurately the exchanges held during the review.	We propose to replace the phrase: '(...) the TWG highlighted (...)' with the phrase: '(...) some members of the TWG (some industry representatives and a few Member States representatives (DE, FR, NL and the UK)) highlighted (...)'. We would like to add a point under 'recommendations for future work' regarding OTNOC.	It is important to clarify that this issue was of concern to only 'some TWG members', not the whole TWG or the majority of the TWG. The statement is misleading as it stands. As reminded in our argumentation accompanying EEB comment no 12, the majority of the TWG members engaged in these discussions for a very long time just because of constant industry pressure, putting the item on the agenda again and again in any possible forum = TWG webinars, interim and FM, Forum, IEEG etc.
38	EEB					546	Following up the Bureau's assessment of the EEB comment no 14 on the pre-final draft of the BREF, we would like to resubmit this comment that we think should be further considered: We would like to add a point under 'recommendations for future work' regarding OTNOC.	Related to the definition of OTNOC: to define OTNOC or to compile a non-exhaustive list of operating conditions specific for the waste incineration sector that are considered OTNOC and that can have a significant influence on the environmental performance of waste incineration plants.	The absence of a clear OTNOC definition is hindering the sound implementation of BAT 5 and BAT 18. The need to further work on this issue was recognised during the review but there was no concrete outcome because of a lack of consensus. It should not be forgotten in the implementation phase and next BREF review. In response to the EIPPCB assessment of EEB comment no 14 on the pre-final draft: what is the harm with adding an additional item in the recommendations for future work? Especially an item that was debated a lot during the review (including in the dedicated OTNOC subgroup following the interim meeting of December 2017) without leading to a position that could get the TWG consensus.
39	Germany	5	1	2		474-475	In BAT 4, in the table below, the minimum monitoring frequency for metals and metalloids except mercury, PBDD/F, PCDD/F and dioxin-like PCBs should be modified.	In BAT 4, in the table below, the minimum monitoring frequency for metals and metalloids (except mercury), PBDD/F, PCDD/F and dioxin-like PCBs should be changed from "once every six months" into "two measurements per year".	See attached document "Rationale".

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40	Norway	5	1	2		477	<p>The requirement in BAT 8 to monitor POPs is limited to hazardous waste which reduces the requirement's usefulness. Our rationale for this is as follows: In general, the concentration limit for whether a particular waste is covered by the POPs regulation is lower than the concentration limit for whether it is classified as hazardous waste. Because of this, limiting the POPs monitoring requirement to hazardous waste leads to some waste streams being covered by the POPs regulation, requiring destruction of the POP in the waste, but not being covered by the monitoring requirement. We have provided this comment previously, but repeat it here since we see no reason why some POP-containing waste streams should be excluded.</p>	<p>In the first sentence of BAT 8, "For the incineration of hazardous waste containing POPs...", delete the word "hazardous". Also, in the first bullet point under "Applicability", "incinerate hazardous waste with POP levels...", delete the word "hazardous".</p>	