

Comment No.	Comment from	Chapter No. / section No.			Chapter title	Page # (PDF version of final draft)	Comment description	Proposal for modification	Rationale
1	Germany					1	Our impression is that the WBP-industry, new in the field of IED, has learned a lot about the relevance of measurements, sampling methods, interpretation or comparability of data (reference conditions). This may also result in better data in the future. This is very positive and is appreciated very much. We also think, that within the self-imposed constraint of presenting only 1 draft, the EIPPCB has done a good job. However, as expressed already in our comments on draft 1 we have pointed to the weak points of the draft at that time and suggested to use the possibility to elaborate a second draft, using the time for resolving remaining controversial issues. 1 or 2 day expert meetings, working on the consistency and comparability of data and their interpretation could have helped to find solutions for almost all issues. This was refused by the EIPPCB because of time constraints.		No convincing argument was provided by EIPPCB why the TWG should not take the time to solve relevant unsolved issues of the WBP BREF. Instead, the 1 draft-route was chosen although the BREF Guidance proposes for new BREFs as a standard the 2 draft-route. We think that the remaining weak points of the WBP BREF (e.g. inadequate reference conditions, weak consideration of the influence of different wood raw materials on the achievable emissions, assessment and presentation of data in some cases, some inconsistencies, etc.) could have been almost completely solved and a very good document could have been elaborated. The one we have now in front of us is a big step forward. However, we think that we have not used all the opportunities provided by the information exchange on BAT. Our clear preference is "quality before speed".
2	Belgium					1	Belgium appreciates the hard work that has been done for the BREF WBP. We estimate that for achieving optimal quality of a BREF, it is crucial to follow the guidelines of the BREF Guidance Document. We therefore appreciate that, in general, the EIPPCB guards this document. However, we regret that on the following important issues, the EIPPCB did not follow the approach as strictly as proposed in the BREF Guidance Document (which is nevertheless indispensable in our opinion): (1) The timing outlined in the BREF Guidance Document (concerning provided information) should be respected. The data set to be discussed at the final TWG meeting of the WBP was only made available to the TWG around 5 days prior to the meeting. We feel that this jeopardizes the quality of discussions carried on at the meeting, as it is not convenient to examine such an important document in such a short notice. Moreover, we are under the impression that more attention should be given to the quality of the data set (e.g. some misinterpretations or errors in the data), especially with respect to reference conditions. (2) For optimal data collection and determination of BAT-AEL, we feel that reference conditions should be agreed on at the kick-off meeting. However, some reference conditions of the BREF WBP were adapted at the final meeting. As a consequence, reference conditions were changed AFTER the corresponding BAT-AEL were determined. Of course this has a huge impact and made a good assessment and comparison of data and BAT-AEL during the final meeting very difficult, if not impossible. (3) The possibility of a second draft was not discussed with the TWG, although two formal drafts are generally considered necessary for a new BREF (such as the BREF WBP) and several TWG-members considered this as necessary. Overall, we prefer good quality of the BREF and BAT-conclusions over duration of BREF-process.		(1) The BREF Guidance Document states that (point 4.6.2.3.1.): "The main issues to be discussed at the final TWG meeting and proposals from the EIPPCB will be outlined in a detailed background paper distributed to the TWG at least four weeks in advance of the meeting." Also the corresponding data set should be made available to the TWG at least four weeks in advance. (2) According to the BREF Guidance Document (point 5.5.), "The TWG should discuss and develop sector-specific template(s) for collecting and submitting information to the EIPPCB following the general principles given in Section 5.2. The TWG should in particular determine the type of data, averages, ranges, distributions, units, reference conditions to be used/submitted, taking into account the data available and the units and reference conditions used by the producers. Agreeing on these issues will therefore be one of the objectives of the kick-off meeting and there should be enough time foreseen for this." In conclusion, we feel that reference conditions should be agreed on prior to the final meeting, preferably during the kick-off meeting. (3) The EIPCCB did not provide convincing arguments why only 1 draft of the new BREF for the WBP was elaborated. The argument of the EIPPCB that a second draft was not necessary due to the limited number of comments received on Draft 1 and their content, is not appropriate in our opinion, as we are under the impression that the decision on the elaboration of only 1 draft had already been made at the time the Draft 1 was sent to the TWG members for comments. Furthermore, the typical workflow of a new BREF in attachment 2 of the BREF Guidance Document, indicates the elaboration of a second draft for each new BREF. Also in the text, the BREF Guidance Document states that (point 1.2.4.): "Also, it is expected that, in principle, one formal draft will be published before a final plenary TWG meeting (see Section 4.6.2.3), except in the case of a new BREF. , where a second formal draft is necessary."
3	Bulgaria	5				1	The BAT conclusions chapter do not contain specific consumption levels for use of water, energy, raw materials, auxiliary materials and fuels, as for the waste quantities generated by the production process.	According to the definition of BAT conclusion, such consumption levels are mandatory and should be included in the conclusions.	The document does not cover all the requirements of the IED. The lack of this information provides the basis for the wide application of the IED Art. 14.6.
4	Denmark	3	7	1		126	Reference conditions for expressing air emissions data	Add a footnote saying: If the oxygen content of the measured flue gas is higher than 18,5% the measured oxygen content shall be stated, but the value 18,5% shall be used in the formula for oxygen correction instead of the measured oxygen.	The question of reference conditions has been discussed and there are split views regarding this. Danish EPA contacted specialists, who gave a proposal. The proposal will mean that it is possible to dilute the pollution if the flue gas content is higher than 18,5% but for the time being we regard that as an inconvenience we will have to live with.
5	UK	5				212	Reference conditions set as "DRY basis 18% oxygen by volume" for emissions from directly heated PB or directly heated OSB dryers alone or combined with the press. Consideration of the data-sets supplied during consultation of the WBP questionnaire produced results based on differing abatement techniques - in the UK the recognised abatement is a WESP and setting reference conditions as dry with a oxygen correction fails to provide a monitoring reference condition that is consistent with our experience of best practice.	Set reference conditions "As emitted"	this will enable wet emissions to be appropriately monitored
6	Ireland, EPF	5			Scope	212	Reference conditions for combined treatment of waste gas from dryer, press or other equipment.	Change the reference conditions for combined treatment of waste gas from dryer, press or other equipment. If waste gases from different sources like dryer, press or other equipment are treated in one system then measuring conditions should be as emitted.	Split view n°08 in BATIS
7	UK	5				212	Reference conditions set as "DRY basis" for emissions the Presses. Consideration of the data-sets supplied during consultation of the WBP questionnaire produced results based on differing abatement techniques - in the UK the recognised abatement is a WESP and setting reference conditions as dry when considering a wet abatement system fails to provide a monitoring reference condition that is consistent with our experience of best practice.	Set reference conditions "As emitted"	this will enable wet emissions to be appropriately monitored
8	Ireland, EPF	5			Scope	212	Refer to "as emitted" as reference condition for presses and other wood processing sources.	In the table of page 212, refer to "as emitted" (no correction for oxygen, wet basis) as reference conditions for presses and other wood processing sources.	Split view n°10 in BATIS
9	Ireland	5			Scope	212	Change reference conditions for all types of dryers	Change reference conditions to as emitted for all types of dryers	Split view n°11 in BATIS
10	EPF	5			Scope	212	Set reference conditions for all types of dryers to "as emitted" and adapt BAT-AELs to the reference conditions.	Set the reference conditions for all types of dryers (directly and indirectly heated PB, OSB and fibre dryers) to "as emitted", that means wet basis, without correction for oxygen content (273 K, 101.3 kPa): concentrations expressed as mass of emitted substance per volume of waste gas under standard conditions (273.15 K, 101.3 kPa) with the unit mg/Nm ³ Additionally, this has as logical consequence that the BAT-AELs need to be revised to the reference conditions "as emitted".	Split view n°15 in BATIS
11	Austria	5				212	IED states, that "BAT conclusions should be the reference for setting permit conditions". The current averaging period for BAT-AELs in the WBP BREF for emission to water is a yearly average, which in the logic of the IED has to be taken as reference for setting permit conditions. This opens the door for request or demand to define ELVs on national level based on yearly averages. This would severely undermine the principles of the IED related to environmental protection, protection of human health, pollution prevention and control and best available techniques as well as information of the public. Furthermore, it will undermine the established practice in most EU Member States of setting ELV in permits on a short-term basis. Most Member States set ELVs as concentration and/or load values based on short-term averages such as qualified random samples, 2 hour composite samples or 24 hour composite samples. Austria has always claimed BAT-AELs expressed as daily averages to make monitoring and compliance control feasible. If appropriate, both, daily and yearly average values may be given. Submitted data are likely to comprise daily averages; yearly averages are uncommon in most Member States.	We would consider it much more useful to report the emission to water as 24 hour flow proportional sample for each measurement than the calculated weighted averages of all 24 hour flow proportional samples taken within one year (average of samples obtained during one year).	Usefulness and comparability of BAT-AELs to water. In line with current permitting practice in many Member States.
12	Denmark	5				213	TVOC, Total Volatile Organic Compounds, expressed as C in air	TVOC, Total Volatile Organic Compounds, expressed as C in air, including (or not including?) methane	The reader must be sure whether methane is included or not.
13	HWE	5	1	2		216	BAT n°2b addresses the issue of recycled wood used as raw material contaminated with hazardous substances and this is an excellent point. Indeed, waste contaminated with hazardous substances should be used very carefully in order to avoid products made with them to become a sink for pollutants. However 1) some pollutants are missing to our opinion, namely bromine, copper and PCBs 2) limit concentrations for these hazardous substances in the acceptable recycled wood as raw material are missing.	set concentration limits for As, Pb, Cd, Cr, Hg, Zn, chlorine, fluorine, PAH, Br, Cu, PCB in the recycled wood used as raw material	Concentration limits in the recycled wood used as raw material are necessary to avoid dispersing and diluting hazardous substances of the waste into the new products and their diffusion among the public. Waste wood showing contamination above the limits should be either decontaminated or diverted from the production process.
14	Denmark	5	2	1		224	Table 5.1 BAT-AEL for PB or OSB on Dust from indirect dryers and TVOC for all dryers	If upper level for TVOC from indirect dryers is to be discussed again, DK support German split view on new upper level of 225 mg/Nm ³	To fulfil the dust BAT AEL for indirect dryers a bag filter will be needed. To fulfil the TVOC BAT AEL, techniques to reduce TVOC will be needed. Of the techniques to reduce TVOC, none is applicable to use in combination with a bag filter according to chapter 4.2.1. The only data for TVOC after bag filter is from two plants. They have upper emissions on 2019 and 230 mg/Nm ³ , as seen in chapter 4.2.4.2.

15	Austria, the Netherlands	5	2	1	224	The guidance paper states under 2.3.8 (BAT Conclusions) that "it should be noted that evidence to support a technique as being BAT can come from one or more installations applying the technique somewhere in the world. In cases where the information on the technique comes from only one installation and/or only from installations located in third regions, a thorough assessment of the applicability within the sector will be carried out by the TWG". To our understanding majority decisions in the Final TWG Meeting should not lead to the exclusion of BAT techniques applied in two EU Member States and third countries. BAT techniques allowing to achieve the lower end of the BAT-AEL range are not applied by a majority of operators and Member States and will therefore never have a majority vote. We would like to emphasize the general need to refer to BAT techniques allowing the lower BAT AEL in the BAT conclusions. RTO to reduce TVOC and odour emissions from the dryer had been included in the Draft BREF and in the Background Paper both in the list of BAT techniques and in the explanatory footnote of table 5.1 but was deleted in the BAT Conclusions during the Final Meeting by majority decision. We do not see this in line with the Guidance Document.	To be consistent with the Guidance Document and considering the state of discussion at the final TWG meeting as well as solutions in other BREFs we propose to add RTO in footnote 2 in table 5.1. "Emissions below 30 mg/Nm3 can be achieved using UTWS or RTO."	Plant in the Netherlands operating RTO. Austrian plant operating RTO: emission limit value TVOC: 10 mg/Nm3 (17 % O2, dry basis, HHA), actual emissions < 2 mg/Nm3 (17 % O2, dry basis, HHA), permit from 4.3.1996. Plants in the USA operating RTO. Two plants within EU countries apply RTO since many years and plants in third countries also use it. According to the guidance document this technology is therefore supported as BAT to achieve the lower BAT AEL range. BREF CLM: activated carbon is referred to in footnote but it is not quoted as BAT technique for the abatement of Hg in cement production (table 5 BATC CLM). RTO is applied in the WBP sector and within several industries.
16	Portugal, Ireland, EPF	5	2	1	225	Increase the upper values set for Formaldehyde emissions from direct heated dryers in PB, OSB and MDF to 20 mg/Nm3.	In Table 5.1 for Formaldehyde emissions from direct heated dryers in PB, OSB and MDF change the upper limit value to 20 mg/Nm3.	(IE, EPF) See split views reported in BATIS. (PT) Once the results of the study shows that the determination of the concentration of a particular air pollutant (eg. Formaldehyde), using different analytical methods produces completely different results, it is important to establish AEL consistent for the various equipment, including dryers. Considering the information available in the data collection (and present during the BREF review), it seems that the formaldehyde concentrations available by the Member States were determined by using different methods, fact that makes it difficult to compare the results obtained. These difference shows that in some cases the level proposed is underestimated. In this case, in order to minimize this difficulty, we suggest that the upper limit value such be changed, and harmonized for all dryers.
17	UK	5	2	1	225	Table 5.1 Formaldehyde ranges from <5 - 10 to <5 - 20 depending on product.	Normalise all Formaldehyde to <5 - 20	The data-sets used to develop the BAT-AEL were produced by sites which use differing monitoring methodologies. Independent testing by Eurofins identified that the differing methodologies used produce differing results when used on the same emission at the same time, consequently the range of achieved emissions is incorrect as it is based on flawed data. The chosen methodology for formaldehyde measurement for the BREF is the modified US EPA M316 which was promoted by the UK, our experience of monitoring emissions using this standard has produced a data-set which supports the proposed modification.
18	Germany	5	2	1	225	The upper end of the dust BAT-AEL for directly heated PB and OSB dryers is too high (BAT 17). In our split view on this issue we already proposed to lower the upper limit for directly heated PB and OSB dryers to be 20 mg/m ³ (18% O ₂ , dry).	We propose to set the upper end of the BAT AEL for dust at 20 mg/m ³ for all types. If our proposal of comment # 2 above is accepted, we could keep the more ambitious level for indirect dryers that is achieved by use of bag filters.	Our proposal is supported by the collected data (chap.3). Furthermore, all German and Austrian plants achieve dust emissions below 20mg/m ³ . For more detailed information on this comment please see also the attached file: German split view on dust for directly heated dryers.
19	Germany	5	2	1	225	As already stated in our split view, we think it is not fair or correct to apply the TVOC BAT-AEL of BAT 17 Table. 5.1 <20 -200 mg/m ³ for dryers to indirectly heated dryers. In Germany, at that time operators were encouraged to build indirectly heated dryers because of their better environmental profile compared to direct dryers: they form less blue haze, generate less odour emissions and allow for operating a fabric filter (less humidity of waste gas because of absence of WESP) resulting in very low dust emissions. Indirectly heated dryers are thus technically different to directly heated dryers. Due to technical reasons they emit higher TVOC concentrations, but the emission loads per unit of evaporated water are in comparable magnitude. There is no significant environmental disadvantage in using an indirectly heated dryer without WESP and therefore they shouldn't be discriminated. To our knowledge there are five indirectly heated dryers in Europe: four in Germany and one in Austria. If we can agree that BAT AEL for TVOC is not applied to indirect dryers it doesn't mean that they do not use BAT. In contrast, they have to comply with specific limit values of the German TA Luft for these installations. In case that our point is not accepted by the forum, we have at least to remove the more stringent dust BAT AELs for indirect dryers because they are based on the fact that there is no WESP or bioscrubber in front of the currently operated fabric filters. To apply both techniques - WESP followed by a bag filter - at the same time for indirectly heated dryers makes technically no sense.	We propose to change Table 5.1 line "TVOC / PB / All types / <20 -200" into "TVOC / PB / directly heated dryer / <20 -200". If the forum agrees on this proposal we can keep the dust BAT AEL for indirect dryers. If not, we propose to remove the line for dust for PB and OSB for indirect dryers.	Indirectly heated dryers are technically different from directly heated dryers and should be considered as special drying system. Also the separate BAT-AEL for dust emissions indicates that. Although the TVOC emission loads of indirectly heated dryers are slightly higher they are in comparable magnitude. Additionally, indirectly heated dryers have further beneficial environmental effects like less dust emissions, less odour and no blue haze. A replacement of bag filters with WESP will lead to higher dust emissions. In our view, this is in conflict with the directive 2008/50/EC on ambient air quality and cleaner air for Europe which defines and establishes objectives also for dust emissions.
20	EPF	5	2	1	225	Differentiate between indirectly and directly heated PB dryers.	Differentiate between indirectly heated particleboard (PB) dryers and directly heated PB dryers in BAT 17. TVOC BAT-AEL for all existing indirectly heated PB dryers in Table 5.1 with the adapted BAT-AEL < 180 – 250 mg/m ³ wet basis, no O ₂ correction (as emitted) as a footnote.	Split view n°09 in BATIS
21	Ireland, EPF	5	2	1	225	Differentiate between indirect MDF dryers and other MDF dryers.	Differentiate between indirect heated MDF (Medium Density Fibreboards) dryers and other MDF dryers, in BAT 17. TVOC BAT-AEL for indirect heated dryers should be given separately (in a separate row) in Table 5.1 with the adapted BAT-AEL < 180 – 250 mg/m ³ wet basis, no O ₂ correction (as emitted).	Split View n°16 in BATIS
22	Germany	5	2	1	225	In table 5.1, Bat 17, footnote 1 is not clearly and unambiguously phrased: "This BAT-AEL does not apply when using pine as the predominant raw material." The term "predominantly" should be specified.	In our opinion, it would have been appropriate to specify the footnote 1 of Table 5.1 as follows: This BAT-AEL does not apply when using pine as the predominant raw material, i.e. at a share higher than 80%. We propose to assess the influence of the raw material on the TVOC emissions more carefully in the next review of the WBP BREF (point for the concluding remark chapter).	Using pine as raw material almost exclusively causes higher TVOC emissions. However, the EIPPCB missed to assess systematically the influence of the raw material on the TVOC emission values in the BREF. An imprecise or vague footnote may have the undesired effect that the BAT-AEL does not apply for many of the most TVOC polluting PB plants. To address the influence of raw material in a more adequate way, taking into account the special features of pine, it would be more appropriate to exclude only those plants from the applicability of the BAT AEL that use almost exclusively or high shares of pine, e.g. 80%. We think a distinct number better allows for a harmonisation of applied emission standards in Europe and is easier to implement.
23	Ireland	5	2	1	225	In table 5.1, Bat 17, footnote 1 is not clear: "This BAT-AEL does not apply when using pine as the predominant raw material." Pine may be the only raw material used for certain periods of time so it should be clear if 'predominantly' relates to the timber mix at the time of production or to the overall plant timber usage.	(1) This BAT-AEL does not apply when plants using predominantly pine in production as the raw material."	Split view n°07 in BATIS
24	EPF	5	2	1	225	Change BAT-AEL for TVOC emissions to air from Fibres dryers and for combined treated emissions from the dryer and the press.	In Table 5.1, increase the upper limit of the parameter TVOC for product Fibres from 120 mg/m ³ to 300 mg/m ³ as emitted or alternative include the same footnote as already existing for product PB: "(1) This BAT-AEL does not apply to plants using predominantly pine as the raw material."	TVOC emissions from direct MDF fibre driers are highly variable, because of the high natural variation in wood content (mainly depending on wood species, logs diameter, drying time after cutting). A one-year study in France has demonstrated that following the normal repartition, 95% of the measured values are in the range of 41 to 241 (average plus/minus 2 sigma).
25	Poland	5	2	1	225	Footnote 1 in Table 5.1 should be applicable also for TVOC emissions from OSB dryers. Such an approach would reflect the fact that pine is almost exclusively used in OSB production.	Limitation in applicability of TVOC BAT AELs, described in footnote one, should be assign to both PB and OSB dryers.	In Table 5.1 – BAT 17, there is a footnote 1 referring to TVOC BAT AELs from PB dryers. This footnote reflects opinion of TWG that TVOC AELs from dryers are strongly connected with wood type used in production process. Namely some wood species – especially pine is naturally rich with resin containing high concentration of VOCs. Within this group there are substances with high affinity to water like formaldehydes or ketones which can be abated by WESPs. Within VOCs' there is also group of substances like pinenes with are insoluble in water and therefore WESPs are not efficient in emission reduction of this substances. This issue is already reflected in chapter 2.2.2.1 of WBP BREF by statement saying "When the individual volatile organic compounds are determined the α- and β-pinene content represents more than 80 % of the total VOC content in softwood species, such as pine." Furthermore BREF in chapter 3.2.1.3 states clearly that "data from OSB dryers applying abatement techniques that would have some efficiency for volatile organic compounds are scarce. From the data it could be deduced that TVOC levels in general are higher from OSB dryer lines, owing to the effect of the use of 100 % fresh log wood. The raw mate
26	EPF	5	2	1	225	Change BAT-AEL for TVOC emissions to air from OSB dryers and for combined treated emissions from the dryer and the press.	In Table 5.1, increase the upper limit of the parameter TVOC for product OSB from 400 mg/m ³ to 600 mg/m ³ or alternative include the same footnote as already existing for product PB: "(1) This BAT-AEL does not apply to plants using predominantly pine as the raw material."	Split view n°07 in BATIS
27	Belgium				104, 226	BAT 19: BAT-AEL for emissions of TVOC to air from presses. BAT 19 for TVOC currently applies for OSB-presses as well, in spite of the fact that only one OSB plant delivered corresponding emission data. Belgium therefore considers the BAT-AEL for emissions of TVOC to air from the press of poor quality for OSB plants. See also the deleted split view of Belgium after the final meeting.	We propose to add following information in the text of the BREF, and as a footnote in table 5.3. on page 226 of the BREF: "Due to the lack of data concerning emissions of TVOC to air from OSB presses, no BAT-AEL value for TVOC from OSB presses could be determined"	Based on appendix 1 of the BREF Guidance Document on the data quality rating system, Belgium does not consider a BAT-AEL based on emission data of only one plant as reliable or representative. Such a level of data quality does not comply with any of the levels recommended in appendix 1, especially not level A (i.e. "an estimate based on a large amount of information fully representative of the situation and for which all background assumptions are known") or level B (i.e. "an estimate based on a significant amount of information representative of most situations and for which most of the background assumptions are known"), which are considered most appropriate for determining BAT.
28	EPF	5	2	1	226	No BAT can be derived for OSB presses due to lack of data.	Include a footnote in Table 5.3, with the text: "Due to the lack of data, no BAT-AEL could be derived for OSB presses."	Split view n°06 in BATIS

29	Czech Republic	5	4	1		232	<p>A UTWS dryer is a combination of a dryer and a combustion plant where organic compounds and dust from both the waste gas from the dryer and the flue-gases are incinerated. Dryer waste gas is circulated in a drying loop where the dryer waste gas is reheated in a heat exchanger and fed to the dryer and where excess dryer waste gas is injected into the combustion chamber. The combustion plant heats the heat exchanger and incinerates added dryer waste gas. The stack release is the emission from the combustion plant, which is controlled by an ESP or bag filter, etc.</p>	<p>Wording shall be „A UTWS dryer is a combination of a dryer and a combustion plant where organic compounds and dust from the waste gas from the dryer and eventually the press flue-gases are incinerated in the combustion unit. Drying gas is circulated in a drying loop where the dryer waste gas is reheated in a heat exchanger and fed to the drying drum and where excess dryer waste gas is injected into the combustion chamber. The combustion unit hot off-gas heats the heat exchanger and incinerates added dryer waste gas. The stack release is the emission from the combustion mixed with incinerated dryer off-gas, which is controlled by an ESP or bag filter, etc.</p>	<p>The formulation of the definition as proposed on page 232 of the final BREF might result in misunderstanding or might lead to confusion in determination of the flows within technology. We propose formal corrections to avert any doubtfulness.</p>
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