

Comment No.	Comments from (Forum Member)	Chapter No. Section No.			Chapter title	BAT	Page # (PDF version)	Comment description	Proposed amendment	Rationale
1	Sweden	5				0	The whole document	We have noted that no proposals for modifications will be accepted if the matter was not discussed in the TWG. For principal reasons, we anyway want to make this comment number 1.	All BAT conclusions with BAT-AELs should have averaging periods, reference conditions and, analytical methods unambiguously defined.	The Guidance document of 24 June 2011 states at page 24 that the units, the reference condition and the averaging period <b>"must be unambiguously defined"</b> for BAT conclusions with BAT-AELs. Any ambiguity will cause unnecessary administrative burdens for both MS and Industry. Moreover, ambiguities will make it problematic for the Commission to monitor the degree of implementation of BAT-conclusions by MS.
2	Germany				Preface	0	iii	We recommend to add again the chapter 2 of the document IEF 22-4-3 (Relevant legal obligations of the IPPC Directive and the definition of BAT).	Add chapter 2 of the document IEF 22-4-3 (7 April 2010) after chapter 1 of the Preface, taking into account the new provisions of the IED. New title: Relevant legal obligations of the Industrial Emissions Directive (Integrated Pollution Prevention and Control) and the definition of BAT	The BREFs are used by a large variety of groups of people who have different knowledge of the IED. In addition, the BREFs are used worldwide. This chapter of the former standard texts under the IPPCD was very helpful for the user. Therefore, we recommend to keep it also in the new standard texts. Of course, the text has to be amended taking into account the provisions of the IED.
3	Germany				Preface	0	iii	In chapter 3 of the Preface, the content of the chapter 5 of a BREF should be described in more detail.	Chapter 3 of the Preface: Add the description of chapter 5 of a BREF of the document IEF 22-4-3 (7 April 2010) (p. 5/6), taking into account the new provisions of the IED.	The BREFs are used by a large variety of groups of people who have different knowledge of the IED. In addition, the BREFs are used worldwide. This additional explanation of the former standard texts under the IPPCD was very helpful for the user. Therefore, we recommend to keep it also in the new standard texts. Of course, the text has to be amended taking into account the provisions of the IED.
4	CPIV, FEVE				Preface	0	iii	2nd § of section 2: It is not true that "Forum members have nominated technical experts for the purpose of drafting this BREF"	IPPC Bureau has approved the list of technical experts for the purpose of drafting this BREF.	At the time of the revision of the BREF, it was not a task of the Forum to nominate the experts.
5	Germany	1	4	4		0	17	Indirect emission savings through the use of triple glazing are not subject of this BREF	Delete the paragraph	Stick to the scope of the BREF.
6	Germany	1	8	4		0	31	As already stated in the previous comment, the indirect emission savings through insulation in this case are not of interest	Delete the paragraph	Stick to the scope of the BREF.
7	Germany	1	10	2		0	36	The last paragraph refers to the threat of moving the frits production outside the EU if environmental regulations as well as social and economic conditions are too strict.	Delete the paragraph	this information is not of relevance for a BREF
8	Germany	4	4	1	3	0	206	Footnote 4 states that data from spot measurements may be associated with favourable conditions. The data come from German installations where it is required to measure during unfavourable conditions, e.g. full power etc.	Delete footnote 4	Information which is given in footnote 4 is not part of the German report and not in line with German law
9	Germany	4	9			0	318	Important aspects, which are concerning the components of an EMS and which were part of the former standard texts, are missing.	Please add the full information on the components of an EMS of the former standard texts including the paragraph on standardised and non-standardised EMS (pages 10 - 15 of document 22-4-3, 7 April 2010). In addition, we should speak of top or senior management, as it was done in the former standard texts.	Important information of the former standard texts.
10	Sweden	5			General comment	0	322	General comment on foot-notes	Check if the foot-notes can be made more clear, given the context in which they will be interpreted, e.g. Article 15.3 of IED.	Several of the foot-notes would have been quite unproblematic under IPPC, but can cause interpretation problems under IED, e.g. when implementing Article 15.3. One example is table 5:18, where it is written below the table that "The higher levels of the ranges are associated with...". This implies that, for each of two alternatives, the BAT-AEL in practice is just one level, and not, as recommended, a range. Another example is table 5.28 where a foot-note says that "considerations concerning the economic viability for achieving the BAT-AELs...are reported". What implications will that have when implementing Article 15.3?
11	Germany	5			General comment	0	322	We recommend to add again an introduction to this chapter compared to the introduction of the corresponding chapter of the document IEF 22-4-3.	Add the introduction of chapter 5 of the document IEF 22-4-3 (7 April 2010) (p. 17/18), taking into account the new provisions of the IED.	The BREFs are used by a large variety of groups of people who have different knowledge of the IED. In addition, the BREFs are used worldwide. This chapter of the former standard texts under the IPPCD was very helpful for the user. Therefore, we recommend to keep it also in the new standard texts. Of course, the text has to be amended taking into account the provisions of the IED.
12	Germany	5			General comment	0	322	Since the applicability section in the single BATs only reflects parts of the information given in Chapter 4 on this topic, a sentence should be included in the general considerations section to make clear that detailed information can be found in Chapter 4 of the BREF.	Include a sentence stating that the full applicability information can only be found in the corresponding Chapter 4 of the BREF	Including this sentence helps to understand that it is not sufficient to only read Chapter 5 to understand the technique with all its aspects.
13	Germany	5			General comment	0	322	Many of the applicability sections contain information starting with "may be". Such information should not be mentioned in Chapter 5. Only very clear statements should be made here.	Rewrite or delete information which is not specific enough.	
14	Germany	5			General comment	0	322	Many of the applicability sections contain information stating "where technically and economically feasible". This statement is too general. Restrictions must be clearly stated or this statement should be deleted.	Rewrite or delete information which is not specific enough.	
15	Germany	5			General comment	0	322	The split view must be kept in Chapter 5 until the adoption of the BAT conclusions in the Article 75 committee.	Reintroduce the split views as an option for the political decision on BAT conclusions according to Article 13-5.	Removing the split views from the BAT Chapters in the BREF leads to an alteration of the conclusions of the TWG. The final decision whether to pay attention to the different opinion given in the split view or not lies in the hand of politics. Relocating the split views to Chapter 7 is not appropriate as the split views completely lose their context (i.e. the conclusions on BAT).
16	Germany	5			General comment	0	322	When setting a BAT the focus lies on the BATAEL. Therefore, it should be stated first. In a second part the appropriate techniques for achieving the BATAEL should be listed	Reorganize the BAT formulations and begin with e.g. "BAT is to reduce dust emissions. The following level of dust is BAT: (range) by using one or a combination of the following techniques: ..."	For proper transposition the BATs need to be adjusted accordingly, e.g. especially for BAT 17, 25, 49.
17	Germany	5			General comment	0	322	It is impossible to transpose different BATAEL for one subsector and one pollutant and fuel-type, unless there are clear technical restrictions for the application of one or more techniques in specific cases.	Change BATs (especially #17, 25, 49) so that BATAEL is stated first, followed by the list of BAT (in term of the techniques).	If different emission levels are associated with individual techniques considered as BAT, this is an interesting information. But these emission levels should not be classified as individual BAT-AELs, unless the applicability of the mentioned techniques is clearly restricted. Article 15-2 IED demands that permit conditions shall be based on BAT without prescribing the use of any technique or specific technology. Accordingly the BAT-AELs should describe a certain level of environmental protection; it should not depend on the operator's choice of techniques.
18	Bulgaria	5			General comment	0	322	We recognize the great deal of work that has been done so far on the document. It contains huge quantity of valuable information. We are of the opinion that under the original IPPC directive it would be extremely useful both for the CA and for the industry. Never the less the IED requires a new perception of the BREFs, incl. of the BAT conclusions and therefore – new demands on their contents. In this sense our general comment would be that despite the parallel work we consider that the quality of BREF document and its fitness to respond to the requirements of the IED directive should be assessed after the adoption of the BREF Guidance document according to art. 13(3)(c) and (d) of IED. This will ensure that the adopted BREF will comply to the guidance and the IED needs		
19	Bulgaria	5				0	322	The definitions for the new and existing plant does not take into consideration the process of plant/installation design. In this case the word 'introduced' have to be clarified.	We suggest as existing plants to be considered not only those build before the publication of the BAT conclusions but also those designed before that date.	
20	Sweden	5			General comment	0	322	General comment on the use of "<"	delete "<" and insert ranges as appropriate	The Guidance document of 24 June 2011 states at page 23 that it is preferable to use a true range rather than an expression of the type <-x.
21	Sweden	5				0	322	General comment regarding BAT-AELs for metals	There should be separate BAT-AELs for Cd.	In Annex VI of IED Cd, Hg and Tl have separate values due to their higher toxicity compared to the other metals.
22	CPIV, Hungary, Greece	5			General comment	0	322	A transitional period is needed for existing installations	We urge the IED Article 13 Forum, when expressing its opinion on both our BREFs, to acknowledge that BAT AELs stipulated in our revised BREFs (being made IED ready after completion under the former IPPC regime) should only be imposed for existing installations at their next cold repair. Nothing in the IED expressly forbids inserting transitional measures for existing installations in the BAT Conclusions.	The review of both BREFs - Glass Manufacturing (GLS) started in 2007 and Iron and Steel production (I&S) started in 2006 - was done under the scope of the IPPC Directive (96/61/EC) and not under the scope of the IE Directive (2010/75/EU). Furthermore, it was repeatedly stated by the Commission and confirmed in the February 2011 Draft GLS BREF and the October 2010 Draft I&S BREF[1], that both BREFs were to be revised under the scope of the IPPC Directive (96/61/EC) and not under the scope of the IE Directive (2010/75/EU). [1] See Executive summary of both sectors: "The Best Available Techniques (BAT) Reference Document (BREF) entitled 'Reference Document on Best Available Techniques in the Glass Manufacturing Industry' reflects an information exchange carried out under Article 17(2) of Directive 2008/1/EC of the European Parliament and of the Council (IPPC Directive)."
								fully apply the definition of Article 3(12) on BAT conclusions of the IE Directive	We urge the IED Article 13 Forum, when expressing its opinion on both BREFs, to acknowledge that this failure in the drafting of the BAT conclusions – legally binding for permitting under the IED – cannot be accepted. The only way to correct our BAT conclusions is to fully apply the definition of Article 3(12) on "BAT conclusions" of the IE Directive.	The revision of both GLS and I&S BREFs were conducted under the rules of the Information Exchange Forum, making use of the BREF Outline and Guide. On the basis of background papers – provided by the EIPPCB – their final TWG meetings concentrated on all conclusions on BAT sections disseminated in the various chapters of their respective BREFs.

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23	CPIV	5			General comment	0	322		<p>It is important to understand and recognise that the standard structure of a "conclusions on BAT section" is such that all of these sections contain several cross references to previous sections. The reader is consequently referred back to other parts of the BREF in order to get the full picture and sufficiently detailed information in terms of e.g. description of the technique in question as well as its applicability. The final drafts of both GLS and I&amp;S BREFs – respectively dated February 2011/October 2010 - still contained all cross references in the conclusions on BAT sections. The "BAT conclusions" do not.</p> <p>In November 2010, the EIPPCB informed us that the final drafts of our BREFs had to be re-written with the objective to align it with the IE Directive (BAT conclusions as defined under the IE Directive have now to be elaborated in the framework of the review/elaboration of BREFs).</p> <p>In accordance with the definition of Article 3(12) on "BAT conclusions" of the IE Directive, industry was expecting a fair result from this exercise (made solely by EIPPCB) mirroring to the largest feasible extent the discussions and outcomes achieved in the Seville TWGs.</p> <p>The definition of Article 3(12) on "BAT conclusions" of the IE Directive reads as follows: means a document containing the parts of a BAT reference document laying down the conclusions on best available techniques, their description, information to assess their applicability, the emission levels associated with the best available techniques, associated monitoring, associated consumption levels and, where appropriate, relevant site remediation measures;</p> <p>Having scrutinised the latest version of our BREFs – submitted to the opinion of the IED Article 13 Forum last June – both Glass and Iron &amp; Steel industries are of the opinion that the way the BAT conclusions have been narrowed down – notably excluding parts of the valuable information to assess the applicability of best available techniques – is neither appropriate nor acceptable.</p>	
24	CPIV, FEVE	5				0	322	It is necessary to inform the reader of BAT Conclusions that additional information can be found in the Glass BREF.	<p>Add a new chapter "Introduction" before "Scope" saying: "The information provided in this document only provides a very brief summary of the information contained within the Glass BREF Note. A full consideration of all issues is necessary during the decision making process. For a full discussion of the techniques, the pros and cons of the techniques, and a consideration of cross media effects and economic factors please refer to the relevant sections of the Glass BREF."</p>	<p>There is a complete lack of referencing to the BREF document in the BAT Conclusion document. Reference to the BREF is necessary here to guide the reader to the full information. It is an impossible task to summarise a 447 pages document in a 60 pages document. Any reader of the BAT Conclusion should also look into the BREF to get a real understanding of the manufacturing process, the abatement methods and technologies, the economics and the full environmental consequences</p>
25	Italy, Spain	5	1			0	322	Insert general statement in BAT conclusions concerning applicability of techniques used in continuous melting processes.	<p>Insert in the introduction of Chapter 5 the last sentence on page 164 (Section 4.1): "In assessing the applicability of any technique described in this chapter to a continuous melting process, it is necessary to consider whether it can be applied to the furnace during the campaign or if it can only be applied (or is best applied) at a rebuild."</p>	
26	Greece	5			General comment	0	323	The Chapter 5 has been replaced by the BAT Conclusions document. Some important information contained in the Chapter 5 is now missing (including applicability and subsector specific information).	<p>The BREF Document should be modified (complemented), or, at least, the final draft version of Chapter 5 Best available techniques for the glass manufacturing industry (dated February 2011) should be kept as an additional public available document.</p>	<p>This information is valuable for local authorities and glass manufacturers. Moreover the latest version does not reflect all the technical decisions of the Seville TWG.</p>
27	Austria	1	5		General comment	0	322	For many cases, it would be easier to omit the column called "Applicability" in the tables and only to enumerate the relevant points. In any case it must be clear, that "applicability" is not the same as "usually applied". Economic applicability would mean economic viability in sense of the IED and this is something different from economic considerations or economic decisions of operators. The BAT conclusions must be clear on this subject and many comments relate to this column.	<p>Sometimes, all techniques are generally applicable, p.ex. Tables for BAT 11, 12 and BAT 13 (emissions to water). The BAT conclusions must be clear what is applicable and what is applied (at the time of writing). In some cases it would be better to delete the applicability column and use it only where necessary. Not all restrictions are "applicability" restrictions and should then be not qualified as such.</p>	
28	Germany	5			General comment	0	323	Add information in the section General considerations about the conditions under which monitored values comply with BATAEL. The conditions when a ELV is met needs to be described, e.g. rounding rule, 3 out of 4 values need to meet the ELV, daily mean value etc.. Otherwise the ELVs are possibly not comparable or can differ widely.		<p>For the implementation clarification is necessary</p>
29	Germany	5			General comment	0	323	There is no definition for discontinuous measurements.	<p>Add a definition for discontinuous measurements, especially on the frequency of measurements</p>	<p>Enhances the equal implementation</p>
30	Germany	5			General comment	0	323	The official methods for emission monitoring are missing. Some of the methods are listed in the annex of the BREF but would be missing in the stand-alone document.	<p>Add information on monitoring methods in terms of EN norms. If there are no EN norms available ISO norms should be listed</p>	<p>Enhances the equal implementation</p>
31	The Netherlands	5			General comment	0	323	Introduction: in the BAT conclusion the relation with the text in section 4.1 of the BREF is missing. Although for the techniques for which rebuild is of importance this is added under applicability the BAT conclusion are not clear on how to assess a permit under these condition especially in relation to article 21 under 3 of the Industrial emission directive	<p>Reintroduce text that was in BAT conclusions of draft February 2011 under 5.2 general considerations page 351 first two paragraphs (see also attached file) and clarify relation with article 21 sub 3 of the Industrial Emission Directive and (22) in the directive "In specific cases where permit reconsideration and updating identifies that a longer period than 4 years after the publication of a decision on BAT conclusions might be needed to introduce new best available techniques, competent authorities may set a longer time period in permit conditions where this is justified on the basis of the criteria laid down in this Directive".</p>	<p>Clarification of permitting and BAT conclusions and Industrial Emission Directive article 21 sub 3</p>
32	Poland	5			General comment	0	323	The Chapter 5 has been replaced by the BAT Conclusions document. Some important information contained in the Chapter 5 is now missing (including applicability and subsector specific information).	<p>The BREF Document should be modified (complemented), or, at least, the final draft version of Chapter 5 Best available techniques for the glass manufacturing industry (dated February 2011) should be kept as an additional public available document.</p>	<p>This information is valuable for local authorities and glass manufacturers. Moreover the latest version does not reflect all the technical decisions of the Seville TWG.</p>
33	Germany	5			General comment	0	324	The last full GLS BREF draft (10/2010) was more specific about the conversion issue with a clear statement about the emission concentrations being the prime basis and not the emission factors. This information in not part of the BREF now anymore, but is considered crucial	<p>Re-insert the sentence from GLS BREF draft (10/2010, p. 350) starting "Emission concentrations (mg/Nm3) are given as the prime basis of the emissions levels associated with BAT, except for oxy fuel..."</p>	<p>This information is crucial for understanding the concept of giving both values (concentration and emission factor) and helps to reduce misunderstanding about the relevance of the 2 values.</p>
34	Austria, the Netherlands	5			General considerations / conversion	0	324	Under general considerations / conversion from concentrations to specific mass emissions, for clarification the text as it was in the original draft BREF "In this chapter emissions concentrations (mg/Nm <sup>3</sup> ) are given as the prime basis of emission levels associated with BAT" should be reintroduced.	<p>Re-insert the sentence into the "conversion section" from chapter 5.2, p.338, of the Draft BREF after table 1: "Emission concentrations (mg/m<sup>3</sup>) are given as the prime basis of the emission levels associated with BAT, except for oxy fuel fired furnaces".</p>	<p>This (original) text of chapter 5.2 of the glass BREF contains relevant information and must be included in the BAT conclusions. It was in the draft BREF when discussing BAT AELs and it also reflects that the discussion on BAT AELs in the final TWG meeting was on emission concentrations (except for oxy fuel furnaces) and not on the mass emission factors, which were calculated on the Basis of Tab.5.2.</p>
35	Bulgaria	5	1	1		0	326	The chapter deals with a lot of general recommendations on the management of the operation.	<p>Such type of recommendations should be excluded from BAT conclusions not only from this chapter but from other parts of BAT conclusions also.</p>	<p>Such recommendations are quite sound but the right place to deal with EMS's elements should not be there (incl. because they are quite applicable to all IPPC activities).</p>
36	CPIV, FEVE	5	1			0	326	Distinction is needed between existing and new plants. This is acknowledged in Fig 3.1 page 25 of the guidance document, but this document was not yet available at the time of writing the GLASS BREF !	<p>Add the orange sentence: "Unless otherwise stated, the BAT conclusions presented in this section can be applied to all installations. Member State authorities may, for installations existing at the time of entry into force of these BAT conclusions, require that a BAT conclusion included in this section applies from the first rebuild of the furnace, the first major cold repair, or the first renewal of the air pollution control equipment where this is justified on the ground that earlier application of that BAT conclusion would lead to disproportionately higher costs compared to the environmental benefits."</p>	<p>When the BREF on Glass Manufacturing was put under revision in 2007 (Kick-off Meeting on Glass BREF review 16-18 January 2007) it was repeatedly stated by the Commission and confirmed in the latest Draft BREF on Glass Manufacturing (February 2011) that this BREF was to be revised under the scope of the IPPC Directive (96/61/EC) and not under the scope of the IE Directive (2010/75/EU) that was not published at that time.</p> <p>Based on this statement, the Glass Industry participated to the review of the BREF Glass Manufacturing with the spirit of the IPPC Directive, having in mind the flexibility mechanism left to the member states for the implementation of the BAT AEL and especially the timing for their implementation at installation level.</p> <p>In this context, no specific measure was foreseen in the Glass BREF for existing plants, compared to new plants. Furnaces lifetime can exceed 12 years. Therefore, it will not be possible for all existing furnaces to comply with all BAT Conclusions 4 years after their publication.</p>
37	Germany	5	1	1		1	326	BAT 1: Important aspects, which are concerning the components of an EMS and which were part of the former standard texts, are missing.	<p>Add the paragraph from the corresponding chapter of the document IEF 22-4-3 (7 April 2010) (p. 19/20) beginning: "Three further features are listed below, ...that they are properly designed and implemented."</p>	<p>Important information of the former standard texts.</p>
38	Bulgaria	5	1	2		0	327	The consumption levels are missing in the chapter. Energy consumption issues are dealt with in a quite general way, the presented justification of the approach apparently is valid to the emissions as well, though the emissions are described in a much greater detail	<p>Specific values of energy consumption of each described process should be added to the chapter.</p>	<p>We are of the opinion that the missing of concrete consumption data will create a broad variety and hard to reason (in favour or against) implementation of the Art.14.6 and Art.15.4 of IED and difficulties in the judgment of both the CA and the industry on the proper implementation of those articles.</p> <p>Information on the used energy/raw materials/water/fuel is available – the first round of the IPPC permit issuing has been completed and on that basis the information should be there.</p> <p>Based on the comments above we consider that the present content of the BAT conclusions chapter does not comply to the "BAT conclusions definition" in the IED.</p> <p>That makes very difficult to judge on the technical characteristics of the concerned installation, compared to those described in the "BAT conclusions" chapter.</p> <p>As an illustration is the measure Nr. 8 - to operate the waste gas treatment systems during normal operating conditions at full capacity and availability in order to reduce or prevent emissions.</p> <p>It is unnecessary to operate waste gas treatment systems always at full capacity.</p> <p>Surely if BAT is being achieved that is enough, eg. why should the operator input more lime into EP if SOx limit is being respected especially if it means that not all EP dust can be recycled so causes a waste?</p>
39	Poland	5				0	327	The four years period for the implementation of BAT conclusions is too short for many existing installations. It should be possible to delay entry into force of the BAT conclusion provisions until the normal operation stoppage for cold repair (only for existing installations).	<p>Add new paragraph after each first paragraph of sections containing BAT conclusions for the glass industry and its subsectors (5.1 – 5.9). This paragraph should give the provision for the member state authorities to delay the implementation of BAT conclusions until next cold repair or rebuild (when the furnaces are cooled down).</p>	<p>Installations for the manufacture of glass are operated continuously for several years. Major modifications to the installation can be applied during the cold repair or rebuild of a furnace. The implementation of the BAT AEL's within four years will in many cases lead to disproportionately higher costs compared to achieved reductions.</p> <p>This proposal will also avoid massive use of derogation (Art. 15.4 of the IED).</p> <p>The problem is also explained in the position paper of CPIV (Standing Committee of the European Glass Industries) "BAT conclusions on glass manufacturing. Special attention needed for existing installations" issued on 30th of May 2011.</p>
40	Austria	5				2	327	Add table 4.43 on page 327 of the BREF from February 2011 regarding the specific energy consumption after the table of BAT 2 of the BAT conclusions.	<p>Relevant information of chapter 4 is included in the BAT conclusions, such as abatement technologies and applicability. Energy efficiency is relevant and shall be included in chapter 5 (though not as permit conditions as made clear in the guidance document on the BREF content and process).</p>	
41	Bulgaria	5	1	3		0	328	Raw materials consumption, at least basic ones incl. the chemical substances and fuels used are missing	<p>Type and specific values of basic and hazardous RAW materials and fuels used in the described installations/processes should be added to the chapter.</p>	<p>see above comment 34 - Bulgaria</p>

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42	Bulgaria	5	1	3		3	328	One of the described techniques (application of negative pressure in the furnace) influences with another aspect of BAT - energy efficiency but without concrete values for energy consumption, applicability of the technique can not be assessed.	See our proposal Nr. 4.	see above comment 34 - Bulgaria	
43	France					10	330	Tablea 5-4 : footnote : what should be considered as higher inlet Nox concentrations, higher reduction rates and the ageing of the catalyst ? Give values in order to be concrete	see BREF document		
44	CPIV, FEVE, Greece	5	1	4			330	A waste gas treatment system doesn't need to be operated at full capacity if lower capacities allow to respect the law.	Change "BAT is to operate the waste gas treatment systems during normal operating conditions at full capacity and availability in order to reduce or prevent emissions" into "BAT is to optimise the waste gas treatment systems during normal operating conditions in order to reduce or prevent emissions"	It is unnecessary to operate waste gas treatment systems at full capacity. Surely if BAT is being achieved that is enough. eg. why should we input more lime into EP if SOx limit is being respected especially if it means that not all EP dust can be recycled so causes a waste?	
44	Bulgaria	5	1	4		8	331	The chapter deals with a lot of general recommendations on the management of the operation. There is missing criteria for compliance with the described measures.	See our proposal Nr. 3	see above comment 34 - Bulgaria	
45	Bulgaria	5	1	5		12	331	The waste water issues are dealt with very generally and not production wise or by process wise	Information for the emissions in waste water for each described process should be added.	see above comment 34 - Bulgaria	
46	Germany	5	1	5		13	332	BAT 13: The information in the applicability section for techniques ii and iii does not represent applicability restrictions as such. The techniques would only be requested though either when high loads of organic substances require for a biological treatment or when there is no own waste water treatment onsite.	Delete applicability sections for techniques ii and iii	The information given is not relevant for the applicability. The techniques are generally applicable but would only be requested where necessary.	
47	Germany	5	1	5		13	332	BAT 13: Technique iv requires the involvement of external parties. When transferring the BAT Conclusions into a legal document and then later into a permit, it does not seem feasible setting such requirements in a permit when installations which are not regulated under number 3.3 of the IED are involved.	Delete technique iv	Requirements involving the cooperation with other industry sectors cannot be set in a legally binding document, therefore, technique iv need to be deleted.	
48	Germany	5	1	5		13	332	BAT 13: Footnote 2 refers to sampling periods of two or 24 hours. There can be quite substantial differences in the values when averaging over 2 or 24 hours. Therefore, only one averaging period should be given.	Specify the averaging period and move it to table 5.1 together with the other reference conditions	Enhances harmonized implementation.	
49	Austria					13	332	Delete all applicabilities in the table and leave the listing such as excerpted from section 4.6 of the BREF. Explanatory text under the header "applicability" is misleading and in case of biological treatment and municipal waste treatment plant clearly not a matter of applicability	Explanatory text under the header "applicability" is misleading and in case of biological treatment and municipal waste water treatment plant clearly not a matter of applicability		
50	Germany	5	1	6		14	333	BAT 14: Techniques v and vi refer to techniques where waste is passed on to other users. When transferring the BAT Conclusions into a legal document and then later into a permit, it does not seem feasible setting such requirements in a permit	Delete "or in other industries" in v and vi	Requirements involving the cooperation with other industry sectors cannot be set in a legally binding document, therefore, techniques v and vi need to be reconsidered.	
51	Bulgaria	5	1	6		14	333	BAT conclusions do not include values for the waste generated directly from the activities.	Such information have to be collected and added to the document.	see above comment 34 - Bulgaria	
52	Bulgaria	5	1	7		15	333	This chapter consist of too general recommendations and there is nothing specific for the glass sector.	Information specifically oriented to the noise emissions from described processes should be included.		
53	CPIV, FEVE	5	2				0	334	Distinction is needed between existing and new plants. This is acknowledged in Fig 3.1 page 25 of the guidance document, but this document was not yet available at the time of writing the GLASS BREF !	Add the orange sentence: "Unless otherwise stated, the Bat conclusions presented in this section can be applied to all container glass manufacturing installations. Member State authorities may, for installations existing at the time of entry into force of these BAT conclusions, require that a BAT conclusion included in this section applies from the first rebuild of the furnace, the first major cold repair, or the first renewal of the air pollution control equipment where this is justified on the ground that earlier application of that BAT conclusion would lead to disproportionately higher costs compared to the environmental benefits."	When the BREF on Glass Manufacturing was put under revision in 2007 (Kick-off Meeting on Glass BREF review 16-18 January 2007) it was repeatedly stated by the Commission and confirmed in the latest Draft BREF on Glass Manufacturing (February 2011) that this BREF was to be revised under the scope of the IPPC Directive (96/61/EC) and not under the scope of the IE Directive (2010/75/EU) that was not published at that time. Based on this statement, the Glass Industry participated to the review of the BREF Glass Manufacturing with the spirit of the IPPC Directive, having in mind the flexibility mechanism left to the member states for the implementation of the BAT AEL and especially the timing for their implementation at installation level. In this context, no specific measure was foreseen in the Glass BREF for existing plants, compared to new plants. Furnaces lifetime can exceed 12 years. Therefore, it will not be possible for all existing furnaces to comply with all BAT Conclusions 4 years after their publication.
54	CPIV, FEVE	5	2	1		16	334	This reference is useful to show that filters variability is important. This was so agreed in the TWG.	Insert the graph from the Glass BREF (page 192) showing the variations of dust monitoring.	This graph is important to respect the spirit of the Glass BREF in the BAT Conclusions	
55	Germany	5	2	2		17	334	BAT 17: In this BAT different BATAEL are associated with different techniques for one subsector and one fuel type without giving reasons for this split in the applicability section.	Adjust the applicability section so that it is clear when only primary techniques can be applied and when secondary techniques must be installed.	It cannot be left to the transposing member states when they require the installation of secondary techniques and when only primary techniques are considered suitable. In the BREF a clear distinction must be made by adjusting the applicability section. If this is not done the BAT cannot be adequately implemented.	
56	France	5	2	2		17	334	"Full benefits are achieved at furnace rebuild, when combined with optimum furnace design and geometry" Firstly, the type of rebuild is not specified (it should be in our opinion normal or complete rebuild). Secondly, we do not understand why this statement applies only to the air/fuel ratio. It should be a general statement for primary measures and not only the air/fuel ratio for which interesting results could also be obtained for existing plant.			
57	Bulgaria	5	2	2	17	17	334	There is a split view on this topic	We consider important any split view on such main topic as BAT-AELs to be eliminated.	Existence of a split view on the emissions of Nox and SO2 from the melting process increases the risk for the proper appliance of these BAT-AELs.	
58	Poland	5	2			0	335	The reference to two accepted split views is missing.	Add the references to the split views in Chapter 7 on pages containing BAT conclusions no 17 and no 19 (BAT conclusions for container glass manufacturing: 5.2.2 Nitrogen oxides (NOx) from melting furnaces and Sulphur oxides (SOx) from melting furnaces).	References should be added to fully inform the reader.	
59	Austria					17	335	II. secondary techniques: Delete the whole text in the column called "Applicability" for SCR and SNCR and add for i. SCR the applicability called: "General applicable after abatement system (dedusting, desulphurisation)," and add for the technique ii. SNCR the applicability called: "The technique is applicable to recuperative furnaces" eventually " and it may be applicable to new regenerative furnaces with split regenerators ."	SCR: requires de-dusting (compatible with BAT range) and de-sulphurisation (compatible with lower end of BAT range), mainly for SO3 elimination in the glass sector; SCR is applicable after bag filters, but due to reheating requirement in this case it is usually not done. Again, the BAT conclusions must distinguish between applicable and "usually applied".		
60	CPIV, Greece	5	2	2		17	335	Reference to split view in the BAT Conclusions is important to fully inform the reader (the other parts of the BREF will not be translated)	Table 5.7: there is no reference to the split view of the Glass BREF. Please add under the table "A split view exists in the BREF on this topic."	The spirit of the GLAS BREF should be reflected in the BAT Conclusions	
61	Romania	5	2	2		17	335	For NOx, Table 5.7: Considering the conditions of the existing installations currently functioning which have not come to the end of their life cycle and which use gas as fuel, we consider that is better to take into account the split view, so for existing plants the range for NOx be <700-1100 mgNOx/Nm3 Rate tightening of container glass Nox BAT AEL- values will significantly increase the glass container manufacturing costs.	Add in the conclusion a new table for existing installation, and for NOx the ELV will be <700-1100 mgNOx/Nm3	Can appear the additional cost caused by the further deterioration the competition conditions between glass and plastic packaging materials, considering the current rates should be given help of use of glass bottles for food packaging material because of the reusability.	
62	Germany	5	2	2		18	336	BAT 18: the term "for short campaigns" is not specific enough	Define this term	For the implementation clarification is necessary	
63	Austria					19	336	Delete the whole column for applicability in the table or delete for technique ii. starting: "Minimisation of the sulphur content ..." the 2 last paragraphs regarding is applicability starting: "The application of sulphur balance ..." and "The effective reduction of SOx ..."	This does not regard the applicability and is not a consensus view of the TWG.		
64	Bulgaria	5	2	3	19	19	336	There is a split view on this topic	We consider important any split view on such main topic as BAT-AELs to be eliminated.	Existence of a split view on the emissions of Nox and SO2 from the melting process increases the risk for the proper appliance of these BAT-AELs.	
65	Germany	5	2	3		19	337	BAT 19: Footnote 1 contains a statement that it "may be difficult to achieve" the levels given in the table. Such a statement should not be part of a legal document. It should be clearly stated which levels can be achieved and where problems may arise. This may be an issue for the applicability section.	Specify the second sentence of footnote 1 when transferring the BAT into a legal document since such an unclear statement cannot be implemented. The usually high priority of filterdust recycling and intensive use of external cullet should be emphasized here considering the environment as a whole and an additional BATAEL should be available.	For the implementation clarification is necessary	
66	CPIV, FEVE	5	2	3		19	337	Reference to split view in the BAT Conclusions is important to fully inform the reader (the other parts of the BREF will not be translated)	Table 5.9: there is no reference to the split view of the Glass BREF. Please add under the table "A split view exists in the BREF on this topic."	The spirit of the GLAS BREF should be reflected in the BAT Conclusions. In particular for SOx, it is absolutely necessary to have a provision for higher SOx emissions in the case of complete filter dust recycling in combination with high quotas of external cullet. It would be completely unproductive if producing an additional waste stream and limiting the enormous possibilities to reduce the energy input were considered "BAT"!	
67	Romania	5	2	2		19	337	For Sox, Table 5.9, correlated with NOx, the conditions of the existing installations currently functioning which have not come to the end of their life cycle and which use gas as fuel, we consider that is better to take into account the split view, SOx <300-600 mgSOx/Nm3	Add in the conclusion a new table for existing installation, and for NOx the ELV will be <300-600 mgSOx/Nm3	Can appear the additional cost caused by the further deterioration the competition conditions between glass and plastic packaging materials	
68	Germany	5	2	5		21	338	BAT 21: Footnote 4 contains information about possibly higher emissions in certain cases. This should not be part of the BATAEL-table since it is already described in Chapter 4.	Delete footnote 4 as already requested in earlier commenting periods since it weakens the BATAEL and was not agreed during final meeting. Datum in chapter 3 shows that the maximum Se emission is 1.88 mg/Nm3 which would never lead to 3 mg for metals group 1 if compliance to the general BATAEL of metals group 1 of 0.2 - 1 mg/Nm3 is given!	For the implementation clarification is necessary	
69	CPIV, FEVE	5	3			0	340		Add the orange sentence: "Unless otherwise stated, the Bat conclusions presented in this section can be applied to all flat glass manufacturing installations. Member State authorities may, for installations existing at the time of entry into force of these BAT conclusions, require that a BAT conclusion included in this section applies from the first rebuild of the furnace, the first major cold repair, or the first renewal of the air pollution control equipment where this is justified on the ground that earlier application of that BAT conclusion would lead to disproportionately higher costs compared to the environmental benefits."	When the BREF on Glass Manufacturing was put under revision in 2007 (Kick-off Meeting on Glass BREF review 16-18 January 2007) it was repeatedly stated by the Commission and confirmed in the latest Draft BREF on Glass Manufacturing (February 2011) that this BREF was to be revised under the scope of the IPPC Directive (96/61/EC) and not under the scope of the IE Directive (2010/75/EU) that was not published at that time. Based on this statement, the Glass Industry participated to the review of the BREF Glass Manufacturing with the spirit of the IPPC Directive, having in mind the flexibility mechanism left to the member states for the implementation of the BAT AEL and especially the timing for their implementation at installation level. In this context, no specific measure was foreseen in the Glass BREF for existing plants, compared to new plants. Furnaces lifetime can exceed 12 years. Therefore, it will not be possible for all existing furnaces to comply with all BAT Conclusions 4 years after their publication. See CPIV paper for a full discussion on this issue.	
70	CPIV	5	3	1		24	340		Insert the graph from the Glass BREF (page 192) showing the variations of dust monitoring.	This graph is important to respect the spirit of the Glass BREF in the BAT Conclusions	

Comment No.	Comments from (Forum Member)	Chapter No. Section No.			Chapter title	BAT	Page # (PDF version)	Comment description	Proposed amendment	Rationale
71	Austria					25	340	Delete the beginning of the applicability of technique i. (b) "Reduced combustion air temperature", so that the applicability is called: "Applicable only under installation-specific circumstances, due to a lower furnace efficiency and higher fuel demand."	That restriction to small capacities for speciality flat glass cannot be deducted from chapter 4.4.2.1 on page 219 of the Draft BREF February 2011.	
72	France	5	3	2		25	340	"Full benefits are achieved at furnace rebuild, when combined with optimum furnace design and geometry" Firstly, the type of rebuild is not specified (it should be in our opinion normal or complete rebuild). Secondly, we do not understand why this statement applies only to the air/fuel ratio. It should be a general statement for primary measures and not only the air/fuel ratio for which interesting results could also be obtained for existing plant.		
73	Romania	5	3	2		25	341	For NOx, Table 5.15: Considering the conditions of the existing installations currently functioning which have not come to the end of their life cycle and which use gas as fuel, we consider that it is better to take into account the split view, so for existing plants the common results of the monitoring of emissions from installation in this sector are between 1000-1200 mgNOx/Nm3	The BAT-AEL for Nox:1000-1200 mgNOx/Nm3 (for existing installations)	Is not justified dismantling of the oven
74	Germany	5	3	2		25	341	BAT 25: In this BAT different BATAEL are associated with different techniques for one subsector and one fuel type without giving reasons for this split in the applicability section.	Adjust the applicability section so that it is clear when only primary techniques can be applied and when secondary techniques must be installed.	It cannot be left to the transposing member states when they require the installation of secondary techniques and when only primary techniques are considered suitable. In the BREF a clear distinction must be made by adjusting the applicability section. If this is not done the BAT cannot be adequately implemented.
75	Germany	5	3	2		25	341	BAT 25: Table 5.15, the split view on Nox for secondary techniques is missing	Include the split view on NOx for secondary techniques	Split views shall not be part of the chapter 7 but must be placed where they belong to (the corresponding BAT) - see comment 18
76	Austria					25	341	II. secondary techniques: Delete the whole text in the column called "Applicability" for SCR and SNCR and add for i. SCR the applicability called: "General applicable after abatement system (dedusting, desulphurisation)." and add for the technique ii. SNCR the applicability called: "The technique is applicable to recuperative furnaces", eventually: "and it may be applicable to new regenerative furnaces with split regenerators."	SCR: requires de-dusting (compatible with BAT range) and de-sulphurisation (compatible with lower end of BAT range), mainly for SO3 elimination in the glass sector; SCR is applicable after bag filters, but due to reheating requirement in this case it is usually not done. Again, the BAT conclusions must distinguish between applicable and "usually applied". SNCR: The Text cannot be completely derived from chapter 4 or 5 of the Draft BREF.	
77	France					25	341	Table 15:BAT-AEL 400-700 for secondary techniques. We still have a split view on the ranges that can be achieved with secondary techniques in the Flat Glass sector. Our split view is NOx emissions with combination of primary and secondary techniques 200-500 mg/Nm <sup>3</sup>		
78	The Netherlands	5	3			25	342	Table 5.15: secondary techniques, BAT-AEL 400-700. We still have a split view on te ranges that can be achieved with secondary techniques in the Flat Glass sector. Our split view is Nox emissions with secondary techniques < 200-500 mg/Nm <sup>3</sup> .	In the BREF the split view is missing and in the BAT conclusions although in the opinion of the commission no split view will be taken into account we are still of the opinion that the range should be <200-500 mg/Nm <sup>3</sup> .	
79	Germany	5	3	2		26	342	BAT 26: the term "in a limited number of short campaigns" is not specific enough	Define this term	For the implementation clarification is necessary
80	Austria					27	342	Delete for technique ii. starting: "Minimisation of the sulphur content ..." the last paragraph regarding its applicability starting: "The application of sulphur balance ..."	This does not regard the applicability and is not a consensus view of the TWG.	
81	Germany	5	3	3		27	343	BAT 27: When transferring Chapter 5 into a legal document, it is absolutely necessary to avoid unclear statements which may open up the conclusions drawn (such as BATAELs). Therefore, concerns reported cannot be part of the BAT Conclusions.	Specify footnote 4 when transferring the BAT into a legal document since such an unclear statement cannot be implemented. The usually high priority of filterdust recycling and intensive use of external cullet should be emphasized here considering the environment as a whole and an additional BATAEL should be available.	For the implementation clarification is necessary
82	CPIV	5	4				346		Add the orange sentence: "Unless otherwise stated, the Bat conclusions presented in this section can be applied to all continuous glass fibre installations. Member State authorities may, for installations existing at the time of entry into force of these BAT conclusions, require that a BAT conclusion included in this section applies from the first rebuild of the furnace, the first major cold repair, or the first renewal of the air pollution control equipment where this is justified on the ground that earlier application of that BAT conclusion would lead to disproportionately higher costs compared to the environmental benefits."	When the BREF on Glass Manufacturing was put under revision in 2007 (Kick-off Meeting on Glass BREF review 16-18 January 2007) it was repeatedly stated by the Commission and confirmed in the latest Draft BREF on Glass Manufacturing (February 2011) that this BREF was to be revised under the scope of the IPPC Directive (96/61/EC) and not under the scope of the IE Directive (2010/75/EU) that was not published at that time. Based on this statement, the Glass Industry participated to the review of the BREF Glass Manufacturing with the spirit of the IPPC Directive, having in mind the flexibility mechanism left to the member states for the implementation of the BAT AEL and especially the timing for their implementation at installation level. In this context, no specific measure was foreseen in the Glass BREF for existing plants, compared to new plants. Furnaces lifetime can exceed 12 years. Therefore, it will not be possible for all existing furnaces to comply with all BAT Conclusions 4 years after their publication. See CPIV paper for a full discussion on this issue.
83	Germany	5	4	1		32	346	BAT 32: Footnote 1 weakens the BATAEL by opening up the values up to 30 mg/Nm3	Delete footnote 1.	for the implementation clarification is necessary
84	Austria					32	346	ii Filtration system: delete in the column applicability the para after "the technique is generally applicable" starting with "the maximum env. Benefit....."	Most filtration systems in the EU have been implemented in existing plant and not even combined with a rebuild of the furnace. The quoted applicability restriction is not a consensus of the TWG and not consistent with other glass sectors!	
85	Austria					32	346	ii wet scrubbing: delete in the column applicability the para after "the technique is generally applicable" starting with "the application to existing plants....."	As filtration systems scrubbers can well be installed after exiting plants (but it will be done only where environmentally necessary). The eventually need for a waste water treatment plant after a scrubber cannot be an applicability restriction for a scrubber, if necessary. The quoted applicability restriction is not a consensus of the TWG!	
86	France	5	4	2		33	347	"Full benefits are achieved at furnace rebuild, when combined with optimum furnace design and geometry" Firstly, the type of rebuild is not specified (it should be in our opinion normal or complete rebuild). Secondly, we do not understand why this statement applies only to the air/fuel ratio. It should be a general statement for primary measures and not only the air/fuel ratio for which interesting results could also be obtained for existing plant.		
87	Austria					34	347	Delete in the column applicability for technique i. starting: "Minimisation of the sulphur content ..." the last paragraph regarding its applicability starting: "The application of sulphur balance ..."	This does not regard the applicability and is not a consensus view of the TWG.	
88	Austria					34	347	iv wet scrubbing: delete in the column applicability the para after "the technique is generally applicable" starting with "the application to existing plants....."	As filtration systems scrubbers can well be installed after existing plants (but it will be done only where environmentally necessary). The eventually need for a waste water treatment plant after a scrubber cannot be an applicability restriction for a scrubber, if necessary. The quoted applicability restriction is not a consensus of the TWG!	
89	Austria					35	348	iv wet scrubbing: delete in the column applicability the para after "the technique is generally applicable" starting with "the application to existing plants....."	As filtration systems scrubbers can well be installed after existing plants (but it will be done only where environmentally necessary). The eventually need for a waste water treatment plant after a scrubber cannot be an applicability restriction for a scrubber, if necessary. The quoted applicability restriction is not a consensus of the TWG!	
90	Austria					36	349	iii wet scrubbing: delete in the column applicability the para after "the technique is generally applicable" starting with "the application to existing plants....."	As filtration systems scrubbers can well be installed after existing plants (but it will be done only where environmentally necessary). The eventually need for a waste water treatment plant after a scrubber cannot be an applicability restriction for a scrubber, if necessary. The quoted applicability restriction is not a consensus of the TWG!	
91	Germany	5	4	6		37	349	BAT 37: in table 5.27 a BATAEL for VOC is set but there is no technique listed to reduce it	Add VOC minimization technique	setting a BATAEL requires an abatement technique to comply with it.
92	CPIV	5	5				351		Add the orange sentence: "Unless otherwise stated, the Bat conclusions presented in this section can be applied to all domestic glass manufacturing installations. Member State authorities may, for installations existing at the time of entry into force of these BAT conclusions, require that a BAT conclusion included in this section applies from the first rebuild of the furnace, the first major cold repair, or the first renewal of the air pollution control equipment where this is justified on the ground that earlier application of that BAT conclusion would lead to disproportionately higher costs compared to the environmental benefits."	When the BREF on Glass Manufacturing was put under revision in 2007 (Kick-off Meeting on Glass BREF review 16-18 January 2007) it was repeatedly stated by the Commission and confirmed in the latest Draft BREF on Glass Manufacturing (February 2011) that this BREF was to be revised under the scope of the IPPC Directive (96/61/EC) and not under the scope of the IE Directive (2010/75/EU) that was not published at that time. Based on this statement, the Glass Industry participated to the review of the BREF Glass Manufacturing with the spirit of the IPPC Directive, having in mind the flexibility mechanism left to the member states for the implementation of the BAT AEL and especially the timing for their implementation at installation level. In this context, no specific measure was foreseen in the Glass BREF for existing plants, compared to new plants. Furnaces lifetime can exceed 12 years. Therefore, it will not be possible for all existing furnaces to comply with all BAT Conclusions 4 years after their publication. See CPIV paper for a full discussion on this issue.
93	Germany	5	5	1		38	351	BAT 38: Footnote 1 in Table 5.28 is not of help for determining a BATAEL for smaller installations. They are as well capable of applying secondary techniques.	Delete footnote 1.	For the implementation clarification is necessary
94	Austria					38	351	Delete for technique i. the end of the sentence of the second paragraph called: "...which represent the main constituents of dust emitted from the melting furnace."	Volatile compounds are usually no main constituents of the dust.	
95	Austria					38	351	Delete the applicability of the technique v. (Wet scrubbing system) and add the following applicability: "Wet scrubbing systems are usually used for combination of dust, fluorine and boron emission abatement."	The applicability can neither be deducted from chapter 5 nor from chapter 4 of the Draft BREF February 2011. Again it is necessary to distinguish between "applicable" and "usually applied".	
96	France	5	5	2		39	352	"Full benefits are achieved at furnace rebuild, when combined with optimum furnace design and geometry" Firstly, the type of rebuild is not specified (it should be in our opinion normal or complete rebuild). Secondly, we do not understand why this statement applies only to the air/fuel ratio. It should be a general statement for primary measures and not only the air/fuel ratio for which interesting results could also be obtained for existing plant.		
97	Germany	5	5	2		40	353	BAT 40: the term "a limited number of short campaigns" is not specific enough	Define this term	For the implementation clarification is necessary
98	Austria					41	353	Delete for technique ii. starting: "Minimisation of the sulphur content ..." the last paragraph regarding its applicability starting: "The application of sulphur balance ..."	This does not regard the applicability and is not a consensus view of the TWG.	

Comment No.	Comments from (Forum Member)	Chapter No. Section No.			Chapter title	BAT	Page # (PDF version)	Comment description	Proposed amendment	Rationale
99	Austria					42	354	Change the applicability for the technique ii. starting: "Minimisation of the fluorine content ..." so that the applicability is called: "The technique is generally applicable. In specific cases, in particular for the production of opal glass, materials containing fluorides are used in the batch formulation."	The fluorine content can always be minimised or optimised, regardless the product. The specific sentence from chapter 5 of the Draft BREF Feb. 2011 shall be added.	
100	Austria					42	354	Delete the last paragraph starting: "The economic viability, waste water treatment ..." of the applicability of the technique called: "iv. Wet scrubbing"	As filtration systems scrubbers can well be installed after existing plants (but it will be done only where environmentally necessary). The eventually need for a waste water treatment plant after a scrubber cannot be an applicability restriction for a scrubber, if necessary. The quoted applicability restriction is not a consensus of the TWG!	
101	Austria					47	357	Add above the table the sentence called: "Where acid polishing is applied, a specific treatment of the resulting acid gases is required."	Essential text from chapter 5 of the Draft BREF Feb. 2011, which is more general and comprises all acid gas emissions arising from acid polishing.	
102	CPIV	5	6			0	358		Add the orange sentence: "Unless otherwise stated, the Bat conclusions presented in this section can be applied to all special glass manufacturing installations. Member State authorities may, for installations existing at the time of entry into force of these BAT conclusions, require that a BAT conclusion included in this section applies from the first rebuild of the furnace, the first major cold repair, or the first renewal of the air pollution control equipment where this is justified on the ground that earlier application of that BAT conclusion would lead to disproportionately higher costs compared to the environmental benefits."	When the BREF on Glass Manufacturing was put under revision in 2007 (Kick-off Meeting on Glass BREF review 16-18 January 2007) it was repeatedly stated by the Commission and confirmed in the latest Draft BREF on Glass Manufacturing (February 2011) that this BREF was to be revised under the scope of the IPPC Directive (96/61/EC) and not under the scope of the IE Directive (2010/75/EU) that was not published at that time. Based on this statement, the Glass Industry participated to the review of the BREF Glass Manufacturing with the spirit of the IPPC Directive, having in mind the flexibility mechanism left to the member states for the implementation of the BAT AEL and especially the timing for their implementation at installation level. In this context, no specific measure was foreseen in the Glass BREF for existing plants, compared to new plants. Furnaces lifetime can exceed 12 years. Therefore, it will not be possible for all existing furnaces to comply with all BAT Conclusions 4 years after their publication. See CPIV paper for a full discussion on this issue.
103	Germany	5	6	2		49	359	BAT 49: In this BAT different BATAEL are associated with different techniques for one subsector and one fuel type without giving reasons for this split in the applicability section.	Adjust the applicability section so that it is clear when only primary techniques can be applied and when secondary techniques must be installed.	It cannot be left to the transposing member states when they require the installation of secondary techniques and when only primary techniques are considered suitable. In the BREF a clear distinction must be made by adjusting the applicability section. If this is not the BAT cannot be adequately transposed into national law.
104	Austria					49	359	II. secondary techniques: Delete the whole text in the column called "Applicability" for SCR and SNCR and add for i. SCR the applicability called: "General applicable after abatement system (dedusting, desulphurisation)." and add for the technique ii. SNCR the applicability called: "The technique is applicable to recuperative furnaces" eventually: "and it may be applicable to new regenerative furnaces with split regenerators."	SCR: requires de-dusting (compatible with BAT range) and de-sulfurisation (compatible with lower end of BAT range), mainly for SO3 elimination in the glass sector; SCR is applicable after bag filters, but due to reheating requirement in this case it is usually not done. Again, the BAT conclusions must distinguish between applicable and "usually applied". SNCR: The Text cannot be completely derived from chapter 4 or 5 of the Draft BREF.	
105	France	5	6	2		49	359	"Full benefits are achieved at furnace rebuild, when combined with optimum furnace design and geometry" Firstly, the type of rebuild is not specified (it should be in our opinion normal or complete rebuild). Secondly, we do not understand why this statement applies only to the air/fuel ratio. It should be a general statement for primary measures and not only the air/fuel ratio for which interesting results could also be obtained for existing plant.		
106	Austria					55	363	Add above the table the following sentence: "Where acid polishing is applied, a specific treatment of the resulting acid gases is required."	See chapter 5 of the Final Draft from Feb. 2011, p. 389	
107	France	5	7	2		57	364	"Full benefits are achieved at furnace rebuild, when combined with optimum furnace design and geometry" Firstly, the type of rebuild is not specified (it should be in our opinion normal or complete rebuild). Secondly, we do not understand why this statement applies only to the air/fuel ratio. It should be a general statement for primary measures and not only the air/fuel ratio for which interesting results could also be obtained for existing plant.		
108	Germany	5	7	3		59	366	BAT 59: When transferring Chapter 5 into a legal document, it is absolutely necessary to avoid unclear statements which may open up the conclusions drawn (such as BATAELs). Therefore, concerns reported cannot be part of the BAT Conclusions.	Specify footnote 3 when transferring the BAT into a legal document since such an unclear statement cannot be implemented. The usually high priority of filterdust recycling and intensive use of external cullet should be emphasized here considering the environment as a whole and an additional BATAEL should be available.	When transferring Chapter 5 into a legal document, it is absolutely necessary to avoid unclear statements which may open up the conclusions drawn (such as BATAELs). Therefore, concerns reported cannot be part of the BAT Conclusions.
109	Austria					59	366	iv wet scrubbing: delete in the column applicability the text "after "the technique is generally applicable" starting with "within technical constraints e.g....."	As filtration systems scrubbers can well be installed after existing plants (but it will be done only where environmentally necessary). The eventually need for a waste water treatment plant after a scrubber cannot be an applicability restriction for a scrubber, if necessary. The quoted applicability restriction is not a consensus of the TWG!	
110	Austria					70	372	Delete the whole applicability for technique ii. (waste gas incineration) and iii (wet scrubbed) and replace them by "generally applicable"	See Chapter 4.6.2.2 and 4.6.2.4 of the Draft Glass BREF	
111	Austria	5	9	2		0	373	Add the following sentence from Chapter 5 Draft BREF Feb. 2011, p. 382 after the headline of 1.92 (Nitrogen Oxides from melting furnaces): "There are a number of techniques (e.g. SCR, SNCR) that can potentially achieve low-Nox levels which have not been applied to the sector because of technical and/or economic limitations."	Completeness; Relevance (high NOx concentrations from frit sector; long discussion in the final TWG meeting solved by this sentence); Consistency with other glass sectors	
112	France	5	9	2		72	373	"Full benefits are achieved at furnace rebuild, when combined with optimum furnace design and geometry" Firstly, the type of rebuild is not specified (it should be in our opinion normal or complete rebuild). Secondly, we do not understand why this statement applies only to the air/fuel ratio. It should be a general statement for primary measures and not only the air/fuel ratio for which interesting results could also be obtained for existing plant.	Add the following text as a general applicability issue for the group of techniques listed under "Combustion modifications": "Full benefits are achieved at normal or complete furnace rebuild, when combined with optimum furnace design and geometry"	
113	Germany	5	9	2		72	374	BAT 72: The values of table 5.62 are extremely high and much higher than the BATAEL given in the GLS BREF of 2001. There are no plant-specific data sets about such installations in chapter 4, only aggregated data in chapter 3.	Since there is no adequate proof for the BATAEL in this BREF the BATAEL must be deleted.	BATAEL must be derived from plant-specific data. This is not the case for this BAT.
114	CPIV, FEVE	5	10			0	377	It is necessary to inform the reader of BAT Conclusions that additional information can be found in the Glass BREF.	A disclaimer is required at the start of this section. "The information provided in this annex only provides a very brief summary of the information contained within the BREF Note. For a full discussion of the techniques, the pros and cons of the techniques and a consideration of cross media effects and economic factors please refer to the relevant sections of the BREF."	There is a complete lack of referencing to the BREF document in the BAT Conclusion document. Reference to the BREF is necessary here to guide the reader to the full information. It is an impossible task to summarise a 447 pages document in a 60 pages document. Any reader of the BAT Conclusion should also look into the BREF to get a real understanding of the manufacturing process, the abatement methods and technologies, the economics and the full environmental consequences
115	Germany	5	10	9		0	381	There are other techniques for reducing VOC emissions	Add other techniques for VOC reduction	Give full picture of techniques.
116	Germany	7				0	398	Only 2 split views are listed here although there was no final agreement upon the bureau's assessment of the split views. Some member states put a split view on the BATAEL for secondary techniques which was not accepted by the bureau. We still do not agree with the bureau's assessment and therefore the split view (< 200-500 mg/Nm3) has to be integrated again.	Add the split view on NOx for secondary techniques	In the BREF the split view is missing and in the BAT conclusions although in the opinion of the commission no split view will be taken into account we are still of the opinion that the range should be <200-500 mg/Nm <sup>3</sup> .