Comment No	Chapter No / Section No					Page	Comment description	Proposal for modification	Rationale
1						xxx	The current text indicates that "this document does not address the following: - combustion of refinery fuels **in refineries**; this is covered by the BAT conclusions for the refining of mineral oil and gas"	It should be replaced by "this document does not address the following: - combustion of refinery fuels **at the refinery site**; this is covered by the BAT conclusions for the refining of mineral oil and gas"	The BAT conclusions for the refining of mineral oil and gas have been adopted on 9 October 2014 as implementing decision (2014/738/EU). Amongst the activities covered : Combustion units for energy production : combustion units burning refinery fuels, excluding units using only conventional or commercial fuels. For the purpose of these REF BREF BAT conclusions, the following definitions apply : 1) Refinery fuel : Solid, liquid or gaseous combustible material from the distillation and conversion steps of the refining of crude oil. Examples are refinery fuel gas (RFG), syngas and refinery oils, pet coke and 2) Combustion unit : Unit burning refinery fuels alone or with other fuels for the production of energy **at the refinery site**, such as boilers (except CO boilers), furnaces, and gas turbines. Replacing the words "**in refineries**" by "**at the refinery site**" in the scope of the LCP BREF would ensure full alignement of the scopes of both BREFs and allow permitting authorities and operators of unit firing refinery fuels **at the refinery site** (connected to the energy system of the refinery) to unambiguously refer to the REF BREF to regulate them. If the scopes of the LCP BREF and REF BREF would not be fully aligned, the combustion units not located "in refineries" but well located **at the refinery site** (connected to the energy system of the refinery) although firing refinery fuels originating from the refinery might not be regulated under the REF BREF BAT conclusions, nor the LCP BREF BAT conclusions, nor any other BREF BAT conclusions (no section dealing with refinery fuel combustion).
	10					740			

2	1	3	2	2		22	The paragraph included in page 22 of the LCP BREF Final draft: *Data collected for the review of this document indicate the fuel-bound nitrogen to be < 50 mg/Nm3 in random sampling at power plants using iron and steel process gases, whilst typical fuel-bound nitrogen levels reported in the IS BREF (Table 2.6) are between 200 mg/Nm3 and 800 mg/Nm3"* could be misunderstood by the reader without the specific contextual information (e.g. %COG input and all the technical details and justifications provided in chapter 7.3 of combustion of iron and steel process gases of the LCP BREF Final draft).	Suggestion is to delete the paragraph	The information included in that specific part of the BREF doesn't gives add value to the BREF and could be misunderstood. Editorial
3	3	1	1	4		100	The paragraph included in page 100 of the LCP BREF Final draft: "*Combustion plants located in iron and steel facilities aim at using the available process gases as much as possible",* should be complemented with the update of BAT 4 on Fuel choice and some technical comments included as well in chapter 7.3.3 of combustion of iron and steel process gases (page 646 and 649 of LCP BREF Final draft), in order to explain the particularities of the sector.	The paragraph should be read as follows: "Combustion plants located in iron and steel facilities aim at using the available process gases as much as possible, taken into account that the sector is specific as the composition and quantities of fuels/process gases that are combusted may be highly variable. Process gases are directed to the combustion plants depending on their availability, as they are distributed in order of priority to the consuming plants in the steelworks"	The proposed update reflects the particularities of the sector and is aligned to the update of BAT4 - Fuel choice.
4	5	1	3	6	1	448	The emission levels provided give a wrong picture for Oak Grove.	Change: "***Emissions data from 2012-2014 indicates that Oak Grove has consistently achieved a level of 60mg/NM³ through retrofitting with SCR and one pulverised unit sized 556 MWe at Sandow retrofitted with SCR in 2009***, showed stable yearly average levels of NOX emissions of about 80–90 mg/Nm3.	See submissions in BATIS. CEMs data suggests that the yearly average emissions of Oak Grove are at 60mg/Nm³ . It is important that these levels are reported in the main text
5	6	3	3	2		538	Figure 6.11: The data shown for the NH3 range is not the 95 % percentile.	Mention **yearly** NH3, TVOC and CO besides NOx in the text of the graph legend.	Editorial

6	6	3	3	3		540	DSI and SDA should not be applicable to plants operating < 500 hr per year	Table 6.13: Add an applicability restriction for DSI and SDA techniques in column "Technical considerations relevant to applicability": " *not applicable to plants operating < 500 hr per year* " Chapter 10.3.2.3 BAT 38 table: Add an applicability restriction for DSI technique BAT 38 b " not applicable to plants operating < 500 hr per year "	See page 820 (chapter 10.8.4) of the LCP BREF Final Draft (June 2016) describing that DSI and SDA are equipped with either ESP or bag filters . Note in section BAT 39 page 786 is given a applicability restriction of ESP and bag filters such as " *Not applicable to combustion plants operated < 500 h/yr* ". I.e. same applicability restriction should apply for DSI and SDA. The only diesel engine plant equipped with FGD in the BATIS reference database was the Maltese plant (362, 363, 364, 365), this plant is a baseload plant, see "Euromot Position 23 January 2015 Comments on Maltese Plant Data Submitted by EEB (EEB) on December 2014" at linkhttp://www.euromot.org/download/54da4c2cb49b86c3cbe73ca9 also submitted to BATIS in January 2015. Page 6: "Base load: plant/s run for 24 hours; wo-shift operation: Plant/s run for 16 to 18 hours per day". Notice also text " Most of these faults are a result of cyclic operation. Continuous operration could have reduced such faults". I.e. DSI is NOT suitable for short term operating plants (in Malta a DSI FGD type was used). See page 820 (chapter 10.8.4) of the LCP BREF Final Draft (June 2016) describing that DSI and SDA are equipped with either ESP or bag filters . Note in BAT 39 on page 786 is given a applicability restriction of ESP and bag filters such as " Not applicable to combustion plants operated < 500 h/yr. "I.e. same applicability restriction to apply for DSI.
	10	3	2	3		786			
7	6	3	3	3		541	The SO2 emission of HFO diesel engines should be **consistent with the sulfur content** reported for the fuel.	Change description of Figure 6.12: SO2 emissions from HFO- and/or gas-oil-fired engines below 280 mg/Nm3.	Plants 430 and 428-6 have both reported use of 100% fuel oil with sulphur content > 0.9 wt-% and no flue gas cleaning. SO2 Emission data thus appear to be inconsistent with the reported sulphur content and hence this data should not be presented as representative of "well performing" reference plants.

8	7	1	1	2	2	556	Methods for liquid fired engine to be taken away (chapter is for gaseous fuel)	Remove 2. bullet "introducing liquid water by direct injection. Evaporation of the water cools the fuel-air mixture"	Comment from submission of one industrial organisation of March 14th 2016 was accepted by EIPPCB but only partly implemented (The text not fully clear and thus not fully understood ?). There was **not awareness** of any gas engine applying direct injection of water for NOx reduction. In Final LCP BREF draft chapter 3.2.2.3.10 is stated " *..Direct water injection* ***can only be applied in some liquid-fuel-fired engine types; this technique is used in some shipping installations only***. " in regard with direct water injection !
9	7	1	1	2		555	The first sentence of the paragraph is clumsy.	Suggestion:The emissions from the combustion of natural gas are principally NOx and CO, with mostly negligible SOx and dust emission.	Editorial
10	7	1	2	2		567	Table 7.4 - The electrical efficiency figures are "confusing"	Suggestion:Either use a point to separate the figures or title the column as a % and include as 38.5% for example.	Editorial
11	7	1	3	2	2	600	Table 7.14 SCR retrofit costs for a 375 MWe CCGT. The table of costs does not include a reference date. Since prices are subject the international market movements and currency variations the date should be included.	The date 2011 to be included.	Editorial
12	7	1	3	2	3	607	Economics of the SCONOx system. Since this text is in black it relates to the current BREF under revision. These data are therefore relatively old and there is again no reference date for the costs.	The date 2000 to be included.	Editorial
13	7	1	3	2	5	614	table 7.16 footnote inserted "This NOx .. ideal conditions .. new and fresh catalyst .." Footnote to be extended and also cover the very low ammonia slip ranges shown in table	Table 7.16: Add NH3 to NOx in the footnote and associate footnote also to *(NH3)* cells.Text to read: "This NOx and associated NH3 levels are reached .."	Catalyst condition has a big impact on achievable NOx and NH3 slip levels, a worn catalyst will also emit a higher NH3-slip.
14	7	1	3	2	5	615	The conclusions of the DK stady (DK Study - 2007) are to be better reflected in the text, in partiuclar that "*Using the catalyst experience obtained in this study, and extrapolating to a higher*	**Text:** "*Reduction efficiencies of about 85 % could be achieved in 10 000 hours of operation, with a decrease of 10 percentage points in the catalyst reduction efficiency after this period of*	Euromot comment 15 submission March 14th 2016 was partially accepted by EIPPCB but misunderstood. 1) Denmark is giving some emission species **expressed at** a 30 % **reference efficiency** and final project emission limit depending on the

							number of operation hours, it has been estimated that the majority of the Danish gas engines will be able to comply with an emission target of 20 mg/m3 @ 5 % O2 and 30 % efficiency. The extrapolation is primarily sensitive to the rate of decay on catalyst activity at higher operation hours.." (i.e big uncertainty exists). This should also be converted from the 30 % reference efficiency (this is a reference point used for the emission expression, NOT the efficiency of the engines in the study) to a typical efficiency of a modern gas engine, see text proposed.	*operation. Formaldehyde emission levels of between 3.8 mg/Nm3 and 7.5 mg/Nm3 (15 % O2) could be estimated for operating cycles between 20 000 hours and 40 000 hours, with a catalyst with one or two layers, depending on the initial level of emissions at engines w**ith a typical electrical efficiency of about 30 %.***"**to be corrected as:** " *Depending on the type of catalyst used, reduction efficiencies of about 85 % for one catalyst type and 40 % for another catalyst type could be achieved over 10 000 hours of operation; after this period of operation, the catalyst reduction efficiencies had decreased respectively by 10 and 20 percentage points. However, the plant in the field tests operated according to the liberalized power market with a large amount of start and stops showed catalyst degradation faster than above mentioned. Final extrapolation of the test results indicated that formaldehyde emission levels of between 3.8 mg/Nm3 and 7.5 mg/Nm3 (15 % O2) could be estimated for operating cycles between 20 000 hours and 40 000 hours with a catalyst with one or two layers, depending on the initial level of emissions given at engines electrical reference efficiency of 30 %. This translates in emission levels between 6 mg/Nm3 and 11 mg/Nm3 (15 % O2) for an engine electrical efficiency of 44 %. The study concluded that majority of the Danish gas engines would be able to emit less than 20 mg/m3 @ 5 % O2 and 30 % efficiency, corresponding to less than 11 mg/Nm3 @ 15 % O2 and 44 % electrical efficiency*".	actua/reall engine efficiency is scaled from this - see text below. E.g. page 11 of the DGC report (DK Study - 2007): "*The proposed Danish emission limit for formaldehyde is seen to be strict compared to the **German TA Luft (2002)** emission limit for gas engines on **60 mg/m3 @ 5 % O2. The TA Luft value translates to approximately 45 mg/m3 @ 5 % O2 and 30 % efficiency for a typical Danish engine with 40 % efficiency.** ...* " 2) DK study page 60: " .. ***One type of** catalyst showed 95 % decreasing to 85 % formaldehyde reduction after 10.000 hours of operation. **The other type of** catalyst showed a lower degree of oxidation, from 60 % in the beginning to 40 % at 10.000 hours of operation* .." 3) DK study page 22:. "..T*he Hjortebjerg catalyst activity has decreased to 85 % formaldehyde reduction **within 5500 hours** of operation* .., note this was also of catalyst type I (Johnson Matthey) which in the tests showed the highest reduction rate. Page 39: " *..At site Hjortebjerg a change in plant operation strategy has occurred during the field-test period. Hjortebjerg has **changed to the liberalised market for power causing a larger number of starts and stops and fewer operation**hours*. .." 4) DK study page 5: **Summar**y " .***Using the catalyst experience obtained in this study**, and extrapolating to a higher number of operation hours, it has been estimated that the majority of the Danish gas engines will **be able to comply with an emission target of 20 mg/m3 @ 5 % O2 and 30 % efficiency**. **The extrapolation is primarily sensitive to the rate of decay on catalyst activity at higher operation hours. ..***" I.e. at **a 44 % electrical efficiency:** corresponds to about 11 mg/Nm3 (15 % O2)

15	7	1	3			573	In the last paragraph it is included *"Therefore, in order to avoid repetition, for those general techniques already described in Chapter 3, only the additional information that is specific to the combustion of iron and steel process gases is reported here in synthesis tables"*	To to be corrected replacing "specific to the combustion of iron and steel process gases" by "specific to the combustion of natural gas"	Chapter 7.1.3 refers to Techniques to consider in the determination of BAT for the combustion of natural gas in boilers /engines /gas turbines and not to iron and steel process gases. Editorial
16	7	1				553	Ahead of the first paragraph there should be a general introduction to the chapter to indicate the major subdivisions, i.e. natural gas, bio-gas, iron and steel process gases and crude natural gas on offshore platforms.	Suggestion: This chapter considers the combustion of natural gas, biogas, iron and steel process gases and crude natural gas on offshore platforms.	Editorial
17	7	3	1	1		623	In relation to the number of European plants that submitted data for the LCP BREF review. It is included 56 plants combustion plants firing iron and steel process gases	Suggestion is to consider 61 plants as combustion plants firing iron and steel process gases.	Suggestion is to revise the number of the European plants from I&S (see as well page 623 LCP BREF Final Draft) where it is included 56 European plants and page 859 Chapter 12 where it is included 62 plants Editorial
18	7	3	1	2		627	In the paragraph related to SO2, it is included *"Reported levels in the data collection show H2S levels in the COG between 15 mg/Nm3 and 300 mg/Nm3 for the year 2010 [LCP TWG 2012]. The total sulphur load in COG is normally in the range 350 mg/Nm3 to 780 mg/Nm3. In some plants, higher levels of total S have been reported in the COG [EUROFER - 2013]"*	The paragraph should be read as follows: *Reported yearly average levels in the data collection show H2S levels in the COG between 15 mg/Nm3 and 300 mg/Nm3 for the year 2010 [LCP TWG 2012]. The total sulphur load in COG is normally in the range 350 mg/Nm3 to 780 mg/Nm3, but could be higher due to the presence of organic sulphur compounds. In some plants, higher levels of total S have been reported in the COG [EUROFER - 2013]"*	Reported levels corresponds to the averages of the year in some plants, and situation could be different on different averaging period as for example daily basis (due to fluctuations in the composition under I&S BAT conclusions) Suggestion is to align as well the paragraph with the comment included in the LCP BREF final draft on page 622, taken into account that the total sulphur levels in COG could be higher that range 350 mg/Nm3 to 780 mg/Nm3 due to the presence of organic sulphur compounds, which can add a further 200-300 mgS/Nm3 (I&S BREF 2012) Editorial
19	7	3	2	2		631	In the last paragraph it is included "..For the 43 European plants that submitted data for the LCP BREF review.."	Suggestion is to consider 61 plants as combustion plants firing iron and steel process gases.	Suggestion is to revise the number of the European plants from I&S (see as well page 623 LCP BREF Final Draft) where it is included 56 European plants and page 859 Chapter 12 where it is included 62 plants Editorial

20	7	3	2	3		639	Last paragraph refers to Figure 7.45 (daily data for a combination of three CCGT) when should be refer to Figure 7.46	Suggestion is to make reference to Figure 7.46 instead Figure 7.45	Editorial
21	7	3	2	3		641	Figure 7.47: Relationship between SO2 emissions and the relative thermal inputs to the boiler of BFG and COG using hourly average data over a three-month periodThe data in the figures relates to NOx instead SO2 (The figure in the previous draft was correct)	The current figure is replaced by the correct figure from the previous version.	Editorial
22	7	3	3	2	1	650	The reference to ">27% COG" in the first paragraph should be updated taken into account the Split-views with a positive assessment of technical rationale according to EIPPCB's report have been included in Chapter 12 of the LCP BREF Final draft	Suggestion is to replace >27% COG to >32%COG following the EIPPCB's split-views assessment report	Suggestion is to update the reference following EIPPCB's assessment report. Editorial
23	7	3	3	3		654	The first sentence of the paragraph: "This graph does not mention the type of technique used to control the SO2 emissions." could be considered an oxymoron.	The sentence to be replaced with the following: "Crossing this set of data, this does not show the technique used to control SO2, and the data collected in 2012…"	Editorial
24	7	4	3	2		664	Comment is related to Table 7.27, 1st line devoted to Cogeneration of heat & power (CHP); column cross-media effects. Inappropriate entry for cross-media effects	Delete text 'sludge that needs to be dewatered to be disposed of" in the column cross-media effects	D1 comment #44 to remove the sludge text was "accepted and processed" but the text remains. We cannot understand why sludge would form and there is no mention of sludge in the referenced section 3.3.4.2. Our comment was re-submitted to the LCP BREF version dated February 2016, it is written that the comment was accepted, but the change has not been made.
25	10	1	1			748	BAT 1 (vi) word order	Amend to read: " review, by senior management, of the EMS and its continuing suitability, adequacy and effectiveness ~~by senoir management~~"	Editorial clarification, as written is suggests the assessment will only be of how suitable, adequate and effective the EMS is when used by senior management, not the whole system as used by all staff at the installation

26	10	1	1			748	BAT 1 (xiii) wording. The details in BAT 1 all relate to the EMS, so to require the EMS to contain an E&SMS seems strange wording, the intent is to have operators systematically assess uncontrolled/unplanned emission events.	Amend to read "a systematic method to identify and deal …"	Editorial
27	10	1	3			756	BAT 4 table: Those techniques that are "Generally applicable" should be listed first in the table since they are the most commonly applied and hence of the most interest.	Promote "Technique e" to second in the list. Note that this comment applies to all tables throughout the BAT conclusions - not just the occurrence here.	Makes it clearer which techniques are likely to be used on an installation.
28	10	1	3			756	The wording of the applicability text for 'Fuel Choice' is confusing with two adjectives (various-suitable). The applicability restriction whould be clearly associated with the combustion of process fuels in industrial sites where process fuels are generated	BAT4 b, applicability:"Applicable within the constraints associated with the availability of suitable types of fuel with a better environmental profile as a whole, which may be impacted by the energy policy of the Member State, or by the integrated site's fuel balance in the case of combustion of industrial process fuels generated at industrial sites."	Editorial calrification to avoid confusing double adjectives. The meaning of "integrated site's fuel balance" is vague and weakens the BAT on fuel choice because it inserts another applicability restriction which is very broad. The reference to "integrated site's fuel balance" was requested by two industrial organisations and only related to **industrial sites where process fuels are generated (**see BP page 284 and point3.1 in page 283)
29	10	1	3			756	BAT 4 prescribes the techniques that are BAT (Fuel blending and mixing, Fuel choice etc), however, in accordance with Article 15(2), ELVs shall be based on BAT, without prescribing the use of any technique or specific technology. It is therefore inappropriate for the BATC to be prescriptive. This comments is also applicable to BAT 7, 10, 11, 14, 17, 18, 19, 21, 22, 23, 26, 28, 29, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43 44, 46, 47, 48, 49, 51, 52, 53, 54, 56, 58, 59, 60, 61, 62, 65, 66, 67, 69, 70, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85	The wording is amended to read "In order to improve the general environmental performance ... , BAT is to ensure ~~an~~ optimised combustion and to use an appropriate combination of techniques below." The rest of the standard text in BAT conclusions has been kept.	The text on combination of techniques is standard text in BAT conclusions

30	10	1	6			762	BAT 11 table: No need to repeatedly say "Generally Applicable"	Merge the cells which have the same applicability statement and just make one statement. Note that this comment applies to all tables throughout the BAT conclusions - not just the occurrence here.	Editorial
31	10	1	6			761	b) Technique: Dry Bottom Ash Handling System Description: Dry, hot bottom ash falls from the furnace onto a mechanical conveyor system and is cooled down by air or water in a closed cycle. No water is used in direct contact with the ash for cooling or transportation.	b) Technique: Dry Bottom Ash Handling System Description: Dry, hot bottom ash falls from the furnace onto a mechanical conveyor system and is cooled down by ambient air. No water is used in the process.	In case of Pulverized Coal Fired Boilers, the Dry Bottom Ash Handling does not use any single drop of water to cool down the bottom ash.
32	10	1	6			763	Misaligments persist between the following two sections of the Final draft:- page 763, BAT 11, table 10.1, where BAT-AELs for emissions to water refer to 'daily averages' (no definition agreed); - page 747, definition agreed for the averaging period associated to BAT-AELs for emissions to water (i.e. 24-hour flow-proportional composite samples. Time-proportional composite samples can be used provided that sufficient flow stability can be demonstrated).	Modify under General Considerations, BAT-AELs for emissions to water: 'The BAT-AELS refer to daily averages, i.e. to 24-hour flow-proportional composite samples.'	According to the definition agreed on page 747, BAT-AELs for emissions to water should refer to '24-hour flow-proportional composite samples' or 'time-proportional composite samples' (provided that sufficient flow stability can be demonstrated), and not to 'daily average', for which no definition was agreed in the section 'General considerations'. It should be also underlined that the monitoring requirements associated with BAT-AELs for emissions to water given in BAT 3 quater includes a frequency of once per month for water pollutants.
33	10	1	8			765	BAT 14 table: Noise abatement (technique d) can be confused with technique e (noise control equipment)	Change Technique d to read "Noise attenuation"	Editorial
34	10	1				748	First sentence is inconsistent with other recently published BAT conclusions and is misleading since the *BAT conclusions are more than "mentioned*."	Amend to read: "*The fuel-specific BAT conclusions included in Sections 10.2 to 10.7 apply in addition to the general BAT conclusions ~~mentioned~~ in this section*."	Consistency with other recently published BAT conclusions - e.g. see equivalent text used in NFM BAT conclusions
35	10	2	1	2		766	BAT 18 wording is inconsistent with other similar BAT statements (e.g. BAT 17).	Amend BAT 18 to read: "*In order to increase the energy efficiency of the combustion of coal and/or lignite ~~combustion~~, BAT is to use an appropriate combination of the techniques in BAT 7 and below*."	Editorial

36	10	2	1	2		766	Description of 'Dry bottom ash handling' is grammatically incorrect.	Amend description of 'Dry bottom ash handling' to read: "*Useful energy is recovered from both the ash~~es~~ reburning and ash~~es~~ cooling"*	Editorial
37	10	2	1	3		768	BAT 19: Emissions cannot be both prevented and reduced, if prevented no further reduction is possble, and if reduced, then prevention has not been achieved. The "and/" is not required in the sentence.	Amend to read "In order to prevent ~~and/~~or reduce …" Note this comment applies to all such statements throughout the BAT conclusions (BAT 21, 26, 28, 30, 32, 33, 36, 37, 38, 39, 41, 42, 43, 46, 47, 48, 49, 52, 53, 54, 56, 60, 61, 65, 74, 75, 76, 77, 83) - not just the occurrence here.	Editorial
38	10	2	1	3		769	Table 10.3; Footnote 11 is potentially confusing as it could be read that the BAT-AEL values are indicative of plants operated <500h/yr; when in fact the opposite is meant.	Amend footnote 11 of Table 10.3 to read: "*For plants operated < 500 h/yr, these levels are indicative*'. Note this comment applies to all such footnotes throughout the BAT conclusions - not just the occurrence here.	Editorial
39	10	2	1	3		769	Relocation of footnote 7 in table 10.3	footnote 7 only applies to >= 300 MWth coal fired PC boilers.	The extension of the applicability of footnote 7 to lignite fired PC boilers was not discussed within the TWG and should thus be made undone.
40	10	2	1	4		770	BAT 21 table: Technique c Duct sorbent injection, description should match the wording for technique i	Amend to read "The technique can be used…"	Editorial
41	10	2	1	4		771	BAT 21, Table 10.5, footnote (6) should be amended considering the case of existing plants already applying wet abatement system for SO2 reduction that couldn't achieves so high performances in all operating conditions, considering limitations for further retrofitting due to techno-economic reasons.	Table10.5 note (6) The lower end of the range can be achieved with the use of low sulphur fuels in combination with most advanced wet abatement systems design	As data in chapter 5.1.5.3 figure 5.32 demostrate, lower BAT-AEL values could be achieved just by recent plants fitted with most advanced design of wet FGD BAT 21 (f), i.e. adequate absorber loops L/G ratio, contact time in reactor and reactivity (purity and morphology) of limestone supplied: this is the actual outcome of final TWG discussion that note (6) doesn't express.
42	10	2	1	6		774	Tables 10.8 and 10.9 are very similar and repetitive	Consolidate Tables 10.8 and 10.9 into one table.	Editorial

43	10	2	2	2		774	Table 10.10 footnote 4 - use of words "in case" is grammatically incorrect	Amend footnote to read: "T*hese levels may not be achievable* ***if*** *the potential heat demand is too low."* Note this comment applies to all such footnotes throughout the BAT conclusions - not just the occurrence here.	Editorial
44	10	2	2	2		774	It should be clarified whether there is a link between footnote on Energy efficiency for biomass # 5 and 1 bis. As we understand, they can be combined, but the one is not a prerequisite for the other. This means that the resulting energy efficiency for a plant < 150 MW burning high moisture fuel and equipped with cooling system or geographical location can be down to 28%. Is that correctly understood?	Change footnote 1 bis to : "The lower end of the range may correspond to cases where the achieved energy efficiency is negatively affected (up to four percentage points) by the type of cooling system used or the geographical location of the unit". Change consistently footnote 1 in Table 10.2 (coal/lignite).	Editorial
45	10	2	2	2		774	In the section for solid fuel biomass and peat AEEL, the footnotes of table 10.10 refer to fuel moisture content allowing for less efficiency when using high-moisture fuel. However there is no definition of high moisture fuel.	To read the footnote 5 in the Table 10.10: The lower end of the range may be down to 32 % in the case of units of < 150 MWth burning biomass fuels with >55% of moisture.	With a higher level of moisture, the stack loss is higher. Normally wood chip already has a moisture content in range of 45-55% (Straw has only up to 25% moisture content). Therefore it should be clarified that high-moisture fuels are those containing above 55% of moisture.
46	10	2	2	6		778	BAT 30 is differently worded to BAT 23 and confusingly lists specific techniques before those techniques that provide co-benefit.	Harmonise the structure of BAT 23 and BAT 30.	Editorial
47	10	3	2	2		785	Texts have to be clear - thus text to be slighly changed	**Text** below table 10.20 "As an indication the yearly average CO emission levels and the average TVOC emission levels over the sampling period for new or existing .. " **to be changed to** "As an indication, the yearly average CO emission levels and the average over the sampling period for TVOC emission levels for new or existing .. "	Text below table 10.20 states "*As an indication the yearly average CO emission levels and the average TVOC emission levels over the sampling period for new or existing* .. " In table 10.20 (for NOx) "Daily average or average over the sampling period" is given besides yearly average values. In order to not confuse reader intention of chapter 6.3.3.2, figure 6.11 or chapter 6.2.3 table 6.4 showing yearly average measured values for amongst all TVOC a text change is needed.
48	10	3	3	2		788	Table 10.24 has no emission units.	Add 'mg/Nm^3'	Legal clarity

49	10	3	3	3		789	Table 10.25 - no need for the row titled 'New plant or existing plant' as this is the totality of plants.	Delete "New plant or existing plant"	Editorial
50	10	4	1	1		791	Table 10.26 - some of the row are superfluous	Delete rows titled: Gas engine, Gas fired boiler and gas turbine.	Editorial
51	10	4	1	1		791	In table 10.26, row "gas turbine" (below "Open Cycle Gas Turbine), the explicit reference to the thermal input of '≥ 50 MWth' has been omitted. (see the pre-final Draft, February 2016)	In table 10.26, for "gas turbine" (below "Open Cycle Gas Turbine), the reference to '≥ 50 MWth' need to be restored.	It is necessary to point out again that the BAT-associated energy efficiency levels (BAT-AEELs), finally agreed, should refer to single combustion unit, each with rated thermal input ≥ 50 MWth. To this end, e.g. the energy efficiency data provided for mechanical drive gas turbine were then reported only for single turbine ≥ 50 MWth. In order to avoid distorted implementation of the above mentioned BAT-AEELs, it is deemed necessary to explicitly reintroduce the reference to '≥ 50 MWth' for "the open cycle gas turbine".
52	10	4	1	1		790	BAT 44 table - first column is empty	add "a" in the first column of the BAT44 table	Editorial clarification ("a" already appears in the first column of the BAT44 table)
53	10	4	1	2		794	BAT 49 table 10.27 Footnotes 12 and 13	To apply footnote 12 also to existing CCGT plants and to apply footnote 13 also to to existing OCGT plants.	Currently, footnotes 12 and 13 only apply to new plants. Older plants that have or could be retrofitted to high levels of efficiency should not be penalised.
54	10	4	1	2		794	Table 10.27. Typo.	In table 10.27, row "Existing gas turbines for mechanical drive applications", the ratio "h/hr" should be revised as "h/**yr**"	The appropriate ratio includes year, not hours.
55	10	4	1	2		795	BAT 50 - wording	Amend text to read: "BAT is to ensure ~~an~~ optinmised combustion and/or to ~~apply~~ use oxidation catalysts"	Editorial
56	10	4	1	2		794-795	Inconsistency persists between the first sentence of the paragraph introducing the indicative CO yearly average values for new and existing plants and the applicability clause reported in the second and fifth bullet points.	Review all the notes related to indicative CO levels after the table on NOX emissions throughout the document to make them applicable only for new plants or exisitng plants operated >=1500 h/yr. For BAT 49 in particular, remove the ">500h" statement in bullets 2 and 5 (>1500h condition already included before the bullets)	As indicated in the first sentence of the paragraph introducing the indicative CO yearly average values, properly consistent with footnote 7 of table 10.27, CO yearly levels should apply to existing plants when operated ≥ 1500 h/yr. Thus, with such an introductory specification, the references to "≥ 500 h/yr" in the second and fifth bullet points would result in an unclear determinations.

57	10	4	2	2		799	Split-view number 11 in relation to load modes: combustion plants that operate less than 500 and between 500 and 1500 operating hours per year. Footnotes BAT 52,53 (Table 10.32), BAT56 (Table 10.34) and BAT58 (Table 10.36) has not been assessed by EIPPCB, and refers that the dissenting view was expressed after Final TWG meeting.	Suggestion is to add in the footnotes of the table 10.32 (BAT54), table 10.34 (BAT56) and table 10.36 (BAT58) reference to the conclusions of the Final TWG meeting in relation to BAT AELs of combustion plants that operate less than 500 and between 500 and 1500 operating hours per year in the same way as other sector. Load modes (general issues). Distinguish the following 2 categories:Combustion plants that operate less than 500 operating hours per year (ex-"emergency load mode"). For this plant category: set proposed daily average or average over the sampling period emission level as indicative. Do not set yearly average emission levels. Combustion plants that operate between 500 and 1500 operating hours per year (ex-"peak load mode"). For this category: keep daily average or average over the sampling period BAT-AELs as proposed. Proposal to ad the following footnotes, as follows: a) *These BAT-AELs do not apply to combustion plants operated less than 1500 hours per year* *b) These levels are indicative for combustion plants operated less than 500 hours per year*	The split view refers to footnotes of tables 10.32,10.34 and 10.36 referring to BAT52,53,56 and 58 and on that proposal of BAT were raised split-views during the Final TWG meeting, so should be evaluated as well.This is based on the following rationale, among others:- The I&S LCPs do not operate in the previously defined "emergency load mode" or "peak load mode". However the currently defined categories are a different approach, due to the consideration of operating hours per year.- Depending on coke, iron and steel production the quantity derivation of the process gases which has to be utilized is high. Therefore there are existing I&S LCPs which have to use the momentary surplus of process gases and they have < 500 or < 1500 h of operating hours per year.- These stand-by I&S LCPs are also in operation if another LCP in the same I&S work is maintained or in case of higher demand on heat during the winter period.- The conclusions of the Final TWG meeting in relation of combustion plants that operate < 500 and between 500 and 1500 operating hours has to be taken as a general approach of the TWG meeting for all the fuels (fair-level playing field for I&S process gases as other fuels).This point is considered in accordance to point 1 of section 1.3 of the BREF guidance (2012/119/EU) in relation to IED Art 13 Forum opinion
58	10	4	2	3		800	BAT 56 - Technique b Description. Confusing text where it says: "*Use, as much as the iron- and steel-works allow it, of:..*"	Amend to read: "*To the extent allowed by the iron- and steel-works, maximise the use of:..*" Also text "and auxiliary fuels such as" needs indent reduced to line up with main bullet points.	Editorial
59	10	4	3			802	BAT 59 Description of 'Load control' - incorrect to use the word 'pollution' as this is an effect.	Amend to read: "*Operate multiple generator or compressor sets at load points which minimise ~~pollution~~ emissions"*	Editorial

60	10	5	1	5		807	BAT 67 technique e and d in previous version where grouped in the same line with reference to BAT 66 for applicability Now dry and semi-dry system are written as generally applicable which is not in line with BAT 66 which says that “Generally applicable to new combustion plants. Applicable to existing combustion plants within the constraints given by associated with duct configuration, space availability, as well as and as well chemical installation safety “	for technique d modify applicability to "See applicability in BAT 66"	To be in line with the compiled conclusions on the final TWG meeting (otherwise technique d becomes "generally applicable" which was not decided as such in the Final Meeting).
61	10	5	1			804	Load modes	Add footnotes in Table 10.39, 10.40, 10.41, 10.42 "these levels are indicative for plants operated < 500h/yr. " for units operated < 1500 h/yr yearly BAT-Aels do not apply".	Chemical plants have back-up boilers to allow maintenance on the main boilers. one industrial organisation has made several attempts to raise this issue but was not heard due to a lack of time. This topic was not discussed for combustions of chemical fuels. Virtually all BAT-AELs in the Final Draft include these footnotes: e.g HFO/GO, Natural Gas However such footnotes are not included in tables 10.39, 10.40,10.41, 10.42.Operators to comply with the LCP BREF may be forced during this short period to use other fuels, and flare the process fuels that is produced.
62	10	6	1	1		809	BAT 70a - Description of 'Waste pre-acceptance and acceptance' is confusing	Amend to read: "Acceptance criteria are set for critical parameters such as heating value and the content of water ~~content~~, ash ~~content~~, chlorine and fluorine ~~content~~, sulphur ~~content~~, nitrogen ~~content~~, PCB, metals (volatile (e.g. Hg, Tl, Pb, Co, Se) and non-volatile (e.g. V, Cu, Cd, Cr, Ni)), and phosphorus and alkali ~~content~~ (when using animal by-products).	Editorial
63	10	6	1	1		810	BAT 70d - Applicability assumes only option is to undertake waste pre-treatment on site, this is not the case, and indeed, pre-treatment is frequently undertaken at another site	Replace statement with "see applicability in Waste Treatment and Waste incineration BREFs"	Legal clarity

64	10	6				809	Word order in second paragraph	Amend text to read "When waste is co-incinerated, the BAT-AELs in this section apply~~, when waste is co-incinerated,~~ to the entire flue-gas volume generated."	Editorial
65	10	6				809	BAT 70 prescribes the techniques technique 70a in all cases. However, in accordance with Article 15(2), ELVs shall be based on BAT, without prescribing the use of any technique or specific technology. It is therefore inappropriate for the BATC to be prescriptive.	Wording of the BAT statement to be amended as follows: "BAT is to use technique (a) below and a combination of the techniques in BAT 4 and/or of the other techniques below"	In accordance with Article 15(2), ELVs shall be based on BAT, without prescribing the use of any technique or specific technology. Prescriptive BATC do not allow for any future developments of new techniques. In addition, the details relating to BAT in the General Considerations on page 3 states "The techniques listed and described in these BAT conclusions are neither prescriptive nor exhaustive. Other techniques may be used that ensure at least an equivalent level of environmental protection."
66	10	8	1			817	Description of 'Fuel choice' could be clarified	Amend text to read: "The use of less polluting fuels"	Editorial
67	10	8	3			818	Some text is incorrectly underlined	Remove underline from: "u*ltra- or advanced low-NOX burners*" and "*advanced lean-burn concept*".	Editorial
68	10	8	3			818	Description of Air staging - "an" before optimised combustion is not required	Amend text to read: "and ensuring ~~an~~ optimised combustion."	Editorial
69	10	8	4			820	Description of DSI - naming of "trona" is inconsistent with the way in which other sorbents are named.	Change "*trona*" to read "*sodium carbonate*"	Editorial
70	10	8				817	Contents of the tables in this section appear to be in ramdom order	Re-order in alphabetical order.	Editorial
71	10					753	Uniformity of TVOC definition among different BREFs	Make sure the same definition of (T)VOC is used in different BREFs	At the moment, different definitions of TVOC are used in the LCP and LVOC BREFs (BREF LCP: Total volatile organic carbon, expressed as C (in air); BREF LVOC: total volatile organic compounds which are measured by a flame ionisation detector (FID) and expressed as total carbon.) To prevent ambiguity or differences in interpretation, uniformity in the definition of TVOC (and in general for all definitions) should be guaranteed.

72	10					739	Units with a rated **thermal input of less than 15 MWth** should not be covered by the LCP BREF.	Re-introduce the provision of draft D1: "These BAT conclusions do not address the following activities: combustion of fuels in units with a rated thermal input of less than 15 MWth"	It was clearly agreed in the KOM that units below 15 MWth would not be considered in questionnaires and in the scope of the LCP BREF (see BATIS > Review of the LCP BREF 2011- > 03 Kick-off meeting > Definitions > Definition - Aggregated Units : "During the KOM it was agreed that, due to the prohibitively extensive amount of work to cover all unit sizes, any unit < 15 MWth (**even if it is an 'LCP BREF combustion plant' type**) **will not be part of the LCP BREF**"). The current definition of combustion plant excludes unit < 15 MWth for calculating the total rated thermal input of the combustion plant, but not for compliance with the BAT conclusions (if it happens to be "caught" by the -virtual- stack aggregation rule with a combustion plant above 50 MWth).
73	10					742	Under the definition of Process furnaces or heaters,suggestion is to clarify that specific process furnaces and heaters from the Ferrous Metal Processing (FMP) industry should be identified as well in the text.	Suggestion is to read de definition as follows *Process furnaces or heaters are:- combustion plants whose flue-gases are used for the thermal treatment of objects or feed material through a direct contact heating mechanism (e.g. cement and lime kiln, glass furnace, asphalt kiln, drying process, reactor used in the (petro-)chemical industry,* ferrous metal processing furnaces)*, or- combustion plants whose radiant ...*	Combustion plants used for direct heating, drying, or any other treatment of objects or materials are not covered by Chapter III of the IED or the MCP Directive. Process furnaces and heaters are explicitly excluded from the scope of the LCP BREF. It is therefore proposed to cover the following processes, i.e. process furnaces and heaters under FMP BREF: e.g. reheating and heat treatment furnaces in hot rolling mills, heat treatment in cold rolling mills: annealing, galvannealing etc. Editorial
74	10					739	Scope: In the paragraph immediatedly after the bullet points, the preposition is not the most appropriate	Replace "*directly associated to the afforementioned activites*" with "*directly associated with the afforementioned activites*"	Editorial
75	10					741	Scope: In the final paragraph before the table the sentence is a restrictive clause, and "which" should be "that".	Replace "*reference documents which are of relavance*" with "*reference documents that are of relavance*"	Editorial

76	10					741	Definitions: There are 3 definitions relating to FGD but they are not adjacent in the list making it difficult to understand each term.	Amend terms to read; "*Flue-gas desulphurisation (FGD) system - existing*" and "*Flue-gas desulphurisation (FGD) system - new*". These related terms will then appear next to each other in alphabetical order.	Editorial
77	10					741	Definitions: Similarly, there are 2 definitions each relating to 'plant' and 'unit', but they are not adjacent in the list making it more difficult to understand each term.	Amend terms to read; "Plant - *existing*" and "Plant - *new*", and "Unit - existing" and "Unit - new". These related terms will then appear next to each other in alphabetical order.	Editorial
78	10					741	Definitions: There are several sentences with restrictive clauses, and "which" should be "that".	Replace "*which*"with "*that*" where it appears in definitions of "Combustion plant" second bullet point, "Existing plant", "Existing unit", "Existing flue-gas desulphurisation (FGS) system", "New flue-gas desulphurisation (FGS) system"	Editorial
79	10					746	General considerations: The following text is inaccurate since all installations are required by Article 11(b) of the IED to apply BAT - even those installations that do not meet the AELs: *"The BAT-AELs set out in these BAT conclusions may not apply to liquid-fuel-fired and gas-fired turbines and engines for emergency use operated less than 500 h/yr, when such emergency use is not compatible with the use of BAT."*	Amend text to read: "*The BAT-AELs set out in these BAT conclusions may not apply to liquid-fuel-fired and gas-fired turbines and engines for emergency use operated less than 500 h/yr, when such emergency use is not compatible with meeting the BAT-AEL*."	Legal clarity
80	10					746	General considerations: Sentence before the table of reference conditions	Delete "given"	Editorial
81	10					739 and all the BAT-AEL tables	The word "total" in the phrase "total rated thermal input" in the BAT-AEL tables is confusing and should be removed.	The word "total" should be deleted from the first column of all the BAT-AEL tables.	The total rated thermal input in case of aggregated plants is already embedded within the combustion plant definition.
82	10					739	Scope: The second bullet relating to 1.4 Gasification	Replace the final word "process" with "plant".	Editorial

83	10					740	Scope: The final bullet should relate to the preceding 3 bullets (i.e. "this is covered by the BAT conclusions for waste incineration"), that is, it is not a separate bullet point but the conclusion of the sentence on disposal or recovery of waste.	Remove bullet and change to "*as this is covered by the BAT conclusions for waste incineration*."	Editorial
84	12					864	Table 12.2, N° 18: Dissenting view to BAT 22 table 10.7, **dust**: EIPPCB takes up only one of sixteen postulations for dust BAT-AEL. The decision of the TWG is very ambitious. Since numerous coal- and lignite-fired power plants are going to have difficulties with this BAT-AEL, it is necessary to determine a more realistic range.	An additional line for the dissenting view on dust should be added after line N° 18:It should be added in line N° 18(new), column 1:“18.2"It should be added in line N° 18 (new), column 2: “BAT 22 Table 10.7"It should be added in line N° 18 (new), column 3: "Footnote 6 : (6) The higher end of the BAT-AEL range is 16.~~1~~14.~~.~~ mg/Nm³ for plants put into operation no later than 7 January 2014"It should be added in line N° 18 (new), column 4:"EURACOAL"It should be added in line N° 18(new), column 5: "16 mg/Nm³"	EIPPCB assessment indicates that a re-assessment of available daily averages shows that all plants having yearly averages of < 10 mg/Nm3 achieve daily averages below 16 mg/Nm³. According to 'Table and graphs working document', more than half of this set of plants recorded 95th percentile over 10 mg/Nm³.
85	12					864	Table 12.2, N° 23: Dissenting view to BAT 23 table 10.8 and table 10.9, mercury:EIPPCB has assessed:“Add a footnote mentioning that the mercury BAT-AELs do not apply to plants of > 300 MWth operated<1500 h/yr”The proposal is not limited to power plants > 300 MWth. Dissenting view of one industrial organisistion is missing because the former footnote 1 was deleted	Amend the paragraph in line N° 23: “Add a footnote mentioning that the mercury BAT-AELs do not apply to plants ~~of > 300 MWth~~ operated <1500 h/yr”	The techniques for further reducing mercury emissions are not sufficiently examined. In many cases, there are only results from tests. The decision to delete footnote 1 in table 10.8 for coal-fired plants is derived incorrectly from the data for the reference power plants and the information on the availability of techniques to reduce mercury.
86	12					859	SIn relation to the number of European plants that submitted data for the LCP BREF review.It is included 62 combustion plants firing iron and steel process gases	Suggestion is to consider 61 plants as combustion plants firing iron and steel process gases.	Suggestion is to revise the number of the European plants from I&S (see as well page 623 LCP BREF Final Draft) where it is included 56 European plants and page 859 Chapter 12 where it is included 62 plantsEditorial

87	12					934	Under the definition of Process furnaces or heaters,suggestion is to clarify that specific process furnaces and heaters from the Ferrous Metal Processing (FMP) industry should be identified as well in the text.	Suggestion is to read de definition as follows*Process furnaces or heaters are:- combustion plants whose flue-gases are used for the thermal treatment of objects or feed material through a direct contact heating mechanism (e.g. cement and lime kiln, glass furnace, asphalt kiln, drying process, reactor used in the (petro-)chemical industry,* ferrous metal processing furnaces)*, or- combustion plants whose radiant ...*	Combustion plants used for direct heating, drying, or any other treatment of objects or materials are not covered by Chapter III of the IED or the MCP Directive. Process furnaces and heaters are explicitly excluded from the scope of the LCP BREF. It is therefore proposed to cover the following processes, i.e. process furnaces and heaters under FMP BREF: e.g. reheating and heat treatment furnaces in hot rolling mills, heat treatment in cold rolling mills: annealing, galvannealing etc. Editorial
88	12					872	Extend future work listing	Under the recommendation on information to collect related to emissions to air, include the following additional bullet: "More information in order to review, in the case of gas turbines, the use of specific NOx emissions (g/MWh) as a possible alternative or complement to concentrations (mg/Nm3)"	Review the use of specific NOx emissions (g/MWhr) in place of mg/Nm3 as explained in table 7.4 (PDF page 603)
89	12					860	EIPPCB reports:"The number of dissenting views is explained by the high number of BAT conclusions, BAT-AELs and BAT-AEELs in this document, as well as by the high number of TWG members actively involved in the BREF review process and, in particular, in the final TWG meeting (140 participants)."The impression is given that all 140 had the opportunity to participate actively in the discussion. This was not the case in the TWG meeting.	In this paragraph '140 participants' should be replaced with '40 organisations and Members States with 140 attendees in total'	140 participants took part in the TWG, but each member state and each NGO was only allowed to speak with one voice, so the high number of participants does not reflect the number of members who were allowed to actively participate.
90	12					869	Table 12.2 text change need	**No 62: Text:** Modify valid split view. "*Add a footnote mentioning that yearly dust BAT-AELs for existing plants using only fuel choice apply at engine MCR loads of>85%, in steady state conditions*" .**to** "*Add a footnote mentioning that yearly* ***and daily***	Valid **dissenting view** no 62 in table 12.2 of chapter 12 LCP BREF Final Draft (June 2016) needs updating. The submitted document containing Position on BAT 39 BAT AELs for dust item >85 % of engine load", dated 07 March 2016 " following text in the overall conclusion part was overlooked: "*... on engine unit load span for set dust emission*

								average dust BAT-AELs for existing plants using only fuel choice apply at engine MCR loads of>85%, in steady state conditions".	*limits based on BAT 39 "fuel choice" option for dust emission compliance.* ***This is to be for yearly and daily average dust values***".
91	13	1				Annexes	Annex I - List of European plants that took part in the data collection exercise in 2012 lists 72 plants combusting I&S process gases. Plant 597v is considered NA and should be classified as I&S sector. From those 72 plants, 12 were considered as "Coal" power plants with I&S process gasses as auxiliary fuels (138V, 139V, 402NV, 405VC, 441-1V, 441-2V, 593-1V, 593-3V, 593-4VC, 593-5V, 617V, 618V) and should be re-classified as plants belonging to the power sector. So in total, in Annex 13 should be considered 53 gas boilers and 8 CCGTs using I&S process gases (total 61 plants).	Modify Annex 1 accordingly.	Editorial