Annex A - Comments on the draft REF BREF that are consensual within the forum

Overall Comment Number	Chapter / section No.			BATC#	Page # (PDF of July'13 Final Draft)	Comment description	Rationale	Proposal for modification
1	3	26		-	222	Monitoring information is of high importance. It should generally be presented in BREF documents before information on emissions of the sector.	Chapter 3 is on consumption and emission levels. All emission level data are related to monitoring. Therefore it is logic to first present information on the monitoring context, on difficulties, on (eventually different) monitoring standards used, on typical reference conditions etc. before presenting related data.	Add at the beginning of the section on monitoring a cross reference to the ROM + 'To enable the comparability of data monitored in Europe, attention should be paid to e.g different monitoring standards and the reference conditions used. More details on detection limits of current monitoring' methods, in particular for water emissions are available in the ROM document'.
2	4			-	240	Chapter 4 performance data is not always presented in units usually used in Europe (e.g. Table 4.19 on US data is only in ppm).	Chapter 4 should enable the reader to compare performances. If units are not identical with units usually used in Europe, comparison is not possible.	Add in the table, a footnote with a conversion ratio (idem table 4,13): '20 ppmv @ 0% O2 is around 32 mg/Nm3 @ 3% O2'
3	4	15	4	-	408	The structure of that section is not adequate (all sub-sections previously under 4.15.9 have been moved accidentally under 4.15.4).	Improve readability and making the document user friendly (air emissions related sections not to be found under water related sections).	Restore the structure that was previously present in REF BREF D2 Rev.2 from 8/5/2013 on page 467 and following ones.
4	4	23	8	-	531	Reference: section "Achieved environmental benefits", first bullet " removal of up to 98% of SO_2 and SO_3, up to 96% of NOx, and essentially all PM". The percentage (%) of SOx and NOx removal should be revised according to the updated data and information included in the paragraph 4.23.8.	It should be noted that in the paragraph 4.23.8 the sub-section related to “Operational data” has been updated with information on abatement efficiency achievable by the Gela SNOx units under average operating conditions (see table 4.116), for consistency with the data related to the performance of the SNOx unit in OMV Schwechat (see table 4.117). Thus, taking into account the data provided, the general statement on the percentage (%) of SOx and NOx removal in the sub-section "Achieved environmental benefits" should be updated accordingly. To this purpose, it should be underlined that the performances resulting from a 72 h-test run (see table 4.115) after 5 months of operation cannot be considered representative of the normal/average operating conditions of the Gela SNOx plant.	"Achieved environmental benefits", first bullet " removal of 94% - 98% of SO2 and SO3, 90 % - 96% of NOx, and essentially all PM".
5	4	25	2	-	576	Since bioremediation of refinery wastes is described in section 4.25.5, the two sections should be somehow connected.		Add reference to WT BREF in Section 4.25.5
6	5	1	4	4	592	Statement from footnote ([6]) has a general character and should be applied to every combustion unit not only those of 50 up to 100 MW. This gives consistency with the provisions of Chapter III of IED.	The BREF should be consistent with the IED and the footnote should therefore apply to combustion units.	Add reference to footnote (6) after the text "combustion units ≥ 100 MW" (4th row of the table)
7	5	1	4	4	592	Unclear footnote 4	The current wording could be confusing as it could be understood as specifying that continuous frequency of monitoring does apply only for SO2	Move footnote 4 to first column, point i, right after “SOx” and change it as follows: "(4) Regarding SOx, only SO2 is continuously monitored …. "
8	5	1	4	4	592	Footnote 8: exception for combustion units firing only refinery fuel gas should refer also to combustion units firing refinery fuel mixed with other gaseous fuels.	Monitoring of metals in case of natural gas or mixture of natural gas with refinery fuel gas leads to additional costs but does not bring any improvement in environmental performance. Natural gas does not contain any metals.	Change the text of footnote ([8]): "With the exception of combustion units firing only gaseous fuels"
9	5	1	6	10	594	Error in the text.	Error in the text.	To edit the text in the first sentence: the words "Table 5.3." should be deleted.
10	5	1	7	11	595	This comment relates to BAT11 and the applicability criteria relating to the requirement to segregate non contaminated water streams (e.g. once through cooling, rain water). The applicability criteria states 'Generally applicable for new units. For existing units applicability may require a complete rebuilding of the unit or installation.'. This statement undermines the requirement for segregation, it should be reworded.	In most cases on existing plants it should be possible to collect and reroute a cooling water stream when it exits the process to which it is providing cooling, without the need to rebuild the whole plant. A general applicability criteria may deter the operator from seeking to achieve segregation in the future.	For consistency with techniques I, and ii, add after 'generally applicable' the words 'for new units'
11	5	1	7	12	595	This comment relates to BAT12 and the requirements to monitor emissions from waste waters. Footnote (5) to table 5.3 says that not all parameters and sampling frequencies are applicable to effluent from gas refining sites. This footnote has been applied to the whole table by including it in the title, but then it has been specifically applied to phenol index. this is confusing.	It was the intention to apply the footnote to the whole table, due to the lower pollution risk compared with an oil refinery, giving the competent authority discretion to determine which parameters and monitoring frequencies ought to be applicable to gas refining sites.	remove footnote (5) from the Phenol Index and leave it applicable to the whole table.
12	5	7		29	607	iv. Recovery of gas (including the final venting) as a component […] in table related to BAT 29. The technique and its description are confusing.	Technique - It would seem that the expression "final venting" is widely interpreted as the period after complete depressurisation of the coke drum has been achieved. At this point there is no motive pressure for gas recovery. Our suggestion is to clarify the intent of the BAT which is to recover gas from the depressurisation of the coke drum to a vapour recovery system. Description - “factual inaccuracy” in that the primary technique identified in iv. says “(including the final venting)” in both the technique and the description. BAT would be to recover the gas but at some point the pressures equalize with the coke drum and the recovery system, and the “final venting” involves opening to atmosphere. It should be clear there is no technology to recover the “final venting”.	Replace in the Technique 'final venting' by :'venting prior to the drum being opened to atmosphere'. Remove 'final' in the Description

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13	5	9		35	613	Footnotes (1) and (2) are missing	Consistency with final TWG meeting outcome (15/3/2013) and revised draft from 8/5/2013	Add missing footnotes (1) and (2) (text from REF BREF D2 Rev.2 from 8/5/2013 on page 692 : new text according to final meeting conclusions). (1) The lower end of the range is achievable for units with the use of end-of-pipe techniques. (2) The upper end of the range refers to the use of a high percentage of oil burning and where only primary techniques are applicable.
14	5	9		35	613	The title of Table 5.12 should be consistent with other tables like 5.11 or 5.14	Consistency with other parts of the section 5.9	Table 5.12: BAT associated emission levels for dust emissions from the multi-fuel firing combustion units with exception of gas turbines
15	5	9		36	615	The H/C ratio (table 5.13) should be qualified (molar) and a 'H/C ratio' definition should be included in the glossary.	Clarification	Modify as : 'an H/C molar ratio above 45%'…
16	5	19	3	-	624	Definition of flue-gas desulphurisation should also consider transforming SO_2 into solid sulphur compounds, e.g.. $CaSO_4$ not into sulphur only.	Solid sulphur compounds, e.g. $CaSO_4$ are produced in non-regenerative scrubbing processes	Technique or ensemble of scrubbing techniques where sulphur is removed from flue-gases through various processes generally involving an alkaline sorbent for capturing SO2 and transforming it into solid sulphur or sulphur compounds
17				-	662	Replace CAS - Chemical abstracts service (registry number) by Chemical abstracts service (registry number)		Replace CAS - Chemical abstracts service (registry number) by Chemical abstracts service (registry number)
18				-	585	A "bubble approach" could only be included in the BAT conclusions Chapter on the condition that it is ensured that the resulting total emissions are equal to or lower than the emissions that would be achieved on the basis of the application of the individual unit-level BAT AELs.	-	-
19				-	585	When applying a bubble approach, an "over-performance" will be observed as compared to aggregating the upper ends of the BAT-AEL ranges across the relevant units.	-	-