Summary
Final TWG meeting on the LCP BREF revision

The Final Technical Working Group (TWG) meeting for the review of the Large Combustion Plant (LCP) Best Available Technologies Reference Document (BREF) took place from 1-9 June 2015 in Seville, Spain. Two representatives from ETN's IED Committee joined the meeting in Seville on behalf of ETN: Tomas Alvarez from Endesa and Neil Dawson from National Grid.

Following the release of the revised BAT Conclusions, ETN made a series of comments and concerns in relation to their content and implications for gas turbine based plant in both generation and mechanical drive application.

Overall, given the low level of environmental impact of this technology relative to other generation types, the current difficulties in operation of this plant type in the market, and the role of the plant in managing networks stressed by intermittent renewable supplies, ETN felt that the revisions to the Conclusions still pose a significant threat to the technology and may penalise it compared to other prime mover types.

ETN comment 1:

Operators should not be forced to buy plant at own risk when they cannot be in receipt of a warranty. Hence AELs of 50 mg/Nm^3 NOx and 40-100 mg/Nm^3 CO should be retained only for baseload natural gas fired plant. H Class and higher technology may struggle to achieve 50mg/Nm^3 so this should be considered separately, with 75mg/Nm^3 for NOx being an appropriate basis for permit setting, offering a high level of environmental protection whilst supporting deployment of the technology.

Conclusion:

- CO emissions are going to be considered indicative or expected values for BAT.
- Yearly average BAT-AELs for NOx and CO do not apply to existing plants in peak-or emergency –load mode.
- Table 10.24: BAT associated emission levels for NOx, NH3 and CO emissions to air from LFO fired gas turbine has been completely removed.
- Whilst there are some improvements in form of the text in the BAT Conclusions and how they apply to the technology there remains some concern that the required performance cannot be guaranteed by OEMs in all cases. EUTurbines did submit a so called "split view" on this point and have offered an alternative form of the correction to AELs applicable to high efficiency machines. Eurelectric also submitted a split view here. Nevertheless, it does not seem that there is much scope at this point for these figures to be changed by the Bureau, merely alternative positions noted ahead of the Article 13 Forum.

ETN comment 2:

SCR is not BAT for natural gas or liquid fuel fired GTs unless local air quality requires it. ETN believes that for new plant either Dry Low Emissions or Water/Steam Injection represent BAT. This is also true for existing plant – noting that for emergency plant there may be no cost benefit case for upgrades to firing systems. We also note that for balancing intermittent renewables, the "power boost" offered by the use of Water Injection / Wet Compression into gas turbines can be an especially useful feature – and the application of this should not be restricted.

Conclusion:

- SCR: Not applicable in the case of combustion plants operated for <500 hpa. Retrofitting existing plants may be constrained by the availability of sufficient space. There may be technical and economic restrictions for retrofitting existing plants operated between 500 and 1500hpa. Not generally applicable to existing combustion plants of < 100 MWth.
- Water or steam addition remains an applicable technique, with a note made that this may be restricted where water availability is poor. No note was made of the potential for load to be enhanced by water injection.

ETN comment 3:

CO be required to be monitored for combustion QA purposes (unless local air quality requires otherwise), but overall net emission be managed via the Emissions Trading Scheme compliance process. For Emergency plant, we consider that there is no need to monitor as there will be an increase in overall plant emissions due to running required for the sole purpose of demonstrating compliance.

Conclusion:

Those CO levels set in the BAT Conclusions are to be advisory in nature and represent "indicative" figures associated with the application of Best Available Techniques. This is a major improvement in how the document is to be applied by permitting bodies – but it is important to note that many plant will have Emission Limit Values as a result of IED Annex V, and that the Competent Authorities can still choose to apply "hard" CO limits rather than these indicative ranges if deemed appropriate.

ETN comment 4:

In-service Emergency Units, and those under IED derogations, should be excluded from the newly introduced Emergency plant AELs. We feel there has been a lack on consultation over the introduction of this category.

Conclusion:

- The definition of "Emergency units" has changed to "Combustion plant that operates less than 500 operating hours per year".
- For this category of plant it is proposed by the EIPPCB that the daily averages or averages derived over the sampling period (for discontinuous measurements) emission levels are considered as indicative. EIPPCB do not consider yearly average emission levels to be appropriate here. This is a significant benefit to the technology, especially given the decreasing annual operation seen by many plant.

ETN comment 5:

BAT AELs should apply above 70% load, in common with IED ELVs, this recognises the restriction to performance arising from low load operation. Without this we are extremely concerned that GTs in compressor station and those despatched for demand response by TSOs will be unable to operate – ultimately leading to either more polluting, smaller units being operated, or further investment being required, increasing the costs to consumers.

Conclusion:

This point has not yet been finalised, however it has been indicated in the meeting by the EIPPCB that AELs should be taken as applying >70% (as in the IED) with operation in the range of minimum stable generation to 70% being considered as OTNOC (Other Than Normal Operating Conditions) and therefore in the gift of the Competent Authority to handle as they see appropriate. This is a significant benefit to the technology over the previously suggested regime.

ETN comment 6:

Whilst we welcome the treatment of efficiency, as being assessed from nameplate values or commissioning tests rather than continuous operation, we are concerned that this is not always clear in the BAT Conclusions. ETN wish for this to be more clearly stated.

Conclusion:

Clarity on this point is still required.

ETN comment 7:

Given the special and challenging nature of off-shore installations we believe that the BAT Conclusions drawn here should be advisory in nature for that sector and that his should be clearly stated.

Conclusion:

BAT AELs have been set for the offshore sector that in some cases will represent a challenge to the technology. The emergency plant exclusion, as noted earlier, remains. The BAT Conclusions do recognise to some extent potential barriers to use of a technology off-shore (specifically weight) and overall the figures and text are likely to be broadly appropriate for the technology in most cases. Compliance will be based on periodic monitoring. The Conclusions will also state that "more information on offshore platforms should be collected during the next BREF review, in particular on the use of dual fuel gas turbines combusting liquid fuels." ETN, and its members, may wish to consider whether to pursue this as an initiative over the coming years.

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