Annex G

Investigation Report

Investigation Report of CEMS Exceedances

Date	1 – 31 March 2021
Time	Continuous monitoring throughout March 2021
Monitoring Location	Continuous Environmental Monitoring System (CEMS)
Parameter	Various emission parameters of the Cogeneration Unit (CHP) and Ammonia Stripping Plan (ASP)
Exceedance Description	1. Continuous monitoring was carried out at the CAPCS, CHP and ASP throughout the reporting period using the CEMS. According to the EM&A Manual, exceedance is considered if the emission concentration of the concerned pollutants is higher than the emission limits stated in Tables 2.2, 2.3 and 2.5 of the EM&A Manual (Version F) for CAPCS, CHP and ASP respectively. The concentration of the concerned air pollutants were monitored on-line by the CEMS. Exceedances of various emission parameters were recorded on the CEMS including: • NO_x and SO_2 in the CHP • NH_3 in the ASP. 2. According to the Contractor, exceedance is observed to occur mainly at CHPs operated at loading with 40-60% of the optimal loading (1400KW) 3. The Contractor explained that the NO_x exceedances recorded in CHP were due to the low biogas loading which results in the poor performance efficiency in CHP, the SO_2 exceedances recorded in CHP was due to tripping of the desulphurisation system, which have stopped temporary for urgent maintenance. The desulphurisation system resumed to normal operation on the day after urgent maintenance. 4. The Contractor explained that the NH_3 exceedances in ASP were caused by unstable column temperature in biogas combustion, which have led to incomplete combustion of biogas and NH_3 and hence exceedances in ASP.
Action Taken / Action to be Taken	• The Contractor will actively liaise with EPD in their monthly meeting with an aim to increase the quantity of SSOW that can be treated daily, such that sufficient biogas can be generated for the CHP to be able to operate at optimal efficiency. • The Contractor has engaged with the CHP supplier to undertake remote fine-tuning during normal operation of the CHP, an on-site inspection was carried out by the CHP supplier representative on 12 March 2021 • The Contractor has established a regular communication channel with the overseas ASP

	supplier, to overcome the fact that the supplier cannot travel to Hong Kong due to travel restriction. • The Contractor arranged for remote fine-tuning of the ASP with the overseas ASP supplier during this reporting period. • Daily meetings have been held to review ASP operational and emission data. • The ASP supplier is in the process of preparing a guideline for the Contractor to improve the performance of the ASP based on the data collected from January to March 2021. • Continuous improvements have been observed in ASP emission performance with a reduction of no. of hours of exceedance compared with last two reporting periods. • The Contractor will continue to arrange for remote fine-tuning of the ASP with the overseas contractor in the upcoming reporting period. The Contractor will continue to carry out maintenance measures as per the supplier's manual. • The Contractor in consultation with the overseas ASP supplier will investigate the reasons for the occasional equipment tripping that has led to unstable column temperature of the thermal oxidizer. The Contractor may carry out replacement of some ASP equipment and/or increase maintenance frequency, subject to their investigations.
Remedial Works and Follow-up Actions	The Contractor is recommended to closely monitor the processes, including the modification works and follow-up emission monitoring of the CHP and ASP to avoid exceedance. MT has advised that the issue of emission exceedances should be prioritised in up-coming meetings. MT will carry out follow-up audit regarding the progress next month.

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