

Annex G

Investigation Report

Investigation Report of CEMS Exceedances

Date	1 - 31 July 2021
Time	Continuous monitoring throughout July 2021
Monitoring Location	Continuous Environmental Monitoring System (CEMS)
Parameter	Various emission parameters of the Cogeneration Unit (CHP) and Ammonia Stripping Plan (ASP)
Exceedance Description	<ol style="list-style-type: none"> 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: <ul style="list-style-type: none"> • NO_x, SO₂ and VOCs in the CHPs • CO, NO_x, SO₂, VOCs, NH₃, HCl and HF 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 exceedances recorded in the CHPs were due to the low biogas loading which resulted in the poor performance efficiency in CHP. 4. The Contractor explained that the exceedances in ASP were caused by unstable column condition and temperature in the thermal oxidiser, which have led to incomplete combustion of biogas and NH₃ in ASP.
Action Taken / Action to be Taken	<ul style="list-style-type: none"> • The quantity of SSOW was around 130 tonnes per day in this reporting month, which was lower than the desirable quantity. The Contractor will continue to 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 carried out on-site inspection for the CHPs throughout mid-July 2021. The total number of hours of exceedance from CHP 1 and 2 has reduced from 47 no. to 23 no. from the last reporting period. • The overhaul of the CHP3 was carried out in this reporting period, this has resulted in a reduction in exceedance hour from 76 no. to 9 no. at CHP3. • The Contractor has been fine-tuning the conditions (air and water flow and the temperature) of the ASP

	column and the temperature of the thermal oxidiser to optimise its performance.
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.

Prepared by: Angela Yung, MT Representative

Date 9 August 2021