ANNEX F INVESTIGATION REPORT

Investigation Report of CEMS Exceedances	
Date	1 – 31 August 2025
Time	Continuous Monitoring throughout August 2025
Monitoring Location	Continuous Environmental Monitoring Systems (CEMS)
Parameter	Various emission parameters of the Centralised Air Pollution Control Unit (CAPCS), Cogeneration Units (CHPs), Ammonia Stripping Plant (ASP) and the Standby Gas Flaring Unit.
Exceedance Description	Continuous monitoring was carried out at the CAPCS, CHPs and ASP throughout the reporting period using the CEMS. According to the EM&A Manual, an exceedance is considered if the emission concentration of the concerned pollutants is higher than the emission limits stated in Tables 2.2, 2.3, 2.4, and 2.5 of the EM&A Manual (Version F) for the CAPCS, CHPs, Standby Flare, and ASP respectively. The concentrations of the concerned air pollutants were monitored on-line by the CEMS. Exceedances of various emission parameters were recorded on the CEMS including: • Total Odour from CAPCS; • NO_x from CHP1; • NO_x from CHP2; • NO_x from CHP3; • CO, NO_x, SO_2, VOC, NH_3 and HF from the ASP; and • HF from Standby Flaring Gas Unit The Contractor has investigated the cause of the exceedances and identified that: 1. The exceedances of Total Odour from CAPCS were caused by system instability, the Contractor has identified that the exceedances may be attributed to the frequent stopping/ starting of the system. 2. The exceedances of NO_x from CHP1 were caused by system instability, the Contractor has identified that the exceedances may be attributed to the frequent stopping/ starting of the system. 3. The exceedances of NO_x from CHP2 were caused by system instability, the Contractor has identified that the exceedances may be attributed to the frequent stopping/ starting of the system. 4. The exceedances of NO_x from CHP3 were caused by system instability, the Contractor has identified that the exceedances may be attributed to the frequent stopping/ starting of the system. 5. The various exceedances from the ASP can be attributed to ASP tripping and the frequent starting and stopping of the system which has been causing unstable process conditions during operation. 6. The exceedances of HF from Standby Flaring Gas Unit were caused by system instability, the Contractor has identified that the

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	exceedances may be attributed to the frequent stopping/ starting of the system.
Action Taken / Action to be Taken	The Contractor investigated the reason for the exceedances and arranged Remedial Works and Follow-up Actions (see below).
Remedial Works and Follow-up Actions	The Remedial Works and Follow-up Actions to be implemented by the Contractor to address the above exceedances (as well as updates on any exceedances from recent months) are detailed in the following table below.

Monitoring Location	Measures/ Actions to Address any Exceedances	Implementation Timeline & Status
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Cogeneration Unit 1 to 3 (CHP 1 to 3)	• Additional advanced training from the manufacturer for the operation and maintenance of the equipment had been completed. • The Contractor identified that a buildup of silicon deposits on the cylinder heads of the CHPs is preventing the engines from reaching full loading and will require routine maintenance including cleaning to resolve.	• Routine maintenance is being carried out by the Contractor.
Ammonia Stripping Plant (ASP)	• Overhaul of the ASP was conducted and visit by the supplier was completed. Fine-tunning has been recommended to improve the performance.	• Fine-tuning is in progress.

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