



12 ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

12.1 Introduction

This section summarizes the requirements of environmental monitoring and audit (EM&A) requirements for the Project during the construction and operational phases with reference to the assessment results of various environmental issues presented in this EIA Report. Details of the EM&A requirements and the implementation schedule of mitigation measures are provided in a stand-alone EM&A Manual.

12.2 Air Quality Impact

12.2.1 Construction Phase

With the implementation of the good engineering practice and requirements as stipulated in the Air Pollution Control (Construction Dust) Regulation and the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation and the mitigation measures specified in **Section 3.10.1**, adverse air quality impact during construction phase of the Project is not expected. Construction dust monitoring and environmental site inspections are recommended to be carried out during the construction phase to ensure the proper implementation of the air quality control measures and to ensure that there would be no adverse construction air quality impact at nearby air sensitive receivers (ASRs) arising from the Project.

12.2.2 Operational Phase

During the operation of the I-PARK2, the major potential sources of air quality impacts include air emissions from the stacks of incineration process and odour nuisance. Air pollution control and stack monitoring system in accordance with the prevailing guidance note on the best practicable means (BPM) for incinerators (municipal waste incineration) in Hong Kong and EM&A Manual will be implemented to ensure that the emissions from the stack will meet the proposed target emission limits. According to the EPD's Guidance Note on the Best Practicable Means for Incinerators (Municipal Waste Incineration) BPM 12/1 (2024), commissioning trial of the plant, to be witnessed by the air pollution control authority whenever appropriate, shall be conducted in such manner and format agreed with the air pollution control authority to demonstrate the effectiveness of the air pollution control measures and the compliance with



emission limits. A report shall be submitted to the air pollution control authority within one month after the completion of the commissioning trial. For key air pollutants not covered in the prevailing guidance note on the BPM for incinerators (municipal waste incineration) including Be, Zn, Se, PCBs, PAHs and carcinogenic PAHs, commissioning test shall be conducted upon commissioning of I-PARK2 to demonstrate compliance with the emission rates assumed in the EIA report.

For the IBA treatment plant, the monitoring requirements shall follow the EPD's Guidance Note on the Best Practicable Means for Mineral Works (Stone Crushing Plant) BPM 11/1 (95). The monitoring frequency shall be agreed with the air pollution control authority according to the above guidance note. The monitoring locations shall include the exhaust points of the IBA treatment plant to demonstrate compliance with the requirements set out in the EIA report. Commissioning trial upon commissioning of the IBA treatment plant and further checking upon reaching the full handling capacity of the IBA treatment plant shall also be conducted to demonstrate the performance and capacity of the air pollution control measures and compliance with the emission rates assumed in the EIA report.

Besides, odour patrol shall be carried out to demonstrate the effectiveness of the proposed odour mitigation measures and to ensure that there would be no adverse odour impact arising from the Project.

12.3 Noise

Since no existing, committed or planned noise sensitive receiver (NSR) is identified within the assessment area, noise monitoring is not required for the Project. Regular environmental site audits are recommended to ensure the proper implementation of proposed mitigation measures during the construction phase.

12.4 Water Quality

12.4.1 Construction Phase

Construction of the new berthing facility and seawall modification for I-PARK2 would involve marine construction work. The underlying marine mud or the soft materials on the existing seabed would affect the stability of the new berth and seawall. Non-dredged ground treatment method, namely Deep Cement Mixing (DCM), is proposed for construction of the berthing facility and seawall modification. The DCM involves injecting controlled volumes of cement into the underlying materials whilst simultaneously mixing the cement with the *in-situ* materials to improve their strength. A blanket layer of sand fill would be placed on top of the treatment works area prior to the DCM installation to prevent the escape of cement slurry into



the water and disturbance of sediment fines during the mixing.

Marine water quality monitoring is recommended to be carried out in Deep Bay during the sand blanket laying and DCM works. Site audit shall also be conducted throughout the marine and land-based construction under this Project to ensure that the recommended mitigation measures are properly implemented.

Discharge licence(s) should be obtained under the WPCO if there are any construction site discharges. Monitoring of the construction site effluent shall be carried out in accordance with requirements stipulated in the WPCO discharge licence(s).

12.4.2 Operational Phase

The Project would involve brine discharge from the proposed desalination plant and the spent effluent discharge from the proposed seawater cooling system if seawater-cooled option is adopted. Marine water quality monitoring during the first year of Project operation is recommended to verify the impact predictions of this EIA study.

Discharge licences should be obtained under the WPCO for operational phase effluent discharges from the Project. Regular monitoring of effluent quality may be specified in the WPCO discharge licence, and effluent monitoring shall be implemented in accordance with the WPCO licence requirements.

12.5 Waste Management Implications

12.5.1 Construction Phase

No monitoring is required during construction phase. Weekly audit of waste management practice is recommended during the construction phase of the Project to determine if waste is being managed in accordance with prescribed waste management procedures and the Environmental Management Plan (EMP). The audits shall examine all aspects of waste management including waste generation, storage, recycling, treatment, transportation, and disposal.

12.5.2 Operational Phase

During the operational phase, it is recommended that Toxicity Characteristic Leaching Procedure (TCLP) tests shall be carried out for the bottom ash and stabilized fly ash / air pollution control (APC) residues to be disposed of in accordance with the requirements of the proposed Incineration Residue Pollution Control Limits (IRPCL) for landfill disposal. The treated bottom ash for off-site beneficial use would be tested in accordance with the relevant requirements subject to the possible options of beneficial uses/outlet of the treated bottom ash.



12.6 Ecological Impact

12.6.1 Terrestrial Ecology

The ecological impact assessment concluded that the overall impacts on terrestrial ecology would be of low to negligible significance and no unacceptable impact is anticipated with mitigation measures in place. Mitigation measures and good site practices are recommended to minimize the ecological disturbances during the construction phase. Site audit shall also be conducted as part of the EM&A programme to ensure that the recommended mitigation measures and good site practices are properly implemented during the construction phase.

During the operational phase, the design and mitigation measures e.g. air pollution control measures and best management practices etc. recommended in the EIA report are considered sufficient for mitigating the potential disturbances on terrestrial ecology. No EM&A requirement specific to terrestrial ecology is required for operational phase.

12.6.2 Marine Ecology

Water quality monitoring and audit programme is recommended as discussed in **Section 12.4**. The monitoring and audit programme on water quality can also serve to protect the marine ecology. Marine ecological monitoring is not required for the Project.

12.7 Fisheries Impact

No unacceptable fisheries impact is anticipated during the construction and operational phases of the Project. Water quality monitoring and audit (as discussed in **Section 12.4**) designed to detect and mitigate impacts to water quality during construction and operation phases would serve to protect against impacts to fisheries. Fisheries monitoring is not required for the Project.

12.8 Visual Impact

With proper implementation of the proposed design and mitigation measures including aesthetic design of buildings, infill planting, tree planting along site boundary, green roof and vertical greening where practicable, the overall visual impact will be ranging from negligible to moderate¹. The I-PARK2 contractor shall further develop the detailed architectural and landscape design during detailed design stage, taking into account the proposed design and mitigation measures to reduce or moderate the visual effects and enhance the overall visual quality. Design audit of the detailed architectural and landscape design shall be carried out by

¹ The impact is moderate if there will be some adverse visual effects caused by the project, but these can be eliminated, reduced or moderated to a certain extent by design / mitigation measures.



the Environmental Team Leader and verified by the Independent Environmental Checker as conforming to the recommendations in this EIA report. Site audit shall be carried out during the implementation and the first year after completion of the proposed design / mitigation measures to ensure its proper implementation and effectiveness to reduce or moderate the visual effects and enhance the overall visual quality.

12.9 Health Impact

The air quality monitoring and audit programme proposed in **Section 12.2** would ensure compliance with the recommendations of the EIA study and assess the effectiveness of the recommended measures to avoid, minimise and mitigate the potential health impacts due to aerial and fugitive emissions arising from construction and operation of the Project.

For the pulverised fuel ash (PFA) on-site, all PFA excavated would be reused for backfilling on-site and covered by at least 1m thick general fill so that no off-site disposal of PFA will be required in this Project. The I-PARK2 contractor shall be required to provide personal protective equipment including suitable dust masks to the workers, observe relevant requirements promulgated by the Labour Department in respect of occupational safety and health and comply with relevant statutory requirements. Regular indoor radon measurement shall be conducted with reference to EPD's Practice Note for Professional Persons ProPECC PN 1/99 "*Control of Radon Concentration in New Buildings*" during operation of the Project.

As for the fugitive emissions arising from transportation, storage, handling and disposal of waste and ash during the operation phase, the waste and ash will be fully enclosed in sealed containers or covered entirely to prevent leakage from vessels or vehicles during transportation, while storage and handling of waste and ash will be carried out in an enclosed environment. Regular site inspections are recommended to ensure the proper implementation of proposed mitigation measures during the construction and operational phases.

The I-PARK2 contractor will be required to develop and implement a Project-specific emergency response / contingency plan to handle potential accidental events during construction and operation of the I-PARK2 Project with a view to minimising the health impacts associated with the potential accidental events.

12.10 Landfill Gas Hazard

During construction, monitoring of landfill gas shall be conducted periodically in excavations, manholes and chambers and any other confined spaces that may be created during the ground-works and building construction.



During operation, regular monitoring of landfill gas at the monitoring wells, underground service voids and manholes shall be conducted in accordance with the monitoring programmes in the detailed qualitative risk assessment to be submitted by the I-PARK2 Contractor during detailed design stage for Landfills and Development Group of EPD for vetting.