

12. Environmental Monitoring and Audit Requirements

12.1 General

This Section presents a summary of Environmental Monitoring and Audit (EM&A) requirements for each impact assessment described in this EIA Report.

Details on the requirements, methodology and action plans are described in a standalone EM&A Manual.

12.2 Air Quality Impact

12.2.1 Construction Phase

As no ASRs are predicted to exceed the relevant criteria with implementation of the recommended mitigation measures, regular dust monitoring is not considered necessary during the construction phase of the Project. However, regular site audits are suggested to ensure the dust control measures are properly implemented. Details of the environmental monitoring and audit (EM&A) programme will be presented in the stand-alone EM&A Manual.

12.2.2 Operation Phase

Should the recommended mitigation measures be implemented for the operational phase, no ASRs are predicted to exceed the relevant criteria under the current AQOs. Though for performance, a Continuous Emission Monitoring System (CEMS) will be installed to monitor air emissions at the OWTF2. Odour patrol at the project site boundary is proposed to monitor any odour impact arising from the operation of the OWTF2. Regular audits are also suggested to ensure proper operation and maintenance of the recommended pollution control equipment. Details of the environmental monitoring and audit (EM&A) programme are contained in the stand-alone EM&A Manual.

12.3 Hazard to Life

“Good Practices” and “recommended design measures” for the safe operation of OWTF 2 that have been assumed within the Hazard to Life Assessment are summarised in **Section 4.9**. Risk mitigation measures have not been proposed in the current EIA, as the risk is found to be at an acceptable level. Therefore, no environmental monitoring and audit requirements are proposed.

12.4 Noise Impact

12.4.1 Construction Phase

Given that unmitigated construction noise impact is predicted during the construction phase and to ensure that the nearby NSRs will not be subjected to unacceptable construction noise impact, an Environmental Monitoring and Audit (EM&A) programme is recommended. Details on the noise monitoring requirements, methodology and action plans are described in the separate EM&A Manual.

12.4.2 Operation Phase

Prior to the operation phase of the Project, as part of the design process, commissioning tests should be conducted to ensure the operation noise from the fixed plant would comply with the relevant EIAO-TM noise criteria.

It is predicted that there will be no adverse noise impact generated from the operation of the Project, hence no environmental monitoring and audit is proposed.

12.5 Water Quality Impact

Adverse water quality impact was not predicted during the construction and operation phase of the Project. Nevertheless, appropriate mitigation measures are recommended to minimise potential water quality impacts. Water quality monitoring is not considered necessary. However, regular audit of the implementation of the recommended mitigation measures during construction phase at the work areas should be undertaken during construction phase to ensure the recommended mitigation measures are properly implemented.

12.6 Waste Management Implications

It would be the Contractor's responsibility to ensure that all wastes produced during the construction of the Project are handled, stored and disposed of in accordance with the recommended good waste management practices and EPD's regulations and requirements. A WMP which would become part of the EMP should be prepared in accordance with ETWB TC(W) No. 19/2005 by the Contractor. Mitigation measures recommended in this section should form the basis of the WMP.

Waste materials generated from construction activities, such as excavated materials, C&D materials and general refuse, are recommended to be audited at regular intervals to ensure that proper storage, transportation and disposal practices are being implemented. The Contractor would be responsible for the implementation of mitigation measures to minimise waste or redress problems arising from the waste materials.

12.7 Ecological Impact

The ecological impact assessment has evaluated the ecological impacts of the proposed Project and has concluded that no unacceptable ecological impact will result. No specific ecological mitigation measure is required while precautionary measures for the plantation area are proposed. The proposed precautionary measures to avoid any impacts arising from the Project should be checked as part of the environmental monitoring and audit programme during the construction phase. Precautionary measures recommended to be implemented during the construction phase are summarised below:

- Detailed vegetation survey as baseline monitoring to update the exact locations, number and condition of individuals of *Aquilaria sinensis* and any other floral species of conservation interest within the Project Area prior to commencement of any construction works;
- Proposal of mitigation measures, such as transplantation, if individuals of floral species of conservation interest likely to be affected by the Project is identified in the detailed vegetation survey;

- Erection of temporary protective fence along the plantation area where trees and vegetation would be retained within the Project Area and proper maintenance of such protective measure during construction; and
- Monitoring of any floral species of conservation interest identified in the detailed vegetation survey during the construction phase on a monthly basis.

The implementation, monitoring and audit of the above precautionary measures should be conducted as presented in the standalone EM&A Manual. In addition, the mitigation measures for air, noise, water and landscape aspects proposed in respective sections which are indirectly beneficial to the local ecology shall be checked as part of the environmental monitoring and audit procedures during construction period as presented in the standalone EM&A Manual.

12.8 Fisheries Impact

Commercial pond fish culture resources or activities were not identified within the Study Area. With the water quality control measures in place, the Project is unlikely to cause any direct or indirect impacts on the pond fish culture resources or activities in the Study Area. Therefore, no monitoring and audit programme or requirement for fisheries impact is considered necessary.

12.9 Landscape and Visual Impact

12.9.1 Construction Phase

Other than preservation of existing topsoil as good site practice, Construction Phase mitigation measures comprise the following:

- CP1 – Existing trees are retained whenever possible and protected during construction.
- CP2 – The construction site activities are carefully designed to minimise impact such as light, noise, tree felling and eyesores.
- CP3 – Transplantation would be performed whenever possible.

12.9.2 Operational Phase

Operational Phase mitigation measures comprise the following:

- OP1 – The location and layout of the proposed OWTF 2 and associated facilities are designed in a way that has the lowest impact to the proposed site.
- OP2 – Amenity / compensatory planting will be utilised throughout the site.
- OP3 – Planting will be added by man-made slopes to give a more natural appearance.
- OP4 – Vertical and rooftop greening will maximise green space and soften hard structures.

The abovementioned mitigation measures shall be checked as part of the environmental monitoring and audit procedures during construction period as presented in the standalone EM&A Manual.

12.10 Cultural Heritage Impact

12.10.1 Archaeology

No EM&A requirements are considered necessary during the construction and operation phases of the proposed works as there are no impacts on known sites of archaeological interest and potential areas of archaeological interest.

12.10.2 Built Heritage

No EM&A requirements are considered necessary during the construction or operation phases of the Project.