

Checklist for EIA Study Brief (ESB-309/2018)

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
S1	BACKGROUND		
S1.1	An application (No. ESB-309/2018) for an Environmental Impact Assessment (EIA) study brief under section 5(1)(a) of the Environmental Impact Assessment Ordinance (EIAO) was submitted by the Applicant on 9 October 2018 with a project profile (No. PP-570/2018) (the Project Profile).	✓	S1.2.1.1-S1.2.1.3
S1.2	The Project is to upgrade Yuen Long Sewage Treatment Works (STW) by carrying out the following main works:		
(i)	Upgrading the treatment level and modifying the existing treatment facilities of Yuen Long STW;	✓	S2.2
(ii)	Providing effluent reuse facilities;	✓	S2.5.2.11 – 2.5.2.15
(iii)	Providing co-digestion facility for imported organic wastes; and	✓	S2.3.4
(iv)	Providing disinfection facilities.	✓	S2.5.2.10
	The Project location is shown in <u>Appendix A</u> .	n/a	S1.1.1.4 (Figure 1.1)
S1.3	The Project is a designated project by virtue of Item F.1 of Schedule 2, Part I of the EIAO, which specifies "Sewage treatment works with an installed capacity of more than 15 000 m ³ per day" and Item F.4 of Schedule 2, Part I of the EIAO, which specifies "An activity for the reuse of treated sewage effluent from a treatment plant". Based on the information provided in the Project Profile, the Project is also a potential designated project under Item G.4 of Schedule 2, Part I of the EIAO, which specifies "A waste disposal facility (excluding any refuse collection point), or waste disposal activity, for (a) refuse; or (b) chemical, industrial or special wastes", if pre-treated organic waste will be disposed and treated under the Project.	✓	S1.2.1.3
S1.4	Pursuant to section 5(7)(a) of the EIAO, the Director of Environmental Protection (the Director) issues this EIA study brief to the Applicant to carry out an EIA study.	n/a	S1.2.1.2
S1.5	The purpose of this EIA study is to provide information on the nature and extent of environmental impacts arising from the construction and operation of the Project and associated works that will take place concurrently. This information will contribute to decisions by the Director on:	✓	The purpose of the EIA Report is described in Section 1.3.
(i)	The acceptability of any adverse environmental consequences that are likely to arise as a result of the Project;		
(ii)	the conditions and requirements for the design, construction and operation of the Project to mitigate against adverse environmental consequences; and		
(iii)	the acceptability of residual impacts after the proposed mitigation measures are implemented.		
S2	OBJECTIVES OF THE EIA STUDY	✓	
S2.1	The objectives of the EIA study are as follows:		The objectives of the EIA Study Brief are presented in Section 1.4.
(i)	to describe the Project and associated works together with the requirements and environmental benefits for carrying out the Project;		
(ii)	to identify and describe elements of community and environment likely to be affected by the Project and/or likely to cause adverse impacts to the Project, including natural and man-made environment and the associated environmental constraints;		
(iii)	to provide information on the consideration of alternative options of the design, layout, location, scale and extent of the Project and the construction methods with a view to avoiding or minimizing potential environmental impacts to environmentally sensitive areas and sensitive uses; to compare the environmental benefits and disbenefits of different options; to provide reasons for selecting the preferred option(s) and to describe the part environmental factors played in the selection of preferred option(s);		
(iv)	to identify and quantify emission sources (including air quality, noise, water quality		

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
(v)	and waste, etc. as appropriate) and determine the significance of impacts on sensitive receivers and potential affected uses;		
(vi)	to identify and quantify contaminated land within any project area for development works, and to propose measures to avoid disposal in the first instance;		
(vii)	to identify and quantify any potential loss or damage and other potential impacts to ecology, flora, fauna and natural habitats and to propose measures to mitigate these impacts;		
(viii)	to identify any potential landscape and visual impacts and to propose measures to mitigate these impacts;		
(ix)	to identify any potential hazard to life due to generation, storage, utilization, processing and transmission (if applicable) of biogas during construction and operation of the Project and to propose measures to mitigate these impacts;		
(x)	to identify any potential human health impacts associated with reuse of treated sewage effluent during operation of the Project and to propose measures to avoid and mitigate these impacts;		
(xi)	to propose provision of mitigation measures so as to minimize pollution, environmental disturbance and nuisance during construction and operation of Project;		
(xii)	to investigate the feasibility, practicability, effectiveness and implications of the proposed mitigation measures;		
(xiii)	to identify, predict and evaluate the residual environmental impacts (i.e. after practicable mitigation) and the cumulative effects expected to arise during the construction and operation phases of the Project in relation to the sensitive receivers and potential affected uses;		
(xiv)	to identify, assess and specify methods, measures and standards, to be included in the detailed design, construction and operation of the Project which are necessary to mitigate these environmental impacts and cumulative effects and reduce them to acceptable levels;		
(xv)	to investigate the extent of the secondary environmental impacts that may arise from the proposed mitigation measures and to identify constraints associated with the mitigation measures recommended in the EIA study, as well as the provision of any necessary modification; and		
	to design and specify environmental monitoring and audit requirements to check the effective implementation of the recommended environmental protection and pollution control measures.		
S3	DETAILED REQUIREMENTS OF THE EIA STUDY		
S3.1	The Purpose		
	The purpose of this EIA study brief is to scope the key issues of the EIA study and to specify the environmental issues that are required to be reviewed and assessed in the EIA study. The Applicant has to demonstrate in the EIA report that the criteria in the relevant sections of the Technical Memorandum on the Environmental Impact Assessment Process of the Environmental Impact Assessment Ordinance (hereinafter referred to as "the TM") are complied with.	✓	The EIA Report has covered the items required under the Study Brief and requirement under the EIAO-TM.
S3.2	The Scope		
S3.2.1	The scope of this EIA study shall cover the Project and associated works proposed in the Project Profile and mentioned in Section 1.2 above. The EIA study shall address the likely key issues described below, together with any other key issues identified during the course of the EIA study:		
(i)	potential water quality impacts on water system(s) including the Deep Bay Water Control Zone and relevant water sensitive receivers (e.g. Shan Pui River), during construction and operation of the Project, in particular arising from the effluent discharge from the operating Yuen Long STW;	✓	S5.7

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
(ii)	potential air quality and noise impacts on the sensitive receivers during construction and operation of the Project, in particular arising from odour and noise emissions from the operating STW and the co-digestion facility for imported organic wastes and construction dust and noise during construction of the Project;	✓	S3.7, S4.7
(iii)	potential waste management issues and impacts during construction and operation of the Project, in particular arising from handling and disposal of construction & demolition materials, sewage sludge and screenings;	✓	S6.5
(iv)	potential extent of land contamination within any project area for development works and relevant mitigation measures;	✓	S7.7
(v)	potential ecological and fisheries impacts during construction and operation of the Project;	✓	S8.8 – S8.9, S9.5 – S9.6
(vi)	potential landscape impact arising from the Project and potential visual impact arising from the above-ground structures of the Project;	✓	S10.6 and S10.7
(vii)	potential hazard to life due to generation, storage, utilization, processing and transmission (if applicable) of biogas during construction and operation of the Project;	✓	S11.5 – S11.8
(viii)	measures to avoid or minimize potential human health impacts associated with reuse of treated sewage effluent during operation of the Project;	✓	S2.5.2.13 – S2.5.2.14
(ix)	potential cumulative impacts of the Project, through interaction or in combination with other existing, committed and planned projects in the vicinity of the Project.	✓	S2.10, S3.7, S4.7, S5.7, S6.5, S7.7, S8.9, S9.6, S10.6 - S10.7, S11.6 – S11.8
S3.3	Description of the Project		
S3.3.1	<u>Purpose(s) and Objectives of the Project</u> The Applicant shall provide information on the need of the Project, including the purpose, objectives and environmental benefits of the Project, and describe the scenarios with and without the Project.	✓	S2.2 – S2.4
S3.3.2	<u>Consideration of Alternative Design and Layout</u> The Applicant shall present in the EIA report the consideration of alternative design and layout of the Project, including alternative treatment processes and internal layouts, alternative locations for the new treatment facilities, alternative/ phased installation for different flow projections, alternative designs to avoid or minimise emergency discharges and alternative scale/size of the above-ground structures, with a view to avoiding or reducing air quality, noise, water quality, ecological, fisheries, landscape and visual, hazard to life and human health impacts during construction and / or operation of the Project. Other factors or constraints affecting the design and layout of the Project shall be stated.	✓	S2.5 – S2.6
S3.3.3	<u>Consideration of Alternative Construction Methods and Sequences of Works</u> Taking into consideration of the combined effect with respect to the severity and duration of the construction impacts to the affected sensitive receivers, the EIA study shall explore different construction methods and sequences of works of the Project with a view to avoiding or minimizing adverse environmental impacts during construction of the Project. A comparison of the environmental benefits and disbenefits of applying different construction methods and sequences of works shall be included in the EIA study.	✓	S2.8
S3.4	Technical Requirements The Applicant shall conduct the EIA study to address the environmental aspects described in Sections 3.1, 3.2 and 3.3 above. The assessment shall be based on the best and latest information available during the course of the EIA study. The Applicant shall include in the EIA report details of the construction programme and methodologies. The Applicant shall assess the cumulative environmental impacts from the Project and interacting projects as identified in the EIA study. The EIA study shall include the following technical requirements on specific impacts.	✓	The EIA study was conducted to address all the environmental aspects of the activities as described in Sections 3.1 to 3.3 above. The project information is described in Section 2 of the

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
			EIA report while technical assessments are presented in Section 3 to Section 11.
S3.4.1	Air Quality Impact		
S3.4.1.1	The Applicant shall follow the criteria and guidelines for evaluating and assessing air quality impact as stated in section 1 of Annex 4 and Annex 12 of the TM.	✓	S3.2
S3.4.1.2	The study area for air quality impact assessment shall be defined by a distance of 500 meters from the boundary of the Project site or other project locations as identified in the EIA, which shall be extended to include major existing, planned and committed air pollutant emission sources that may have a bearing on the environmental acceptability of the Project. The assessment shall include the existing, planned and committed sensitive receivers within the study area as well as areas where air quality may be potentially affected by the Project. The assessment shall be based on the best available information at the time of the assessment.	✓	S3.4 for ASRs and locations shown in Figure 3.1; Appendix 2.3 for the Master Programme; S3.5 for the identification of the air quality impact.
S3.4.1.3	The assessment of air quality impact arising from the construction and operation of the Project shall be conducted in accordance with the technical requirements in <u>Appendix B</u> of this EIA Study Brief.		S3.6 – S3.7; See below checklist for Appendix B.
S3.4.2	Noise Impact		
S3.4.2.1	The Applicant shall follow the criteria and guidelines for evaluating and assessing noise impact as stated in Annexes 5 and 13 of the TM respectively.	✓	S4.2
S3.4.2.2	Assessment shall include construction noise and fixed noise sources impact assessments of the existing, committed and planned Noise Sensitive Receivers (NSRs) earmarked on the relevant Outline Zoning Plans, Development Permission Area Plans, Outline Development Plans, Layout Plans and other relevant published land use plans, including plans and drawings published by the Lands Department and any land use and development applications approved by the Town Planning Board, in the vicinity of the Project.	✓	S4.4 for the NSRs while locations shown in Figure 4.1. Identified noise impact was addressed in S4.5
S3.4.2.3	The noise impact assessment for construction and operation of the Project shall follow the detailed technical requirements given in <u>Appendix C</u> .	✓	S4.6 – S4.7; See below checklist for Appendix C.
S3.4.3	Water Quality Impact		
S3.4.3.1	The Applicant shall follow the criteria and guidelines for evaluating and assessing water pollution as stated in Annexes 6 and 14 of the TM.	✓	S5.2
S3.4.3.2	The study area for the water quality impact assessment shall include areas within 500 metres from the boundary of the Project site and shall cover the Deep Bay Water Control Zone as designated under the Water Pollution Control Ordinance (Cap 358) and water sensitive receivers in the vicinity of the Project. The study area shall be extended to include other areas if they are found also being impacted during the course of the EIA study and have a bearing on the environmental acceptability of the Project.	✓	Figures 5.1 and 5.2 showed water sensitive receivers assessed in this Study and detailed in S5.4 and S5.5.
S3.4.3.3	The water quality impact assessment for construction and operation of the Project shall follow the detailed technical requirements given in <u>Appendix D</u> .	✓	S5.6 – S5.7; See below Checklist for Appendix D
S3.4.4	Waste Management Implication and Land Contamination		
S3.4.4.1	The Applicant shall follow the criteria and guidelines for evaluating and assessing waste management implication as stated in Annexes 7 and 15 of the TM.	✓	S6.2
S3.4.4.2	The assessment of the waste management implication arising from construction and operation of the Project shall follow the detailed technical requirements given in <u>Appendix E</u> .	✓	S6.4
S3.4.4.3	The Applicant shall follow the guidelines for evaluating and assessing potential land contamination issue as stated in Section 3.1 of Annex 19 of the TM.	✓	S7.2 – S7.5
S3.4.4.4	The assessment of the potential land contamination issue shall follow the detailed requirements given in <u>Appendix E</u> .	✓	S7.6 – S7.7
S3.4.5	Ecological Impact (Terrestrial and Aquatic)		

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
S3.4.5.1	The Applicant shall follow the criteria and guidelines for evaluating and assessing ecological impact as stated in Annexes 8 and 16 of the TM.	✓	S8.2
S3.4.5.2	The assessment area for the purpose of this ecological impact assessment shall include areas within 500m distance from the boundary of the Project and any associated works as well as any other areas likely to be impacted by the Project. For aquatic ecology, the assessment area shall be the same as the water quality impact assessment described in section 3.4.3.	✓	S8.3 – S8.5; Figures 8.1 – 8.3 as well as Figures 5.1 – 5.2.
S3.4.5.3	The ecological impact assessment for construction and operation of the Project shall follow the detailed technical requirements given in <u>Appendix F</u> .	✓	S8.8 – S8.9; See below Checklist for Appendix F
S3.4.6	Fisheries Impact		
S3.4.6.1	The applicant shall follow the criteria and guidelines for evaluating and assessing fisheries impact as stated in Annexes 9 and 17 of the Technical Memorandum under EIA Ordinance.	✓	S9.2
S3.4.6.2	The assessment area shall include all areas within a distance of 500m from the site boundaries of the Project. This assessment area shall be extended to include other areas if they are also found being impacted by the construction or operation of the Project during the course of the EIA study. Special attention should be given to pond culture resources and activities as well as any water courses which serve as water sources for fish ponds.	✓	S9.3 and Figure 9.1; S9.4
S3.4.6.3	The fisheries impact assessment for construction and operation of the Project shall follow the detailed technical requirements given in <u>Appendix G</u> .	✓	S9.5 – S9.6; See below Checklist for Appendix G
S3.4.7	Landscape and Visual Impacts		
S3.4.7.1	The Applicant shall follow the criteria and guidelines as stated in Annexes 10 and 18 of the TM and the EIAO Guidance Note No.8/2010 on "Preparation of Landscape and Visual Impact Assessment under the Environmental Impact Assessment Ordinance" for evaluating and assessing the landscape and visual impacts.	✓	S10.2
S3.4.7.2	The assessment area for landscape impact assessment shall include all areas within a 500m distance from the site boundary of the Project. The assessment area for the visual impact assessment shall be defined by the visual envelope of the Project.	✓	S10.3
S3.4.7.3	The landscape and visual impact assessments for construction and operation of the Project shall follow the detailed technical requirements given in <u>Appendix H</u> .	✓	S10.6 & S10.7; See below Checklist for Appendix H
S3.4.8	Hazard to Life		
S3.4.8.1	The Applicant shall follow the criteria for evaluating hazard to life as stated in section 2 of Annex 4 of the TM.	✓	S11.2
S3.4.8.2	The hazard to life assessment shall follow the detailed technical requirements given in <u>Appendix I</u> of this EIA study brief.	✓	S11.3; See below Checklist for Appendix I
S3.4.9	Summary of Environmental Outcomes		
S3.4.9.1	The EIA report shall contain a summary of key environmental outcomes arising from the EIA study, including environmental benefits of the Project and the environmental protection measures recommended, population and environmentally sensitive areas protected, recommended environmentally friendly designs, key environmental problems avoided and any compensation areas included.	✓	S14.2
S3.4.10	Environmental Monitoring and Audit (EM&A) Requirements		
S3.4.10.1	The Applicant shall identify and justify in the EIA study whether there is any need for EM&A activities during the construction and operation phases of the Project and, if affirmative, define the scope of EM&A requirements for the Project in the EIA study.	✓	S12
S3.4.10.2	Subject to the confirmation of the EIA study findings, the Applicant shall follow the guidelines for an EM&A programme as stated in Annex 21 of the TM.	✓	S12

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
S3.4.10.3	The Applicant shall prepare a Project Implementation Schedule in the form of a checklist as shown in <u>Appendix J</u> of this EIA study brief. It shall contain the EIA study recommendations and mitigation measures with reference to the implementation programme.	✓	S13 and Appendix B of EM&A Manual
S4	DURATION OF VALIDITY		
S4.1	The Applicant shall notify the Director of the commencement of the EIA study. If the EIA study does not commence within 36 months after the date of issue of this EIA study brief, the Applicant shall apply to the Director for a fresh EIA study brief before commencement of the EIA study.	✓	Noted
S5	REPORT REQUIREMENTS		
S5.1	In preparing the EIA report, the Applicant shall refer to Annex 11 of the TM for the contents of an EIA report. The Applicant shall also refer to Annex 20 of the TM, which stipulates the guidelines for the review of an EIA report. When submitting the EIA report to the Director, the Applicant shall provide a summary, pointing out where in the EIA report the respective requirements of this EIA study brief and the TM (in particular Annexes 11 and 20) have been addressed and fulfilled.	✓	Noted
S5.2	The Applicant shall supply the Director with hard and electronic copies of the EIA report and the executive summary in accordance with the requirements given in <u>Appendix K</u> . The Applicant shall, upon request, make additional copies of EIA report/documents available to the public, subject to payment by the interested parties of full costs of printing.	✓	Noted
S6	OTHER PROCEDURAL REQUIREMENTS		
S6.1	If there is any change in the name of Applicant for this EIA study brief during the course of the EIA study, the Applicant must notify the Director immediately.	✓	Noted
S6.2	If there is any key change in the scope of the Project mentioned in Section 1.2 of this EIA study brief and in Project Profile (No. PP-570/2018), the Applicant must seek confirmation from the Director in writing on whether or not the scope of issues covered by this EIA study brief can still cover the key changes, and the additional issues, if any, that the EIA study must also address. If the changes to the Project fundamentally alter the key scope of the EIA study brief, the Applicant shall apply to the Director for a fresh EIA study brief.	✓	Noted
	Appendix B Requirements for Air Quality Impact Assessment		
1.	The air quality impact assessment shall include the following:		
(i)	Background and Analysis of Activities Provision of background information relating to air quality issues relevant to the Project, e.g. description of the types of activities of the Project that may affect air quality during construction and operation stages of the Project.	✓	S3.3
(ii)	Provision of an account, where appropriate, of the consideration/ measures that have been taken into consideration during the planning of the Project to abate the air pollution impact. The Applicant shall consider alternative locations of the new treatment facilities, alternative treatment processes of STW and alternative construction methods to minimize the air quality impact during construction and operation stages of the Project.	✓	S2.5 – S2.8
(iii)	Presentation of background air quality levels in the study area for the purpose of evaluating cumulative air quality impacts during construction and operation stages of the Project.	✓	S3.3, the background air quality levels were presented in Table 3.3 and Table 3.4
2.	Identification of Air Sensitive Receivers (ASRs) and Examination of Emission / Dispersion Characteristics		
(i)	Identification and description of existing, planned and committed ASRs that would likely be affected by the Project, including those earmarked on the relevant Outline Zoning Plans, Development Permission Area Plans, Outline Development Plans and Layout Plans and other relevant published land use plans, including plans and	✓	ASRs were identified in S3.4 which summarized in Table 3.5 and indicated in Figure 3.1

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
(ii)	drawings published by Lands Department and any land use and development applications approved by the Town Planning Board. The Applicant shall select the assessment points of the identified ASRs that represent the worst impact point of these ASRs. A map clearly showing the location and description such as name of buildings, their uses and height of the selected assessment points shall be given. The separation distances of these ASRs from the nearest emission sources shall also be given.	✓	S3.5
(iii)	Provision of a list of air pollution emission sources, including any nearby emission sources which are likely to have impact related to the Project based on the analysis of the construction and operation activities in Section 1 above. Confirmation regarding the validity of the assumptions adopted and the magnitude of the activities (e.g. volume of construction material handled, etc.) shall be obtained from the relevant government departments/authorities and documented.	✓	Concurrent projects were identified under S3.5 & S3.6 and listed in Table 3.6, while cumulative impacts were considered and incorporated into S3.7.
3.	Construction Phase Air Quality Impact		
(i)	The Applicant shall follow the requirements stipulated under the Air Pollution Control (Construction Dust) Regulation to ensure that construction dust impacts are controlled within the relevant standards as stipulated in Section 1 of Annex 4 of the TM. A monitoring and audit programme for the construction phase of the Project shall be devised to verify the effectiveness of the proposed control measures so as to ensure proper control of fugitive dust emission.	✓	S3.2
(ii)	If the Applicant anticipates that the Project will give rise to significant construction dust impacts likely to exceed recommended limits in the TM at the ASRs despite the incorporation of the dust control measures proposed, a quantitative assessment should be carried out to evaluate the construction dust impact at the identified ASRs. The Applicant shall follow the methodology set out in Section 5 below when carrying out the quantitative assessment.	✓	The predicted cumulative dust impacts at the ASRs was listed in Table 3.20, result showing that no adverse air quality impact due to the construction of YLEPP is anticipated.
(iii)	The applicant shall ensure that any odour emission resulting from the construction activities of the Project is properly controlled and meet the relevant criteria as stipulated in Section 1 of Annex 4 of the TM. A monitoring and audit programme for the construction phase of the Project shall be devised to verify the effectiveness of the proposed control measures so as to ensure proper odour emission control.	✓	As mentioned in S3.5.1, all tanks/sludge would be cleaned before demolition, as such, anticipated that no odour emission would be resulting from the construction activities of the Project.
4.	Operational Phase Air Quality Impact		
(i)	The Applicant shall assess the potential air quality impact arising from the activities in the proposed Project site, including odour and gaseous emissions, if any, from the sewage treatment works and sludge generated and odour from transport of sludge and organic wastes, during the operational phase based on assumed reasonably worst case scenario under normal operating condition.	✓	S3.5
(ii)	If the Applicant anticipates that the Project will give rise to significant operational phase air quality impacts likely to exceed the recommended limits in the TM at the ASRs, a quantitative assessment should be carried out to evaluate the operational phase air quality impacts at the identified ASRs. The Applicant shall follow the methodology set out in Section 5 below when carrying out the quantitative assessment. A monitoring and audit programme for the operational stage shall be devised to verify the effectiveness of the control measures proposed so as to ensure	✓	Quantitative assessment under operational phase was conducted and presented in S3.7 in according to methodology provided in S3.6. S3.10 provided an EM&A

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
	proper operational odour control.		requirement to verify the effectiveness of the control measures proposed so as to ensure proper operational odour control.
5.	Quantitative Assessment Methodology		
(i)	The Applicant shall apply the general principles enunciated in the modeling guidelines in Appendix B1 while making allowance for the specific characteristic of the Project. This specific methodology must be documented in such level of details, preferably assisted with tables and diagrams, to allow the readers of the EIA report to grasp how the model has been set up to simulate the situation under study without referring to the model input files. Detailed calculations of air pollutants emission rates for input to the model shall be presented in the EIA report. The Applicant must ensure consistency between the text description and the model files at every stage of submissions for review. In case of doubt, prior agreement between the Applicant and the Director on the specific modelling details should be sought.	✓	Modelling methodology was presented in S3.6 while calculation of air pollutants emission rates for input to the model was provided in Appendices 3.3, 3.4, 3.6, 3.9 and 3.10.
(ii)	The Applicant shall identify the key/representative air pollution parameters (types of pollutants and averaging time concentrations) to be evaluated and provide explanation for selecting such parameters for assessing the impact from the Project.	✓	S3.5
(iii)	The Applicant shall calculate the overall cumulative air quality impact at the ASRs identified under Section 2 above and compare these results against the criteria set out in section 1 of Annex 4 in the TM. The predicted air quality impacts (both unmitigated and mitigated) shall be presented in the form of summary table(s) and pollution contours, to be evaluated against the relevant air quality standards and on any effect they may have on the land use implications. Plans of a suitable scale should be used to present pollution contours to allow buffer distance requirements to be determined properly.	✓	Cumulative air quality impact was presented in S3.7 and Figures 3.2 to 3.49. Detailed prediction results were provided in Appendices 3.12 to 3.13.
(iv)	For the quantitative assessment of the odour emission impact upon the identified ASRs, the odour emission strength/ rates shall be based on the results of odorous air sampling/ measurement conducted directly at the odour emission sources within the Project boundary. The details of such odorous air sampling/ measurement, including the methodology and calculation of the odour emission strength/rates, shall be presented in the EIA report.	✓	Details of odour survey and sampling was enclosed in Appendix 3.8.
6.	Mitigation Measures for Non-compliance		
	The Applicant shall propose remedies and mitigating measures where the predicted air quality impact exceeds the criteria set in Section 1 of Annex 4 in the TM. These measures and any constraints on future land use planning shall be agreed with the relevant government departments/authorities and documented. The Applicant shall demonstrate quantitatively whether the residual impacts after incorporation of the proposed mitigating measures will comply with the criteria stipulated in Section 1 of Annex 4 in the TM.	✓	S3.8
7.	Submission of Model Files		
	All input and output files of model run(s) including those files for generating the pollution contours as well as the emission calculation worksheets, shall be submitted to the Director in electronic format together with the submission of the EIA report.	✓	Noted and submitted together with the EIA Report.
	Appendix B-1 Air Quality Modelling Guidelines [The information contained in this Appendix is meant to assist the Applicant in performing the air quality assessment. The Applicant must exercise professional judgment in applying this general information.]		
	The air quality modelling guidelines shall include the following guidelines as		Air quality models were followed guidelines under Appendix B-1 and website mentioned.

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
	published on the website of the Environmental Protection Department. (http://www.epd.gov.hk/epd/english/environmentinhk/air/guide_ref/guide_aqa_mod_el.html):		
i)	Guidelines on Choice of Models and Model Parameters (Revised);	✓	S3.6
ii)	Guidelines on Assessing the "Total" Air Quality Impact (Revised);	✓	Ditto
iii)	Guidelines on the Use of Alternative Computer Models in Air Quality Assessment;	✓	Ditto
iv)	Guidelines on the Estimation of PM2.5 for Air Quality Assessment in Hong Kong; and	✓	Ditto
v)	Guidelines on the Estimation of 10-minute Average SO2 Concentration for Air Quality Assessment in Hong Kong.	✓	Ditto
1.	Appendix C Requirements for Noise Impact Assessment The noise impact assessment shall include the following: Description of the Noise Environment		
1.1	The Applicant shall describe the prevailing noise environment in the EIA report.	✓	S4.3
1.2	The Applicant shall conduct prevailing background noise surveys to determine the standards for evaluating noise impact from fixed noise source. The respective noise environment should be documented in the EIA report.	✓	Result of background noise survey was detailed in Appendix 4.1 and summarized in Table 4.4. Determined fixed plant noise criteria for representative NSRs were presented in Table 4.6.
2.	Construction Noise Impact Assessment		
2.1	Construction Noise Impact Assessment Methodology		
2.1.1	The Applicant shall carry out construction noise impact assessment (excluding percussive piling) of the Project during daytime, i.e. 7am to 7pm, on weekdays other than general holidays in accordance with methodology in paragraphs 5.3 and 5.4 of Annex 13 of the TM.	✓	S4.6.1
2.2	Identification of Construction Noise Impact		
2.2.1	Identification of Assessment Area and Noise Sensitive Receivers (NSRs)		
(a)	The Applicant shall propose the assessment area for agreement of the Director before commencing the assessment. The assessment area for the construction noise impact assessment shall generally include areas within 300 metres from the boundary of the Project and the works of the Project.	✓	The assessment area was agreed with EPD dated 14 Dec 2018
(b)	The Applicant shall identify all existing NSRs in the assessment area and select assessment points to represent identified NSRs for carrying out quantitative construction noise impact assessment described below.	✓	S4.4
(c)	The assessment points shall be confirmed with the Director prior to the commencement of the quantitative construction noise impact assessment and may be varied subject to the best and latest information available during the course of the EIA study.	✓	The assessment points was agreed with EPD dated 14 Dec 2018
(d)	A map showing the location and description such as name of building, use, and floor of each and every selected assessment point shall be given. Photographs of existing NSRs shall be appended to the EIA report.	✓	S4.4, Figure 4.1, Appendix 4.2
2.2.2	Inventory of Noise Sources The Applicant shall identify and quantify an inventory of noise sources for representative construction equipment for the purpose of construction noise impact assessment.	✓	Appendices 4.4 and 4.7
2.3	Prediction and Evaluation of Construction Noise Impact		
2.3.1	Phases of Construction		

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
	The Applicant shall identify representative phases of construction that would have noticeable varying construction noise emissions at existing NSRs at the assessment area for agreement of the Director before commencing the construction noise impact assessment.	✓	Appendix 4.3
2.3.2	Scenarios The Applicant shall quantitatively assess the construction noise impact, with respect to criteria set in Annex 5 of the TM, of unmitigated scenario and mitigated scenario at different phases of construction of the Project.	✓	S4.7 – 4.8, calculation was shown in Appendices 4.5 and 4.8
2.3.3	Prediction of Noise Impact		
(a)	The Applicant shall present the predicted noise levels in Leq (30 min) dB(A) at the selected assessment points at various representative floor levels (in m P.D.) on tables and plans of suitable scale.	✓	Predicted noise level was summarized in Table 4.7 and Table 4.9.
(b)	The assessment shall cover the cumulative construction noise impact resulting from the construction works of the Project and other concurrent projects identified during the course of the EIA study on existing NSRs within the assessment area.	n/a	As shown in Table 2.8 and S4.5.1.4, no concurrent projects would be required to consider in the EIA Study. Please refer to Table 4.7 and Table 4.9.
(c)	The potential construction noise impact under different phases of construction shall be quantified by estimating the total number of dwellings, classrooms and other noise sensitive receivers that will be exposed to noise impact exceeding the criteria set in Annex 5 in the TM.		
(d)	The Applicant shall, as far as practicable, formulate a reasonable construction programme so that no work will be required in restricted hours as defined under the Noise Control Ordinance (NCO). In case the Applicant needs to evaluate whether construction works in restricted hours as defined under the NCO are feasible or not in the context of programming construction works, reference should be made to relevant technical memoranda issued under the NCO. Regardless of the results of construction noise impact assessment for restricted hours, the Noise Control Authority will process Construction Noise Permit (CNP) application, if necessary, based on the NCO, the relevant technical memoranda issued under the NCO, and the contemporary conditions/situations. This aspect should be explicitly stated in the noise chapter and the conclusions and recommendations chapter in EIA report.	✓	S4.2.2
2.4	Mitigation of Construction Noise Impact		
2.4.1	Direct Mitigation Measures Where the predicted construction noise impact exceeds the criteria set in Table 1B of Annex 5 of the TM, the Applicant shall consider and evaluate direct mitigation measures including but not limited to, movable barriers, enclosures, quieter alternative methods, re-scheduling, restricting hours of operation of noisy tasks, etc. The feasibility, practicability, programming and effectiveness of the recommended mitigation measures shall be assessed. Any direct mitigation measures recommended should be well documented in the report. Specific reasons for not adopting certain direct mitigation measures to reduce the noise to a level meeting the criteria in the TM or to maximize the protection for the NSRs as far as possible should be clearly substantiated and documented in the EIA report.	✓	S4.8.1
2.5	Evaluation of Residual Construction Noise Impact Upon exhaust of direct mitigation measures, if the mitigated noise impact still exceeds the relevant criteria in Annex 5 of the TM, the Applicant shall identify, predict, evaluate the residual construction noise impact in accordance with section 4.4.3 of the TM and estimate the total number of existing dwellings, classrooms and other noise sensitive elements that will be exposed to residual noise impact exceeding the criteria set in Annex 5 in the TM.	✓	S4.9.1, no residual construction noise impact is anticipated.
3.	Fixed Noise Sources Impact Assessment		

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
3.1	<u>Fixed Noise Sources Impact Assessment Methodology</u> The Applicant shall carry out fixed noise sources impact assessment from the Project in accordance with the methodology in paragraph 5.2 of Annex 13 of the TM.	✓	S4.6.2
3.2	<u>Identification of Fixed Noise Sources Impact</u>		
3.2.1	<u>Identification of Assessment Area and Noise Sensitive Receivers (NSRs)</u>		
(a)	The Applicant shall propose the assessment area for agreement of the Director before commencing the assessment. The assessment area for the fixed noise impact shall generally include areas within 300 metres from the boundary of the Project and the works of the Project.	✓	The assessment area was agreed with EPD dated 14 Dec 2018
(b)	The Applicant shall identify all existing, committed and planned NSRs in the assessment area and select assessment points to represent identified NSRs for carrying out fixed noise sources impact assessment described below.	✓	S4.4
(c)	The assessment points shall be confirmed with the Director prior to the commencement of the quantitative fixed noise sources impact assessment and may be varied subject to the best and latest information available during the course of the EIA study.	✓	The assessment points was agreed with EPD dated 14 Dec 2018
(d)	A map showing the location and description such as name of building, use, and floor of each and every selected assessment point shall be given. Photographs of existing NSRs shall be appended to the EIA report.	✓	S4.4, Figure 4.1, Appendix 4.2
(e)	For planned noise sensitive land uses without committed site layouts, the Applicant should use the relevant landuse and planning parameters and conditions to work out representative site layouts for fixed noise sources impact assessment purpose. However, such parameters and conditions together with the representative site layouts and any constraints identified shall be confirmed with the relevant responsible parties including Planning Department and Lands Department.	n/a	S4.4.1.1, no planned NSRs is identified within 300m assessment area.
3.2.2	<u>Inventory of Noise Sources</u>		
(a)	The Applicant shall identify and quantify an inventory of noise sources for fixed noise sources impact assessment. The inventory of noise sources shall include, but not limited to noise associated with any permanent and temporary industrial noise sources.	✓	S4.5.2 and Appendix 4.6.
(b)	The Applicant shall provide document or certificate, with a methodology accepted by recognized national/international organisation, for the sound power level of each type of fixed noise sources.	✓	Details shown in Appendix 4.6.
(c)	Validity of the inventory shall be confirmed with the relevant government departments/authorities and documented in the EIA report.	✓	As mentioned in S4.6.2 and Appendix 4.6, the fixed noise plant inventory for the assessment has been confirmed by Project proponent.
3.3	<u>Prediction and Evaluation of Fixed Noise Sources Impact</u>		
3.3.1	<u>Scenarios</u>		
(a)	The Applicant shall quantitatively assess the fixed noise sources impact of the Project, with respect to the criteria set in Annex 5 of the TM, of unmitigated scenario and mitigated scenario at assessment year of various operation modes including, but not limited to (i) the worst operation mode which represents the maximum noise emission in connection of identified noise sources of the Project; and (ii) any other operation modes as confirmed with the Director.	✓	S4.7. Worst-case scenario is considered.
(b)	Validity of the above operation modes shall be confirmed with relevant departments/authorities and documented in the EIA report.	✓	S4.5.2.1.
3.3.2	<u>Prediction of Noise Impact</u>		

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
(a)	The Applicant shall present the predicted noise levels in Leq (30 min) dB(A) at the selected assessment points at various representative floor levels (in m P.D.) on tables and plans of suitable scale.	✓	Table 4.8 and Table 4.10
(b)	The assessment shall cover the cumulative fixed noise sources impact associated with the operation of the Project on existing, committed and planned NSRs within the assessment area.	✓	Detailed in Appendices 4.6 and 4.9
(c)	The potential fixed noise sources impact under different scenarios shall be quantified by estimating the total number of dwellings, classrooms and other noise sensitive receivers that will be exposed to noise impact exceeding the criteria set in Annex 5 in the TM.	✓	Please refer to Table 4.8 and Table 4.10.
3.4	<u>Mitigation of Fixed Noise Sources Impact</u>		
3.4.1	<u>Direct Mitigation Measures</u> Where the predicted fixed noise sources impact exceeds the criteria set in Table 1A of Annex 5 of the TM, the Applicant shall consider and evaluate direct mitigation measures including but not limited to noise barrier/enclosure, screening by noise tolerant buildings, etc. The feasibility, practicability, programming and effectiveness of the recommended mitigation measures shall be assessed. Any direct mitigation measures recommended shall be well documented in the report. Specific reasons for not adopting certain direct mitigation measures to reduce the noise to a level meeting the criteria in the TM or to maximize the protection for the NSRs as far as possible should be clearly substantiated and documented in the EIA report.	✓	S4.8.2
3.5	<u>Evaluation of Residual Fixed Noise Sources Impact</u> Upon exhaust of direct mitigation measures, if the mitigated noise impact still exceeds the relevant criteria in Annex 5 of the TM, the Applicant shall identify, predict, evaluate the residual fixed noise sources impact in accordance with Section 4.4.3 of the TM and estimate the total number of existing dwellings, classrooms and other noise sensitive elements that will be exposed to residual noise impact exceeding the criteria set in Annex 5 in the TM.	✓	S4.9.2, no residual fixed plant noise impact is anticipated.
	Appendix D Requirements for Water Quality Impact Assessment		
1.	The Applicant shall identify and analyse physical, chemical and biological disruptions of the water system(s) arising from the construction and operation of the Project.	✓	S5.4 and S5.5
2.	The Applicant shall predict, quantify and assess any water quality impacts arising from the construction and operation of the Project by appropriate mathematical modelling and/or other techniques proposed by the Applicant and approved by the Director. The mathematical modelling requirements are set out in Appendix D-1. Possible impacts due to dredging, fill extraction, backfilling, transportation and disposal of dredged materials, other marine works activities, effluent discharge, thermal/cooling water and biocide discharge, overflow of sewage pumping stations and site runoff shall include changes in hydrology, flow regime, sediment erosion and deposition patterns, morphological change of seabed profile, water quality and sediment quality. The prediction shall include possible different construction stages or sequences of the Project. Affected sensitive receivers shall be identified by the assessment tool with indications of degree of severity	✓	S5.4 to S5.7
3.	The assessment shall include, but not be limited to the following:		
(i)	the water quality impacts of the site run-off generated during the construction stage such as the effluents generated from dewatering associated with piling activities, grouting and concrete washing and those specified in the ProPECC Practice Note 1/94;	✓	S5.7.1
(ii)	the assessment on operation stage shall have regard to the frequency, duration, volume and flow rate of the discharges and its pollutant;	✓	S5.7.2
(iii)	the water quality impacts of temporary, accidental and emergency discharges at the	✓	S5.7

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
(iv)	STW during construction and operation stages of the Project; and the water quality impacts of chemical spillage during construction and operation stages of the Project in particular the accidental spillage associated with transfer and storage of chemicals during operation of the Project.	✓	Ditto
4.	The Applicant shall address water quality impacts due to the construction phase and operational phase of the Project. Essentially, the assessment shall address the following:		
(i)	collect and review background information on affected existing and planned water systems, their respective catchments and sensitive receivers which might be affected by the Project;	✓	S5.3, S5.5
(ii)	characterize water quality of the water systems and sensitive receivers, which might be affected by the Project based on existing best available information or through appropriate site survey and tests;	✓	S5.4
(iii)	identify and analyse relevant existing and planned future activities, beneficial uses and water sensitive receivers related to the affected water system(s). The Applicant should refer to, <i>inter alia</i> , those developments and uses earmarked on the relevant Outline Zoning Plans, Development Permission Area Plans, Outline Development Plans and Layout Plans, and any other relevant published landuse plans;	✓	S5.7
(iv)	identify pertinent water quality objectives and establish other appropriate water quality criteria or standards for the water system(s) and the sensitive receivers identified in (i), (ii) & (iii) above;	✓	S5.2
(v)	review the specific construction methods and configurations, and operation of the Project to identify and predict the likely water quality impacts arising from the Project;	✓	S5.5
(vi)	identify any alternation of any water courses, natural streams, ponds, wetlands, flow regimes of water bodies, catchment types or areas, erosion or sedimentation due to the Project and any other hydrological changes in the study area;	✓	S5.7
(vii)	identify and quantify existing and likely future water pollution sources, including point discharges and non-point sources to surface water runoff, sewage from workforce and polluted discharge generated from the Project,	✓	S5.7
(viii)	provide an emission inventory on the quantities and characteristics of those existing and future pollution sources in the study area. Field investigation and laboratory test, shall be conducted as appropriate to fill relevant information gaps;	✓	S5.3
(ix)	predict and quantify the water quality impacts arising from those alternations and changes identified in (vi) to (viii) above. The prediction shall take into account and include possible different construction and operation stages of the Project;	✓	S5.7
(x)	assess the cumulative impacts due to other related concurrent and planned projects, activities or pollution sources within the study area that may have a bearing on the environmental acceptability of the Project;	✓	S5.6.3.10 and Table 5.14
(xi)	analyze the provision and adequacy of existing and planned future facilities to reduce pollution arising from the point and non-point sources identified in (vii) above;	✓	S5.7
(xii)	develop effective infrastructure upgrading or provision, contingency plan, water pollution prevention and mitigation measures to be implemented during construction and operation stages, including emergency sewage discharge in the case of sewage treatment works and sewage pumping stations, so as to reduce the water quality impacts to within standards. Effluent generated from the Project shall require appropriate collection, treatment and disposal to ensure that there is no net increase in pollution load to Deep Bay. Requirements to be incorporated in the Project contract document shall also be proposed;	✓	S5.8
(xiii)	investigate and develop best management practices to reduce storm water and non-point source pollution as appropriate;	✓	S5.8
(xiv)	evaluate and quantify residual impacts on water system(s) and the sensitive receivers with regard to the appropriate water quality objectives, criteria, standards	✓	S5.9

Section no. of the EIA Study Brief	Study Brief	Status	Remarks														
(xv)	or guidelines; evaluate, predict and characterize the effluent characteristics of the Project with different levels of treatment and disinfection processes. The Applicant shall predict the effluent characteristics by making reference to the influent characteristics, anticipated performance of the treatment and disinfection process at the proposed sewage treatment works, the finding of previous studies, and conducting additional samplings and tests;	✓	S5.7														
(xvi)	devise mitigation measures to avoid or minimize the impacts identified above. The residual water quality impacts of the water systems with regard to the relevant water quality objectives, criteria, standards or guidelines shall be assessed and quantified using appropriate mathematical models set out in <u>Appendix D-1</u> to this study brief; and	✓	S5.8														
(xvii)	recommend appropriate mitigation measures, including a contingency plan, to minimise the duration and impact of emergency overflow discharges during operation stage of the Project.	✓	S5.8														
	Appendix D-1 Hydrodynamic and Water Quality Modelling Requirements <u>Modelling Software General</u>																
1.	The modelling software shall be fully 3-dimensional capable of accurately simulating the stratified condition, salinity transport, and effects of wind and tide on the water body within the model area.	✓	S5.6.3														
2.	The modelling software shall consist of hydrodynamic, water quality, sediment transport and particle dispersion modules. All modules shall have been proven with successful applications locally and overseas.	✓	S5.6.3														
3.	The hydrodynamic, water quality and sediment transport and thermal modules shall be strictly mass conserved at all levels.	✓	S5.6.3														
4.	An initial dilution model shall be used to characterize the initial mixing of the effluent discharge, and to feed the terminal level and size of the plume into the far field water quality modules where necessary. The initial dilution model shall have been proven with successful applications locally and overseas.	✓	S5.6.3.17 and Appendix 5.9														
	<u>Model Details – Calibration and Validation</u>																
1.	The models shall be properly calibrated and validated against applicable existing and/or newly collected field data before their use in this study in the Hong Kong waters, the Pearl Estuary and the Dangan (Lema) Channel. The field data set for calibration and validation shall be agreed with EPD.	✓	S5.6.3 and Appendix 5.1														
2.	Tidal data shall be calibrated and validated in both frequency and time domain manner.	✓	S5.6.3 and Appendix 5.1														
3.	For the purpose of calibration and validation, the model shall run for not less than 15 days of real sequence of tide (excluding model spin up) in both dry and wet seasons with due consideration of the time required to establish initial conditions.	✓	S5.6.3 and Appendix 5.1														
4.	In general the hydrodynamic models shall be calibrated to the following criteria: <table border="1" data-bbox="1706 1522 2418 1774"> <thead> <tr> <th>Criteria</th> <th>Level of fitness with field data</th> </tr> </thead> <tbody> <tr> <td>tidal elevation (@)</td> <td>< 8 %</td> </tr> <tr> <td>maximum phase error at high water and low water</td> <td>< 20 minutes</td> </tr> <tr> <td>maximum current speed deviation</td> <td>< 30 %</td> </tr> <tr> <td>maximum phase error at peak speed</td> <td>< 20 minutes</td> </tr> <tr> <td>maximum direction error at peak speed</td> <td>< 15 degrees</td> </tr> <tr> <td>maximum salinity deviation</td> <td>< 2.5 ppt</td> </tr> </tbody> </table> @ Root mean square of the error including the mean and fluctuating components shall meet the criteria at no less than 80% of the monitoring stations in the model domain	Criteria	Level of fitness with field data	tidal elevation (@)	< 8 %	maximum phase error at high water and low water	< 20 minutes	maximum current speed deviation	< 30 %	maximum phase error at peak speed	< 20 minutes	maximum direction error at peak speed	< 15 degrees	maximum salinity deviation	< 2.5 ppt	✓	S5.6.3 and Appendix 5.1
Criteria	Level of fitness with field data																
tidal elevation (@)	< 8 %																
maximum phase error at high water and low water	< 20 minutes																
maximum current speed deviation	< 30 %																
maximum phase error at peak speed	< 20 minutes																
maximum direction error at peak speed	< 15 degrees																
maximum salinity deviation	< 2.5 ppt																

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
5.	The consultants shall be responsible for acquiring/developing and calibration of the models for use in this study themselves. They may make reference to the models developed under the Update on Cumulative Water Quality and Hydrological Effect of Coastal Developments and Upgrading of Assessment Tool (Agreement No. CE 42/97). They may also propose to use other models subject to agreement with EPD.	✓	S5.6.3
1.	<u>Model Details – Simulation</u> The water quality modelling results shall be qualitatively explainable, and any identifiable trend and variations in water quality shall be reproduced by the model. The water quality model shall be able to simulate and take account of the interaction of dissolved oxygen, phytoplankton, organic and inorganic nitrogen, phosphorus, silicate, BOD, temperature, suspended solids, contaminants release of dredged and disposed material, air-water exchange, <i>E. coli</i> and benthic processes. It shall also simulate salinity. Salinity results simulated by hydrodynamic models and water quality models shall be demonstrated to be consistent.	✓	S5.6.3
2.	The sediment transport module for assessing impacts of sediment loss due to marine works shall include the processes of settling, deposition and re-erosion. The values of the modelling parameters shall be agreed with EPD. Contaminants release and DO depletion during dredging and dumping shall be simulated by the model.	✓	Not applicable.
3.	The models shall at least cover the Hong Kong waters, the Pearl Estuary and the Dangan Channel to incorporate all major influences on hydrodynamic and water quality. A fine grid model may be used for detailed assessment of this study. It shall either be linked to a far field model or form part of a larger model by gradual grid refinement. The coverage of the fine grid model shall be properly designed such that it is remote enough so that the boundary conditions will not be affected by the project. The model coverage area shall be agreed with EPD.	✓	S5.6.3
4.	In general, grid size at the area affected by the project shall be less than 400 m in open waters and less than 75 m around sensitive receivers. The grid shall also be able to reasonably represent coastal features existing and proposed in the project. The grid schematization shall be agreed with EPD.	✓	S5.6.3
1.	<u>Modelling Assessment</u> The assessment shall include the construction and operational phases of the project. Where appropriate, the assessment shall also include maintenance dredging. Scenarios to be assessed shall cover the baseline condition and scenarios with various different options proposed by the Applicant in order to quantify the environmental impacts and improvements that will be brought about by these options. Corresponding pollution load, bathymetry and coastline shall be adopted in the model set up.	✓	No modelling in construction phase is required. For operational phase, please refer to S5.6.3.
2.	Hydrodynamic, water quality, sediment transport and thermal modules, where appropriate, shall be run for (with proper model spin up) at least a real sequence of 15 days spring-neap tidal cycle in both the dry season and the wet season.	✓	Modeling run for hydrodynamic and water quality were presented in Appendices 5.1 – 5.3 and 5.5 – 5.6.
3.	For assessing temporary discharges via emergency outfalls, the Applicant shall estimate discharge loading, pattern and duration. The worst case scenario shall include discharge near slack water of neap tide. A period of at least 15 days spring-neap cycle in wet season, but long enough for recovery of the receiving water, shall be simulated. Detailed methodology shall be agreed with EPD.	✓	The assessment of temporary discharges via emergency outfalls has been assessed in according to the EIA Study Brief.
4.	The results shall be assessed for compliance of Water Quality Objectives.	✓	S5.7
5.	The impact on all sensitive receivers shall be assessed.	✓	S5.7
6.	Cumulative impacts due to other projects, activities or pollution sources within a boundary to the agreement of EPD shall also be predicted and quantified.	✓	S5.7
Appendix E Requirements for Assessment of Waste Management			

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
1.	Implications and Land Contamination The assessment of waste management implication and land contamination shall cover the following: <u>Analysis of Activities and Waste Generation</u> The Applicant shall identify the quantity, quality and timing of the wastes arising as a result of the construction and operation activities of the Project based on the sequence, duration, method and process of these activities, e.g. any dredged/excavated sediment/mud, construction and demolition materials, floating refuse, sewage sludge, screening, grits, chemical waste and other wastes which will be generated during construction and operation stages. The Applicant shall adopt appropriate design, general layout, construction methods and programme to minimize the generation of public fill/inert construction and demolition (C&D) materials and maximize the use of public fill/inert C&D materials for other construction works.	✓	S6.5
2.	<u>Proposal for Waste Management</u>		
(i)	Prior to considering the disposal options for various types of wastes, opportunities for reducing waste generation, on-site or off-site re-use and recycling shall be evaluated. Measures that can be taken in planning and design stages e.g. by modifying the design approach and in the construction stage for maximizing waste reduction shall be separately considered;	✓	S6.4, S6.6
(ii)	After considering the opportunities for reducing waste generation and maximizing re-use, the types and quantities of the wastes required to be disposed of as a consequence shall be estimated and the disposal methods/options for each type of wastes shall be described. The disposal methods/options recommended for each type of wastes shall take into account the result of the assessment in Section 2 (iv) below;	✓	S6.4, S6.5, Tables 6.1 to 6.6
(iii)	The EIA report shall state the transportation routings and the frequency of the trucks/vessels involved, any barging point or conveyor system to be used, the stockpiling areas and the disposal outlets for the waste identified; and	✓	S6.6, Table6.5
(iv)	The impact caused by handling (including stockpiling, labelling, packaging & storage), collection, transportation and re-use/disposal of wastes shall be addressed and appropriate mitigation measures shall be proposed. This assessment shall cover the following areas : - potential hazard; - air and odour emissions; - noise; - wastewater discharge; and - public transport.	✓	S6.5, S6.6
3.	Land Contamination		
3.1	The Applicant shall identify the potential land contamination site(s) within the Project Area (Appendix A refers) and, if any, within the boundaries of associated areas (e.g. work areas) of the Project.	✓	S7.5
3.2	The Applicant shall provide a clear and detailed account of the present land use (including description of the activities, chemicals and hazardous substances handled, with clear indication of their storage and location, by reference to a site layout plan) and a complete past land uses history, in chronological order, in relation to possible land contamination (including accident records and change of land use(s) and the like).	✓	S7.4 & S7.5
3.3	If any contaminated land uses is identified, the Applicant shall carry out the land contamination assessment as detailed from sub-section (i) to (iii) below and propose measure to avoid disposal -:	✓	S7.7

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
	(i) During the course of the EIA study, the Applicant shall submit a Contamination Assessment Plan (CAP) to the Director for endorsement prior to conducting an actual contamination impact assessment of the land or site(s). The CAP shall include a proposal with details on representative sampling and analysis required to determine the nature and the extent of the contamination of the land or site(s). Alternatively, the Applicant may refer to other previously agreed and still relevant and valid CAP(s) for the concerned site(s).	✓	A review of the CAP was conducted and supplementary information was documented in Appendix 7.1
	(ii) Based on the endorsed CAP, the Applicant shall conduct a land contamination impact assessment and submit a Contamination Assessment Report (CAR) to the Director for endorsement. If land contamination is confirmed, a Remedial Action Plan (RAP) to formulate viable remedial measures with supporting documents, such as agreement by the relevant facilities management authorities, shall be submitted to the Director for approval. The Applicant shall then clean up the contaminated land or site(s) according to the approved RAP, and a Remediation Report (RR) to demonstrate adequate clean-up should be prepared and submitted to the Director for endorsement prior to the commencement of any development or redevelopment works within the Project Area. The CAP, CAR and RAP shall be documented in the EIA report.	n/a	S7.7, as the concerned facilities/areas are in operation, it would not be feasible to carry out the proposed SI works under the EIA Study. The proposed SI works and any necessary remediation action were recommended to be carried out after decommissioning but prior to the construction works at the concerned facilities/area. Noted.
	(iii) If there are potential contaminated sites which are inaccessible for conducting sampling and analysis during the course of the EIA study, e.g. due to site access problem, the Applicant's CAP shall include :	n/a	
	(a) a review of the available and relevant information;	n/a	
	(b) an initial contamination evaluation of these sites and possible remediation methods;	n/a	
	(c) a confirmation of whether the contamination problem at these sites would be surmountable;	n/a	
	(d) a sampling and analysis proposal which shall aim at determining the nature and the extent of the contamination of these sites ; and	n/a	
	(e) where appropriate, a schedule of submission of revised or supplementary CAP, CAR, RAP and RR as soon as these sites become accessible.	n/a	
1.	Appendix F Requirements for Ecological Impact Assessment (Terrestrial and Aquatic) In the ecological impact assessment, the Applicant shall examine the flora, fauna and other components of the ecological habitats within the assessment area. The aim shall be to protect, maintain or rehabilitate the natural environment. In particular, the Project shall avoid or minimise impacts on recognised sites of conservation importance and other ecologically sensitive areas such as the Mai Po Inner Deep Bay Ramsar Site, Wetland Conservation Area (WCA) and Wetland Buffer Area (WBA) as defined in Town Planning Board Guideline 12C and mudflats / mangrove along the embankment and at confluence of Kam Tin River and Shan Pui River. The assessment shall identify and quantify as far as possible the potential ecological impacts to the natural environment and the associated wildlife groups and habitats/species arising from the Project including its construction and operation phases as well as the subsequent management and maintenance of the proposals.	✓	S8
2.	The assessment shall include the followings:		
(i)	Review the findings of relevant studies/surveys and collection of the available information regarding the ecological characters of the assessment area;	✓	S8.4 – S8.6
(ii)	Evaluation of information collected and identification of any information gap relating to the assessment of potential ecological impact, and determine the ecological field surveys and investigations that are needed for an impact assessment as required in the following sections;	✓	S8.7

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
(iii)	Carrying out necessary field surveys of at least 12 months and investigations to verify the information collected in (ii) above, to fill the information gaps identified and to fulfill the objectives of the EIA study;	✓	S8.3.3, Table 8.1
(iv)	Establishment of the general ecological profile of the assessment area based on data of relevant previous studies/surveys and results of the ecological field surveys, if any, and description of the characteristics of each habitat found; the data set should be representative covering the migratory bird overwintering season and the ardeid breeding season, and is valid for the purpose of this assessment. Major information to be provided shall include :		
	(a) description of the physical environment, including all recognized sites of conservation importance and other ecologically sensitive areas, and assessment of whether these sites/areas will be affected by the Project or not;	✓	S8.4
	(b) habitat maps of suitable scale (1:1000 to 1:5000) showing the types and locations of habitats/species in the assessment area;	✓	Figure 8.4
	(c) ecological characteristics of each habitat type such as size, vegetation, type, species present, dominant species found, species diversity and abundance, community structure, seasonal pattern, ecological value and inter-dependence of the habitats and species, and presence of any features of ecological importance;	✓	S8.4
	(d) representative colour photos of each habitat type and any important ecological features identified; and	✓	Appendices 8.1 – 8.5
	(e) species found that are rare, endangered and/or listed under local legislation, international conventions for conservation of wildlife / habitats or red data books.	✓	S8.6
(v)	Investigation and description of the existing wildlife uses of the various habitats with special attention to those wildlife groups and habitats with conservation interests, including but not limited to:		
	(a) natural and man-made wetland habitats including mudflats, mangrove, streams, drainage channels, fishponds, freshwater ponds, reedbeds, marshes and others, in particular the mudflats at Shan Pui River and Kam Tin River exposed during low tide;	✓	S8.4
	(b) migratory and overwintering waterbirds roosting and/or feeding in the wetland habitats above;	✓	Ditto
	(c) breeding egrets and herons foraging in the wetland habitats above and their flight lines;	✓	Ditto
	(d) roosting areas of Black-faced Spoonbill and Great Cormorant and their flight lines;	✓	Ditto
	(e) intertidal/benthic communities;	✓	Ditto
	(f) mammals, in particular Eurasian Otter;	✓	Ditto
	(g) fireflies in particular Bent-winged Firefly; and	✓	Ditto
	(h) any other habitats or species identified as having special conservation interests by this study.	✓	Ditto
(vi)	Using suitable methodology and considering also other projects in the vicinity of the Project area reasonably likely to occur at the same time, identification and quantification as far as possible of any direct, indirect, on-site, off-site, primary, secondary and cumulative ecological impacts, such as destruction of habitats, reduction of species abundance/diversity, loss of roosting, breeding and feeding grounds, reduction of ecological carrying capacity, loss in ecological linkage and function, habitat fragmentation and any other possible disturbance caused by the Project, and in particular the followings:		

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
	(a) noise, glare and other human disturbance to wildlife in particular waterbirds and sensitive wetland habitats in the vicinity such as mudflats/mangroves along the embankments and at the confluence of Kam Tin River and Shan Pui River as well as fishpond/wetland habitats at Nam Sang Wai and WCA during construction and operation phases;	✓	S8.7
	(b) indirect ecological impacts due to changes in the water quality, hydrodynamics properties, hydrology, salinity, sedimentation rates and pattern as well as hydrology as a result of surface run-off, discharge of treated effluent and any associated disinfection activities, temporary sewage overflow, accidental discharge of untreated sewage, etc. in the drainage channels, fishponds and other wetland habitats in the assessment area during construction and operation phases.	✓	Ditto
	(c) disturbance and obstruction of flight lines of birds from major breeding/roosting sites to foraging grounds; and;	✓	Ditto
	(d) cumulative impacts due to the Yuen Long Barrage Scheme.	✓	Ditto
(vii)	Evaluation of ecological impact based on the best and latest information available during the course of the EIA study, using quantitative approach as far as practicable and covering construction and operation phases of the Project as well as the subsequent management and maintenance requirement of the Project;	✓	S8.7
(viii)	Recommendations for possible alternatives and practicable mitigation measures, such as restriction of works at specified season or time, adoption of appropriate construction methods and/or programme, to avoid, minimize and/or compensate for the adverse ecological impacts identified during construction and operation of the Project;		
(ix)	Evaluation of the feasibility and effectiveness of the recommended mitigation measures and definition of the scope, type, location, implementation arrangement, resources requirement, subsequent management and maintenance of such measures;	✓	S8.10
(x)	Determination and quantification as far as possible of the residual ecological impacts after implementation of the proposed mitigation measures;	✓	S8.10
(xi)	Evaluation of the significance and acceptability of the residual ecological impacts by making reference to the criteria in Annex 8 of the TM; and	✓	S8.11
(xii)	Review of the need for and recommendation on any ecological monitoring programme required	✓	S8.12
	Appendix G Requirements for Fisheries Impact Assessment		
1.	The Applicant shall follow the criteria and guidelines for evaluating and assessing fisheries impact as stated in Annexes 9 and 17 of the Technical Memorandum under EIA Ordinance.	✓	S9.2
2.	The assessment area shall include all areas within a distance of 500m from the site boundaries of the Project. This assessment area shall be extended to include other areas if they are also found being impacted by the construction or operation of the Project during the course of the EIA study. Special attention should be given to pond culture resources and activities as well as any water courses which serve as water sources for fish ponds.	✓	S9.3 and Figure 9.1
3.	Existing information regarding the assessment area shall be reviewed. Based on the review results, the assessment shall identify any data gap and determine if there is any need for field surveys to collect adequate baseline information. If field surveys are considered necessary, the assessment shall recommend appropriate methodology, duration and timing for such surveys.	✓	S9.4
4.	The assessment shall cover any potential impact on culture fisheries during construction and operation of the Project.	✓	S9.5
5.	The fisheries impact assessment shall include the following major tasks:		

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
(i)	description of the physical environmental background;	✓	S9.4
(ii)	description and quantification of the existing culture fisheries activities;	✓	Ditto
(iii)	description and quantification of the existing culture fisheries resources;	✓	Ditto
(iv)	identification of parameters (e.g. water quality parameters) and areas of culture fisheries importance;	✓	S9.5
(v)	prediction and evaluation of any direct/indirect and on-site/off-site impacts on culture fisheries such as permanent loss or temporary occupation of fish ponds, deterioration of water quality in fish ponds and any surrounding water courses, hydrological disruptions and draw-down of water table, disruption or disturbance of pond culture related activities;	✓	S9.5
(vi)	evaluation of cumulative impacts on culture fisheries particularly aquaculture sites and aquaculture production in the North West New Territories;	✓	S9.6
(vii)	proposal of practicable alternatives or mitigation measures with details on justification, description of scope and programme feasibility as well as staff and financial implications including those related to subsequent management and maintenance requirements of the measures; and	✓	S9.7
(viii)	review for the need of monitoring during the construction and operation phases of the Project and, if necessary, proposal for a monitoring and audit programme.	✓	S9.9
	Appendix H Requirements for Landscape and Visual Impact Assessments		
1.	The Applicant shall review relevant plan(s) and/or studies which may identify areas of high landscape value and recommend country park, coastal protection area, green belt and conservation area designations. Any guidelines on landscape and urban design strategies and frameworks that may affect the appreciation of the Project shall also be reviewed. The aim is to gain an insight to the future outlook of the area affected so as to assess whether the Project can fit into the surrounding setting. Any conflict with the statutory town plan(s) and any published land use plans shall be highlighted and appropriate follow-up action shall be recommended.	✓	S10.4
2.	The Applicant shall describe, appraise, analyse and evaluate the existing and planned landscape resources and character of the assessment area. A system shall be derived for judging landscape and visual impact significance. Annotated oblique aerial photographs and plans of suitable scale showing the baseline landscape character areas and landscape resources and mapping of impact assessment shall be extensively used to present the findings of impact assessment. Descriptive text shall provide a concise and reasoned judgment from a landscape and visual point of view. The sensitivity of the landscape framework and its ability to accommodate change shall be particularly focused on. The Applicant shall identify the degree of compatibility of the Project with the existing and planned landscape setting, recreation and tourism related uses, and scenic spot. The landscape impact assessment shall quantify the potential landscape impact as far as possible so as to illustrate the significance of such impacts arising from the proposed development. Clear mapping of the landscape impact is required. Tree survey shall be carried out and the impacts on existing trees shall be addressed. Cumulative landscape and visual impacts of the Project with other committed and planned developments shall be assessed.	✓	S10.5 & S10.6, Figures 10.2 – 10.6, Tree survey was carried out as shown in Appendix 10.1.
3.	The Applicant shall assess the visual impacts of the Project. Clear illustration including mapping of visual impact is required. The assessment shall include the following:		
(i)	identification and plotting of visual envelope of the Project;	✓	S10.5 & S10.7, Figure 10.7
(ii)	appraisal of existing visual resources and character as well as the future outlook of the visual system of the assessment area;	✓	S10.5, Figures 10.8 – 10.9
(iii)	identification of the key groups of existing and planned sensitive receivers within the visual envelope with regard to views from ground level, sea level and elevated	✓	Figure 10.7

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
(iv)	vantage points; description of the visual compatibility of the Project with the surrounding and the planned setting, and its obstruction and interference with the key views of the study areas;	✓	S10.7
(v)	identification of the severity of visual impacts in terms of distance, nature and number of sensitive receivers. The visual impacts of the Project with and without mitigation measures shall be included so as to demonstrate the effectiveness of the proposed mitigation measures;	✓	S10.7
4.	The Applicant shall evaluate the merits of preservation in totality, in parts or total destruction of existing landscape and the establishment of a new landscape character area. In addition, alternative location, layout, design, built-form and construction method that will avoid or reduce the identified landscape and visual impacts shall be evaluated for comparison before adopting other mitigation or compensatory measures to alleviate the impacts. The mitigation measures proposed shall not only be concerned with damage reduction but shall also include consideration of potential enhancement of existing landscape and visual quality. The Applicant shall recommend mitigation measures to minimize adverse effects identified above, including provision of a master landscape plan.	✓	S10.8
5.	The mitigation measures shall also include the preservation of vegetation, transplanting trees in good condition and value, provision of screen planting, re-vegetation of disturbed lands, compensatory planting, woodland restoration, design of structure, provision of finishes to structure, colour scheme and texture of material used and any measures to mitigate the impact on the existing and planned land use and visually sensitive receivers. Parties shall be identified for the on going management and maintenance of the proposed mitigation works to ensure their effectiveness throughout the construction phase and operation phase of the Project, associated works, supporting facilities and essential infrastructures. A practical programme and funding proposal for the implementation of the recommendation measures shall be provided.	✓	S10.8, S10.10, S12.9 and S13
6.	Annotated illustration materials such as colour perspective drawings, plans and section/elevation diagrams, annotated oblique aerial photographs, photographs taken at vantage points, and computer-generated photomontage shall be adopted to fully illustrate the landscape and visual impacts of the Project. In particular, the landscape and visual impacts of the Project with and without mitigation measures from representative viewpoints, particularly from views of the most severely affected visually sensitive receivers (i.e. worst case scenario), shall be properly illustrated in existing and planned setting at four stages (existing condition, Day 1 with no mitigation measures, Day 1 with mitigation measures and Year 10 with mitigation measures) by computer-generated photomontage so as to demonstrate the effectiveness of the proposed mitigation measures. Computer graphics shall be compatible with Microstation DGN file format. The Applicant shall record the technical details in preparing the illustration, which may need to be submitted for verification of the accuracy of the illustration.	✓	Figures 10.10 – 10.19
Appendix I Requirements for Hazard to Life Assessment			
1.	The Applicant shall investigate methods to avoid and/or minimize biogas risk during the construction and operation stages of the Project. The Applicant shall carry out hazard assessment to evaluate potential hazard to life due to biogas. The hazard assessment shall include the following:		
(i)	Identify hazardous scenarios associated with the generation, storage, utilization, processing and transmission (if applicable) of biogas due to the Project and then determine a set of relevant scenarios to be included in a Quantitative Risk Assessment (QRA);	✓	S11.5
(ii)	Execute a QRA of the set of hazardous scenarios determined in sub-section (i)	✓	S11.6 and S11.7

Section no. of the EIA Study Brief	Study Brief	Status	Remarks
(iii)	above, expressing population risks in both individual and societal terms; Compare individual and societal risks with the criteria for evaluating hazard to life stipulated in Annex 4 of the TM; and	✓	S11.8
(iv)	Where the Annex 4 of the TM cannot be met, identify and assess practicable and cost-effective risk mitigation measures.	✓	S11.9
2.	The methodology to be used in the hazard assessment shall be consistent with previous studies having similar issues (e.g. Development of Organic Waste Treatment Facilities, Phase 2).	✓	S11.3
Appendix J Implementation Schedule		✓	S13
Appendix K Requirements for EIA Report Documents			
1.	The Applicant shall supply the Director with the following number of copies of the EIA report and the executive summary:		
(i)	30 copies of the EIA report and 30 copies of the bilingual (in both English and Chinese) executive summary as required under section 6(2) of the EIAO to be supplied at the time of application for approval of the EIA report.	n/a	Noted
(ii)	When necessary, addendum to the EIA report and the executive summary submitted in item (i) above as required under section 7(1) of the EIAO, to be supplied upon advice by the Director for public inspection.	n/a	Noted
(iii)	20 copies of the EIA report and 50 copies of the bilingual (in both English and Chinese) executive summary with or without Addendum as required under section 7(5) of the EIAO, to be supplied upon advice by the Director for consultation with the Advisory Council on the Environment.	n/a	Noted
2.	To facilitate public inspection of EIA report via EIAO Internet Website, the Applicant shall provide electronic copies of both the EIA report and the executive summary prepared in HyperText Markup Language (HTML) and in Portable Document Format (PDF), unless otherwise agreed by the Director. For both of the HTML and PDF versions, a content page capable of providing hyperlink to each section and sub-section of the EIA report and the executive summary shall be included in the beginning of the document. Hyperlinks to figures, drawings and tables in the EIA report and the executive summary shall be provided in the main text from where respective references are made. The EIA report, including drawings, tables, figures and appendices shall be viewable by common web-browsers including Internet Explorer 8, Firefox 23, Chrome and Safari 8 or later versions as agreed by the Director, and support languages including Traditional Chinese, Simplified Chinese and English.	n/a	Noted
3.	The electronic copies of the EIA report and the executive summary shall be submitted to the Director at the time of application for approval of the EIA report.	n/a	Noted
4.	When the EIA report and the executive summary are made available for public inspection under section 7(1) of the EIAO, the content of the electronic copies of the EIA report and the executive summary must be the same as the hard copies and the Director shall be provided with the most updated electronic copies.	n/a	Noted
5.	To promote environmentally friendly and efficient dissemination of information, both hardcopies and electronic copies of future EM&A reports recommended by the EIA study shall be required and their format shall be agreed by the Director.	n/a	Noted

Checklist for EIAO-TM Annex 11

Contents of an EIA Report	Status	Remarks
<u>EXECUTIVE SUMMARY IN ENGLISH AND CHINESE</u> - Summary of main issues, findings, conclusions and recommendations	✓	Executive summary in English and Chinese versions were provided.
<u>INTRODUCTION</u> - Background of the project - Purpose of the EIA study - The approach	✓ ✓ ✓	S1.1 S1.3 S1.5
<u>DESCRIPTION OF THE PROJECT</u> - Key project requirements - Site location and site history - Nature, scope and benefits of the project - Size or scale, shape and design of the project - Project timetable and phasing of the project - Means by which the project will be implemented - Any related projects - Type, scope, scale, frequency and duration of the construction, operational or decommissioning (if relevant) activities - Background and history of the project, including considerations given to different options, and the project's different siting or alignment - Description of scenarios with or without the project	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	S2.2 S2.3 and S2.4 S2.2 and S2.4 S2.3 – S2.7 S2.9, Appendix 2.3 S2.8 S2.10 S2.4, S2.8-2.9, Appendix 2.3 S2.5 - S2.8 S2.3
<u>ENVIRONMENTAL LEGISLATION, POLICIES, PLANS, STANDARDS AND CRITERIA</u> - Applicable environmental ordinances and regulations - Applicable government environmental policies and plans - Applicable environmental standards and criteria - Other references	✓ ✓ ✓ ✓	S3.2, S4.2, S5.2, S6.2, S7.2, S8.2, S9.2, S10.2 and S11.2
<u>DESCRIPTION OF THE ENVIRONMENT</u> - Baseline environmental conditions - Environmental trends	✓ ✓	S3.3, S4.2 – S4.4, S5.3, S6.3, S7.4, S8.4, S9.4, S10.5, S11.4
<u>DESCRIPTION OF ASSESSMENT METHODOLOGIES</u> - Assessment methodologies, assumptions and criteria, including sample calculations and input and output files of a typical model run for all mathematical modelling	✓	S3.6, S4.6, S5.6, S6.4, S7.3, S8.3, S9.3, S10.3, S11.3
<u>IDENTIFICATION OF ENVIRONMENTAL IMPACTS</u> - Potential environmental impacts including the types, characteristics and estimated quantities of emissions, discharges, wastes, potential risks, disturbances or displacement associated with the activities relating to the project during construction, operation and decommissioning phases	✓	S3.5, S4.5, S5.7, S6.5, S7.5, S8.7, S9.5, S10.6 – S10.7, S11.5

Contents of an EIA Report	Status	Remarks
- Description of resources or receivers which are vulnerable to change or environmental impacts	✓	ditto
<u>PREDICTION AND EVALUATION OF ENVIRONMENTAL IMPACTS</u> - Prediction of environmental impacts (including beneficial or adverse; direct or indirect; short term or long term; reversible or irreversible; transboundary; cumulative) - Evaluation of predicted environmental impacts against applicable environmental legislation, policies, plans, standards and criteria	✓ ✓	S3.7, S4.7, S5.7, S6.5, S7.7, S8.8, S9.5, S10.6 – S10.7, S11.6 – S11.8
<u>MITIGATION OF ADVERSE ENVIRONMENTAL IMPACTS</u> - Measures to eliminate, reduce or remedy adverse environmental impacts	✓	S3.8, S4.8, S5.8, S6.6, S7.8, S8.10, S9.7, S10.8, S11.9
<u>DEFINITION AND EVALUATION OF RESIDUAL ENVIRONMENTAL IMPACTS</u> - Definition and evaluation of net environmental impacts with mitigation measures in place	✓	S3.9, S4.9, S5.9, S6.7, S7.9, S8.11, S9.8, S10.9, S11.10
<u>ENVIRONMENTAL MONITORING AND AUDIT</u> - Need for and scope of monitoring and audit - Environmental monitoring and audit requirements, if found to be necessary, and the related environmental monitoring and audit programme	✓ ✓	S3.10, S4.10, S5.10, S6.8, S7.10, S8.12, S9.9, S10.10, S11.9 S12
<u>CONCLUSIONS AND RECOMMENDATIONS</u>	✓	S14
<u>SCHEDULE OF RECOMMENDED MITIGATION MEASURES</u> - A schedule of all mitigation measures recommended in the EIA report, listing out what the mitigation measures are, by whom, when, where and to what requirements, and including the key environmental monitoring and audit requirements	✓	S13
<u>APPENDIX</u> - Responses to comments received	✓	Attached separately

Checklist for EIAO-TM Annex 20

Review of an EIA Report	Status	Remarks
1. General Approach		
Organisation of the Information		
1.1 Is information logically arranged in sections?	✓	Please refer to S1.5 for the report structure
1.2 Is the location of information identified in an index or table of contents?	✓	A table of contents is provided
1.3 When information from external sources has been introduced, has a full reference to the source been included?	✓	S3.2.3, S8.15, S9.11, S11.11
Presentation of Information		
1.4 Has information and analysis been offered to support all conclusions drawn?	✓	S3 to S11
1.5 Has information and analysis been presented so as to be comprehensive to the non-specialist using maps, tables and graphical material as appropriate?	✓	
1.6 Are all the important data and results discussed in an integrated fashion within the information?	✓	
1.7 Has superfluous information (i.e. information not needed for the decision) been avoided?	✓	
1.8 Has the information been presented in a concise form with a consistent terminology and are there logical links between different sections?	✓	
Presentation of Information		
1.9 Have prominence and emphasis been given to severe adverse impacts, to substantial environmental benefits, and to controversial issues?	✓	
1.10 Is the information objective?	✓	

Review of an EIA Report	Status	Remarks
Public Concerns		
1.11 Does the information identify and address the main concerns of the general public and special interest groups (clubs, societies etc.) who may be affected by the project.	✓	S2.3
1.12 Does the information take account of the main concerns of the relevant statutory or advisory bodies?	✓	Ditto
2. Description of the Project		
Features of the Project		
2.1 Are the purpose(s) and objectives of the project explained?	✓	S2.2
2.2 Are the nature and status of project decision(s), for which the EIA study is undertaken, clearly indicated?	✓	S1.1
2.3 Is the estimated duration of the construction phase, operational phase and, where appropriate, decommissioning phase given, together with the programme within these phases?	✓	S2.9, Appendix 2.3
2.4 Is the design and size of the project described, using diagrams, plans and/or maps as necessary?	✓	S2.5, Appendix 2.1
2.5 Are the methods of construction described?	✓	S2.8
2.6 Are the nature and methods of production or other types of activity involved in operation of the project described?	✓	S2.3 and S2.4
2.7 Has the land taken up by the project site(s), construction sites, and any associated access arrangements, auxiliary facilities and landscaping areas, been clearly shown on a scaled map?	✓	Appendix 2.1
2.8 For a linear project, has the land corridor, vertical and horizontal alignment and need for tunnelling, and earthworks been described?	n/a	The Project is not a linear one
2.9 Have the uses to which the project will be put been described and	✓	S2.3, Figure 2.2 and Figure 2.3

Review of an EIA Report	Status	Remarks
the different land use areas demarcated?		
Residues and Emissions		
2.10 Have the types and quantities of waste matter, energy (noise, vibration, light, heat, radiation etc) and residual materials generated during construction and operation of the project, and the rate at which these will be produced, been estimated?	✓	Table 6.6
2.11 Have the ways in which it is proposed to handle and/or treat these wastes and residual materials prior to release/disposal been indicated, together with the routes by which they will eventually be disposed of to the environment?	✓	Table 6.6
2.12 Have any special or hazardous wastes which will be produced been identified as such and the methods for their disposal been described, as regards their likely main environmental impacts?	✓	S6.5
2.13 Have the means by which the quantities of residuals and wastes were estimated been indicated and has uncertainty been acknowledged and ranges provided where appropriate?	✓	Table 6.6
3. Background and History of the Project		
3.1 Where appropriate does the information include reference to the consideration of the project's siting or alignment by the project proponent?	✓	S2.3 – S2.5
3.2 Are the reasons for selecting the proposed project or its siting and alignment, and the part environmental factors played in the selection, adequately described?	✓	S2.3 – S2.5
3.3 Have the main environmental impacts of different siting or alignment options been compared clearly and objectively with those of the proposed project and with the likely future environmental conditions in the absence of the project?	✓	S2.3 – S2.5
4. Description of the Environment		

Review of an EIA Report	Status	Remarks
Description of the Area Occupied by and Surrounding the Project		
4.1 Have the areas expected to be significantly affected by the various aspects of the project been indicated with the aid of suitable maps?	✓	Figures 3.1, 4.1, 5.1, 8.2, 9.2, 10.2, 10.5 and 10.7
4.2 Have the land uses on the site(s) and in the surrounding areas been described?	✓	S3.3, S4.3 – S4.4, S5.3, S6.3, S7.4, S8.4, S9.4, S10.5, S11.4
4.3 Has the affected environment been defined broadly enough to include any potentially significant effects occurring away from the immediate areas of construction and operation?	✓	Assessment areas were defined based on the guidelines of the Study Brief.
Baseline Conditions		
4.4 Have the components of the environment potentially affected by the project been identified and described sufficiently for the prediction of impacts?	✓	S3.3, S4.2-4.4, S5.3, S6.3, S7.4, S8.4, S9.4, S10.5
4.5 Were the methods used to investigate the affected environment appropriate to the size and complexity of the assessment task?	✓	The methods used follow the guidelines of the Study Brief
4.6 Has a prediction of the likely future environmental conditions in the absence of the project been developed?	✓	S2.3
4.7 Have existing technical data sources, including local records and studies carried out for environmental agencies and/or interest groups been searched?	✓	S3.3, S4.2 – S4.4, S5.3, S6.3, S7.4, S8.4, S9.4, S10.5, S11.4
4.8 Have local, regional and national plans and policies been reviewed and other data collected as necessary to predict future environmental conditions?	✓	S3.6, S4.6, S5.6, S6.4, S7.3, S8.3, S9.3, S10.3, S11.3
4.9 Have relevant departments and agencies holding information on baseline environmental conditions been approached?	✓	S3, S5, S7, S8 & S9
5. Description of Impacts		

Review of an EIA Report	Status	Remarks
5.1 Have the direct and indirect/secondary effects of constructing, operating and, where relevant, after use or decommissioning of the project been considered (including both positive and negative effects)?	✓	S3.5, S4.5, S5.7, S6.5, S7.5, S8.7, S9.5, S10.6 – S10.7, S11.5
5.2 Does the information include consideration of whether effects will arise as a result of "consequential" development i.e. whether additional development, which it would be difficult to resist, will be included in the area, leading to further environmental effects? For a project with multiple stages, are the impacts caused by overlapping of different stages considered and determined?	n/a	No consequential development is anticipated
5.3 Have the above types of impacts been investigated in so far as they affect the following:		
- air and climate;	✓	S3
- water and soils;	✓	S5, S6, S7
- noise;	✓	S4
- landscape;	✓	S10
- ecology;	✓	S8
- historic and cultural heritage;	n/a	Not required under the EIA Study Brief
- land use;	n/a	Not required under the EIA Study Brief
- impacts on people and communities;	✓	S11
- impacts on agriculture and fisheries activities.	✓	S9
5.4 If any of the above are not of concern in relation to the specific project and its location is this clearly stated in the information?	n/a	
5.5 Is the investigation of each type of impact appropriate to its importance for the decision, avoiding unnecessary information and concentrating on the key issues?	✓	S3.5, S3.7, S4.5, S4.7, S5.5, S5.7, S6.5, S7.5, S7.7, S8.7, S8.8, S9.5, S10.5 - S10.7, S11.5 – S11.8
5.6 Are impacts which may not be themselves significant, but which may contribute incrementally to a significant effect considered?	✓	Ditto
5.7 Does the information include a description of the methods/approaches used to identify impacts and the rationale for	✓	S3.6, S4.6, S5.6, S6.4, S7.3, S8.3, S9.3, S10.3,

Review of an EIA Report	Status	Remarks
using them?		S11.3
5.8 If the nature of the project is such that accidents are possible which might cause severe damage within the surrounding environment, has an assessment of the probability and likely consequences of such events been carried out and the main findings reported?	n/a	
Magnitude of Impacts		
5.9 Are impacts described in terms of the nature and magnitude of the change occurring and the nature (location, number, value, sensitivity) of the affected receiver?	✓	S3.7, S4.7, S5.7, S6.5, S7.7, S8.8, S9.5, S10.6 – S10.7, S11.6 – S11.8
5.10 Has the timescale over which the effects will occur been predicted such that it is clear whether impacts are short, medium or long term, temporary or permanent, reversible or irreversible?	✓	Ditto
5.11 Where possible, have predictions of impacts been expressed in quantitative terms? Otherwise, have qualitative descriptions been defined?	✓	Ditto
5.12 Where quantitative predictions have been provided, is the level of uncertainty attached to the results described?	✓	Ditto
Data and Methods		
5.13 Have the methods used to predict the nature, size and scale of impacts been described and are they appropriate to the importance of each projected impact?	✓	S3.6, S4.6, S5.6, S6.4, S7.3, S8.3, S9.3, S10.3, S11.3
5.14 Are the data used to estimate the size and scale of the main impacts sufficient for the task, are they clearly described and have their sources been clearly identified?	✓	Ditto
6. Mitigation		

Review of an EIA Report	Status	Remarks
Description of Mitigating Measures		
6.1 Has the mitigation of significant negative impacts been considered and, where feasible, have specific measures been proposed to address each impact?	✓	S3.8, S4.8, S5.8, S6.6, S7.8, S8.10, S9.7, S10.8, S11.9
6.2 Have the reasons for choosing the particular type of mitigation, and the other options available, been described?	✓	Ditto
6.3 Where mitigating measures are proposed, has the significance of any impact remaining after mitigation been described?	✓	S3.9, S4.9, S5.9, S6.7, S7.9, S8.11, S9.8, S10.9, S11.10
6.4 Where appropriate, do mitigation methods considered include modification of project design, construction and operation, the replacement of facilities/resources, and the creation of new resources, as well as "end-of-pipe" technologies for pollution control?	✓	Precautionary designs are suggested to minimize impacts related to air quality, noise, water quality, waste management, land contamination, ecology, fisheries, landscape and visual impacts, and hazard to life.
6.5 Is it clear to what extent the mitigation methods will be effective?	✓	S3.8, S4.8, S5.8, S6.6, S7.8, S8.10, S9.7, S10.8, S11.9
6.6 Where the effectiveness is uncertain or depends on assumptions about operating procedures, climatic conditions, etc., or where there is a risk that mitigation will not work, is this made clear and has data been introduced to justify the acceptance of the assumptions?	✓	Ditto
Implementation of Mitigation Measures		
6.7 Have details of how the mitigation measures will be implemented and function over the time span for which they are necessary been presented? Does the report list out clearly what mitigation measures would be implemented, by whom, when, where and to what requirements? Is the responsibility for implementing the recommended mitigation measures clearly defined?	✓	S13
Environmental Effects of Mitigation		
6.8 Have any adverse environmental effects of mitigation		No adverse environmental effects will be

Review of an EIA Report	Status	Remarks
measures been investigated and described?	n/a	anticipated from mitigation measures
6.9 Has the potential for conflict between the benefits of mitigating measures and their adverse impacts been considered?	n/a	Ditto
7. Evaluation of Residual Impacts		
7.1 Have the available standards, assumptions and criteria which can be used to evaluate the impacts been discussed?	✓	S3.2, S4.2, S5.2, S6.2, S7.2, S8.2, S9.2, S9.11, S10.2, S11.2
7.2 Have the predicted impacts been compared to the available standards and criteria?	✓	S3.7, S4.7, S5.7, S6.5, S7.7, S8.8, S9.5, S10.6 – S10.7, S11.6 – S11.8
7.3 Have the residual impacts, which are the net impacts with the mitigation measures in place, been described and evaluated against the available Government policies, standards and criteria?	✓	S3.9, S4.9, S5.9, S6.7, S7.9, S8.11, S9.8, S10.9, S11.10
7.4 Have the residual impacts been discussed and evaluated in terms of the impact on the health and welfare of the local community and on the protection of environmental resources?	✓	Ditto
7.5 Have the magnitude, location and duration of the residual impacts been discussed in conjunction with the value, sensitivity and rarity of the resource?	✓	Ditto
7.6 Where there are no generally accepted standards or criteria for the evaluation of residual impacts, have alternative approaches been discussed and, if so, is a clear distinction made between fact, assumption and professional judgement?	✓	S8.11
7.7 Have the residual impacts, if any, arising from the implementation of the proposed mitigation measures, been considered?	n/a	No adverse impacts would arise from the implementation of the proposed mitigation measures
8. Environmental Monitoring and Audit Proposals		
8.1 If impacts are uncertain, have monitoring arrangements been proposed to check the environmental impacts resulting from the implementation of the project and their conformity with the	✓	S12 and EM&A Manual

Review of an EIA Report	Status	Remarks
predictions made?		
8.2 Does the scale of any proposed monitoring arrangements correspond to the potential scale and significance of deviations from expected impacts?	✓	S12 and EM&A Manual
8.3 Is the need for and the scope of the monitoring and audit requirements defined in the report?	✓	S3.10, S4.10, S5.10, S6.8, S7.10, S8.12, S9.9, S10.10, S11.9
8.4 Does the report contain an Environmental Monitoring and Audit programme, as prescribed in Annex 21, if it is found to be needed?	✓	S12 and EM&A Manual
9. <u>Difficulties Compiling the Information</u>		
9.1 Have any gaps in the required data been indicated and the means used to deal with them in the assessment been explained?	n/a	
9.2 Have any difficulties in assembling or analysing the data needed to predict impacts been acknowledged and explained?	n/a	
10. <u>Executive Summary</u>		
10.1 Does the executive summary contain at least a brief description of the project and the environment, an account of the main mitigation measures to be implemented by the developer, and a description of any remaining or residual impacts?	✓	
10.2 Have technical jargons been avoided as far as possible in the executive summary?	✓	
10.3 Does the executive summary present the main findings of the assessment and cover	✓	
10.4 Does the executive summary include a brief explanation of the overall approach to the assessment?	✓	
10.5 Does the executive summary provide an indication of the confidence which can be placed in the results?	✓	

Review of an EIA Report	Status	Remarks
10.6 Is the executive summary presented in both English and Chinese?	✓	