Attachment 1 Technical Checklist (on TM Annex 11) to Review an EIA Report

Purpose :

The purpose of this Technical Checklist is to assist the project EPO of the EA Division in reviewing the submitted EIA report to determine whether it meets the requirements of Annex 11 of the Technical Memorandum (TM) on EIA Process.

This Checklist only serves as an initial check of the EIA report and does not necessarily represent the final view of the Director under the EIA Ordinance.

To record the compliance status of the submitted information:

For information already provided, put " ✓".

For information not provided at all, put " _ "

For information not applicable, put " **n/a** ".

Contents of an EIA Report	Status Yes	Status No	Remarks
EXECUTIVE SUMMARY IN ENGLISH AND CHINESE			
- Summary of main issues, findings, conclusions and recommendations	–		The ES has summarised the main issues, findings, conclusions and recommendations
INTRODUCTION			
- Background of the project	✓		S1.1
- Purpose of the EIA study	✓		S1.3
- The approach	✓		The general approach and structure are described in S.1.5. Details of the approach for each environmental assessment are presented in Sections 3 to 10.
DESCRIPTION OF THE PROJECT			
- Key project requirements	✓		S2.3
- Site location and site history	✓		S2.4
- Nature, scope and benefits of the project	✓		S2.2 and 2.4
- Size or scale, shape and design of the project	✓		S2.3 and S2.4, Figures 2.1
- Project timetable and phasing of the project	✓		S2.9, Appendix 3.1, Appendix 4.3
- Means by which the project will be implemented	✓		S2.8, S2.9
- Any related projects	✓		S2.10
- Type, scope, scale, frequency and duration of the construction, operational or decommissioning (if relevant) activities	✓		S2.2, S2.4, S2.9, Appendix 3.1, Appendix 4.3
- Background and history of the project, including considerations given to different options, and the project's different siting or alignment	✓		S2.3, S2.5, S2.6
- Description of scenarios with or without the project	✓		S2.3.4 and S2.3.5
ENVIRONMENTAL LEGISLATION, POLICIES, PLANS, STANDARDS AND CRITERIA			
- Applicable environmental ordinances and regulations	✓		S3.2, S4.2, S5.2, S6.2, S7.2, S8.2, S9.2, S10.2
- Applicable government environmental policies and plans	✓		Ditto
- Applicable environmental standards and criteria	✓		Ditto
- Other references	✓		S8.13
DESCRIPTION OF THE ENVIRONMENT			
- Baseline environmental conditions	✓		S3.3, S4.3, S5.3, S6.3, S.7.4, S8.4, S8.5, S8.6, S9.4, S9.5, S10.4, S11.4, S11.5
- Environmental trends	✓		S3.3, S5.3.2, S5.3.3
DESCRIPTION OF ASSESSMENT METHODOLOGIES			
- 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, S5.5, S6.4, S7.3, S8.3, S9.3, S10.3, Appendix 13.1
IDENTIFICATION OF ENVIRONMENTAL IMPACTS			
- 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, S5.5, S6.5, S7.5, S8.7, S9.6, S10.5
- Description of resources or receivers which are vulnerable to change or environmental impacts	✓		S3.4, S4.4, S5.4, S7.5, S8.6, S9.6, S10.4
PREDICTION AND EVALUATION OF ENVIRONMENTAL IMPACTS			
- Prediction of environmental impacts (including beneficial or adverse; direct or indirect; short term or long term; reversible or irreversible; transboundary; cumulative)	✓		S3.7, S4.7, S5.6, S6.5, S7.7, S8.8, S9.6, S10.8

Contents of an EIA Report	Status Yes	No	Remarks
- Evaluation of predicted environmental impacts against applicable environmental legislation, policies, plans, standards and criteria	✓		Ditto
MITIGATION OF ADVERSE ENVIRONMENTAL IMPACTS - Measures to eliminate, reduce or remedy adverse environmental impacts	✓		S3.8, S.4.8, S5.7, S6.6, S7.8, S8.9, S9.7, S10.9 and summarised in S13 and Appendix 13.2.
DEFINITION AND EVALUATION OF RESIDUAL ENVIRONMENTAL IMPACTS - Definition and evaluation of net environmental impacts with mitigation measures in place	✓		S3.9, S.4.9, S5.8, S6.7, S7.9, S8.10, S9.8
ENVIRONMENTAL MONITORING AND AUDIT - Need for and scope of monitoring and audit	✓		S3.10, S4.10, S5.9, S6.8, S7.10, S8.11, S9.10, S10.10 and summarised in S11.
- Environmental monitoring and audit requirements, if found to be necessary, and the related environmental monitoring and audit programme	✓		Ditto
CONCLUSIONS AND RECOMMENDATIONS	✓		S13
SCHEDULE OF RECOMMENDED MITIGATION MEASURES - 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	✓		S12
APPENDIX - Responses to comments received	**n/a**		The Responses to comments are submitted separately from the EIA Report

Attachment 2 Checklists for TM s4.4, s4.3 & s4.5 over EIA Report Approval

Purpose:

The purpose of this Technical Checklist is to assist the project EPO of the EA Division in reviewing the submitted EIA report to determine whether it meets the requirements of TM s4.4, 4.3 & 4.5 of the Technical Memorandum (TM) on EIA Process.

This Checklist only serves as an initial check of the EIA report and does not necessarily represent the final view of the Director under the EIA Ordinance.
To record the compliance status of the submitted information:

For information already provide put "✓ "
For information not provided at all, put " - "
For information not applicable, put " n/a ".

NOTE : The adequacy of any technical information provided needs to be relied on the advice of the technical groups and the relevant authorities.

TM Section 4.4.—The Review of EIA Report

Steps in Review of EIA Report TM 4.4- Review of the EIA Report under the following steps	Status Yes	 No	Remark
TM s4.4.1 Compliance with SB and TM Whether the coverage and approaches in the EIA Report comply with SB and TM	 ✓		Please refer to the details in the checklists for TM (Annex 11 & 20) and SB.
TM s4.4.2 Quality of EIA Report Whether the EIA is reviewed ***having regarded to Annex 20 and Section 4.3.***	✓		Please refer to the details in the checklists for TM (Annex 20 and Section 4.3).
In particular, the following factors are considered: (a) whether project scope and extent in the EIA cover all phases and key sequence of the project	✓		S2
(b) whether information and description in the EIA are factually correct	✓		The information and description presented have been confirmed with the project proponent/engineer and relevant authorities to ensure the accuracy.
(c) whether assessment methodology and evaluation of predicted impacts are consistent with TM ***Annexes 12-19 and 4-10*** respectively	✓		S3.6, S4.6, S5.5, S6.4, S7.3, S8.3, S9.3, S10.3.
(d) whether identification of environmental impacts are complete and whether all ***applicable criteria in Annexes 4 to 10*** are considered	✓		S3.5, S4.5, S5.6, S6.5, S7.5, S7.6, S8.7, S9.6, S10.5.
(e) whether assumption and methodology are adequate	✓		Key assumptions have been provided in Appendix 14.1. Methodology presented in S3.6, S4.6, S5.5, S6.4, S7.3, S8.3, S9.3, S10.3.
(f) whether adverse impacts are ***avoided to maximum practicable extent***	✓		Adverse impacts are avoided to maximum practicable extent by consideration of alternative schemes (S2.5, S2.6 and S2.8) and providing appropriate mitigation measures (S3.8, S4.8, S5.7, S6.6, S7.8, S8.9, S9.7, S10.9, and summarised in S12).
(g) whether assessment has considered and compared the ***various environmental benefits and dis-benefits with or without the project***	✓		S2.2, S2.3
(h) whether lessons learned are incorporated	n/a		
(i) whether the EIA defined all environmental protection measures ***necessary to avoid or reduce*** the adverse environmental impacts to within the criteria	✓		Mitigation measures are proposed in S3.8, S4.8, S5.7, S6.6, S7.8, S8.9, S9.7, S10.9, and summarised in S12, and any residual impacts are reported in S3.9, S4.9, S5.8, S6.7, S7.9 and S8.10. S8.11.
(j) for no applicable quantitative criteria whether the report has defined the ***best practicable mitigation measures***	✓		Ditto

Note: These checklists are for general, working reference. An user shall follow EIAO requirements.

Steps in Review of EIA Report TM 4.4- Review of the EIA Report under the following steps	Status Yes No	Remark
(k) whether the report has assessed feasibility, practicability, programming and effectiveness of mitigation measures	✓	Ditto
(l) whether the report has assessed EM&A requirement	✓	S3.10, S4.10, S5.9, S6.8, S7.10, S8.11, S9.10, S10.10 and summarised in S11.
TM s4.4.3 Evaluation of Residual Impact (i.e. net environmental impacts after mitigation) Whether the following factors are considered: ***(a) the importance of residual impacts in terms of the following factors:***		
(i) effect on public health and health of biota or risk to life	n/a	
(ii) the magnitude of the adverse environmental impacts	✓	S3.9, S.4.9, S5.8, S6.7, S7.9, S8.10, S10.8.
(iii) the geographic extent of the adverse environmental impacts	✓	Ditto
(iv) duration and frequency of adverse environmental impacts	✓	Ditto
(v) likely size of community or the environment that may be affected by adverse impacts	✓	Ditto
(vi) degree to which adverse environmental impacts are reversible or irreversible	✓	Ditto
(vii) the ecological context	✓	S8.10
(viii) degree of disruption to sites of cultural heritage	n/a	
(ix) international and regional significance	n/a	
(x) both the likelihood and degree of uncertainty of adverse environmental impact	✓	S3.9, S.4.9, S5.8, S6.7, S7.9, S8.10, S10.8.
(b) degree of compliance with principles and criteria as listed:		
(i) ordinances and regulations applicable at the time of processing the applications	✓	S3.2, S4.2, S5.2, S6.2, S7.2, S8.2, S9.2, S10.2.
(ii) guidelines, standards & criteria in EIAO TM	✓	Ditto
(iii) other published and adopted criteria in HK	✓	Ditto
(iv) other guidelines published by relevant authorities in HK	✓	Ditto

Note: These checklists are for general, working reference. An user shall follow EIAO requirements.

TM Section 4.3- General Approaches and Methodologies for Assessment

Review of EIA Report - (*Re: TM 4.4.2 ---Whether the assessment methodologies adopted in EIA report are having regard to the general principles in TM Section 4.3.)*	Status Yes No	Remark
TM 4.3.1.(a) Description of Environment		
- whether characteristics of environment are properly described and predicted	✓	S3.3, S4.3, S5.3, S6.3, S7.4, S7.5, S8.4, S8.6, S9.4, S9.5, S10.4.
- whether baseline condition is adequate to determine existing conditions taking into account of natural variations.	✓	Ditto
TM 4.3.1(b) Impact Prediction		
Whether the assessment methodologies shall be relevant to the issues to be addressed; shall be successful or acceptable by recognized institutions, and ***shall be capable of:***	✓	S3.6, S4.6, S5.5, S6.4, S7.3, S8.3, S9.3, S10.3.
(i) identifying potential harmful or beneficial impacts	✓	S3.5, S4.7, S5.6, S6.5, S7.5, S7.7, S8.7, S9.3, S10.5.
(ii) identifying receivers, habitats or resources vulnerable to change	✓	S3.4, S4.4, S5.4, S7.5, S8.6, S9.3, S10.4.
(iii) defining project/environment interaction	✓	S3.5, S4.5, S8.8
(iv) examine the chain of events	n/a	
(v) describe and predict various scenarios	✓	S3.6, S4.6, S5.5, S6.4, S8.8, S9.3, S10.8
(vi) predict the anticipated changes such that an evaluation can be made with respective to TM criteria	✓	Ditto
TM4.3.1(c) Impact Evaluation Whether methodology for evaluating environmental impact ***shall be capable of addressing***:		
(i) the existing or projected environmental conditions without the project in place	✓	S3.3, S4.3, S5.3, S6.3, S7.4, S7.5, S8.4, S8.5, S8.6, S9.3, S10.4
(ii) the projected environmental condition with the project and the sum total of others	✓	S3.7, S4.7, S5.6, S6.5, S7.7, S8.8, S10.8
(iii) a differentiation of environmental impacts caused by the project and others	✓	S3.7, S4.7, S8.8
(iv) environmental impacts during different phases of construction and development	✓	S3.7, S4.6, S5.6, S6.5, S8.8, S9.6, S10.8
(v) evaluation of seriousness of the residual environmental impacts	✓	Ditto
TM4.3.1(d) Impact Mitigation The methodologies for mitigation shall give priority to avoidance and ***shall be capable of***:		
(i) identifying and evaluation mitigation measures in order to avoid, reduce or remedy the impact	✓	S3.8, S4.8, S5.7, S6.6, S7.8, S8.9, S9.7, S10.9 and summarised in S12
(ii) assessing the effectiveness of mitigation measures	✓	Ditto
(iii) defining the residual impacts	✓	S3.9, S4.9, S5.8, S6.7, S7.9, S8.10, S9.8

Note: These checklists are for general, working reference. An user shall follow EIAO requirements.

TM 4.5- Approval of an EIA Report

Approval of EIA Report TM 4.5- Approval of an EIA Report	Status Yes	 No	Remark
TM S.4.5.1 Approval of EIA report In approving EIA reports with or without conditions, considerations should be given to the following:			
(a) Whether the requirements in the EIA study brief have been met;	✓		Please refer to the details in the checklist for SB.
(b) Whether the quality of the EIA report **meets the requirements set out in Section 4.4** of the EIA-TM and the results and conclusions are technically sound and reliable;	✓		Please refer to the details in the checklist for TM 4.4.
(c) Whether the EIA report **addresses relevant environmental issues** raised by the public and the Advisory Council on the Environment during the public inspection period; and	n/a		
(d) Whether **all relevant environmental principles and criteria laid down in the EIA-TM can be met and the residual environmental impacts are within the relevant criteria,** unless with sound environmental justifications and without long term serious environmental implications.	✓		Please refer to the details in the checklists for TM (Annexes 11 & 20) and SB.

Note: These checklists are for general, working reference. An user shall follow EIAO requirements.

Attachment 3 Technical Checklist (on TM Annex 20) to Review an EIA Report

Purpose :

The purpose of this Technical Checklist is to assist the project EPO of the EA Division in reviewing the submitted EIA report to determine whether it meets the requirements of Annex 20 of the Technical Memorandum (TM) on EIA Process.

This Checklist only serves as an initial check of the EIA report and does not necessarily represent the final view of the Director under the EIA Ordinance.

To record the compliance status of the submitted information:

For information already provided, put " ✓".

For information not provided at all, put " _ "

For information not applicable, put "**n/a** ".

NOTE: The adequacy of any technical information provided needs to be relied on the advice of the technical groups and the relevant authorities.

TM Issues	Status Yes	Status No	Remarks
1. <u>General Approach</u>			
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?	✓		Full references have been provided. S8.13, S10.12.
Presentation of Information			
1.4 Has information and analysis been offered to support all conclusions drawn?	✓		S3 to S10
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?	✓		Preparation of maps, tables and graphic material follows EIA study brief No.ESB-313/2019 and EIAO-TM.
1.6 Are all the important data and results discussed in an integrated fashion within the information?	✓		Presentation of information follows EIA study brief No.ESB-313/2019 and EIAO-TM.
1.7 Has superfluous information (i.e. information not needed for the decision) been avoided?	✓		Presentation of information follows EIA study brief No.ESB-313/2019 and EIAO-TM.
1.8 Has the information been presented in a concise form with a consistent terminology and are there logical links between different sections?	✓		Relevant cross references have been provided in respective sections.
Presentation of Information			
1.9 Have prominence and emphasis been given to severe adverse impacts, to substantial environmental benefits, and to controversial issues?	✓		S2.2, S2.5 – S2.8, S3.5, S3.7, S4.5, S4.7, S5.6, S6.5, S7.5, S7.7, S8.7, S8.8, S9.6.
1.10 Is the information objective?	✓		Presentation of information follows EIA study brief No.ESB-323/2019 and EIAO-TM.
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.	n/a		
1.12 Does the information take account of the main concerns of the relevant statutory or advisory bodies?	✓		Please refer to the our response to comments table.
2. <u>Description of the Project</u>			
Features of the Project			
2.1 Are the purpose(s) and objectives of the project explained?	✓		S1.3, S1.4
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 and Appendix 2.1
2.4 Is the design and size of the project described, using diagrams, plans and/or maps as necessary?	✓		S2.4, and Figures 2.1

TM Issues	Status Yes	Status No	Remarks
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?	✓		S2.4
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?	✓		Figures 1.1
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 the different land use areas demarcated?	✓		S2.1 – S2.3
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?	✓		S6.5, S6.6
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?	✓		S6.5, S6.6 Table 6.3
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?	n/a		No specific or hazardous waste would be anticipated from this Project.
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?	✓		S6.5, Table 6.2 and Table 6.3
3. <u>Background and History of the Project</u>			
3.1 Where appropriate does the information include reference to the consideration of the project's siting or alignment by the project proponent?	✓		S2.4
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?	✓		Ditto
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?	✓		S2.2, S2.3, S2.5, S2.6
4. <u>Description of the Environment</u> **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, 3.2, 4.1, 5.1, 7.1, 8.1 – 8.3, 9.1 – 9.3
4.2 Have the land uses on the site(s) and in the surrounding areas been described?	✓		S1.1, S3.3, S4.3, S5.3, S6.3, S7.4, S7.5, S8.4, S8.5 , S9.4, S9.5, S10.4
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, S4.3, S5.3, S6.3, S7.4, S7.5, S8.4, S8.5 , S9.5, S10.4, 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?	✓		S2.2, 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, S4.3, S5.3, S7.3 - S7.5, S7.6, S8.4, S8.5, S8.6, S9.4, S9.5, S10.4
4.8 Have local, regional and national plans and policies been reviewed and other data collected as necessary to predict future environmental conditions?	✓		S3.3, S5.3, S7.5, S9.4, S10.4

TM Issues	Status Yes	Status No	Remarks
4.9 Have relevant departments and agencies holding information on baseline environmental conditions been approached?	✓		S3.6, S4.4, S5.3, S7.3, S7.5, S9.5
5. <u>Description of Impacts</u>			
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, S5.6, S6.5, S7.5, S7.7, S8.7, S9.6, S10.5
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
- noise;	✓		S4
- landscape;	✓		S9
- ecology;	✓		S8
- historic and cultural heritage;	n/a		
- land use;	n/a		
- impacts on people and communities;	n/a		
- impacts on agriculture and fisheries activities.	n/a		
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		The types of impacts investigated are in accordance with the EIA Study Brief.
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, S4.5, S5.6, S6.5, S7.5, S7.7, S8.7, S9.6, S10.5
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 using them?	✓		S3.6, S4.6, S5.5, S6.4, S7.3, S7.6, S8.3, S9.3, S10.3
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?	✓		S5.6, S10.8
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, S5.6, S6.5, S7.7, S8.8, S9.6, S10.8
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, S5.5, S6.4, S7.3, S7.6, S8.3, S9.3, S10.3
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?	✓		S3.6, S4.6, S5.5, S6.4, S7.5, S7.6, S8.3, S9.3, S10.3
6. <u>Mitigation</u>			
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, S5.7, S6.6, S7.8, S8.9, S9.7, S10.9, and summarised in S12
6.2 Have the reasons for choosing the particular type of mitigation, and the other options available, been described?	✓		Ditto

TM Issues	Status Yes	Status No	Remarks
6.3 Where mitigating measures are proposed, has the significance of any impact remaining after mitigation been described?	✓		S3.8, S4.8, S5.7, S6.6, S7.8, S8.9, S9.7, S10.9
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 air quality, noise and water quality, and landscape and visual impacts. S3.8, S4.8, S5.7
6.5 Is it clear to what extent the mitigation methods will be effective?	✓		S3.8, S4.8, S5.7, S6.6, S7.8, S8.9, S9.7, S10.9
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?	✓		S12
Environmental Effects of Mitigation			
6.8 Have any adverse environmental effects of mitigation measures been investigated and described?	n/a		No adverse environmental effects will be 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, S7.7, S8.2, S9.2, S10.2
7.2 Have the predicted impacts been compared to the available standards and criteria?	✓		S3.7, S4.7, S5.6, S6.5, S7.7, S8.8, S9.6, S10.8
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?	✓		S3.8, S4.8, S5.7, S6.6, S7.8, S8.9, S9.7, S10.9 S10.10. No adverse impacts would arise from the implementation of the proposed mitigation measures.
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?	n/a		
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?	✓		S3.9, S4.9, S5.8, S6.7, S7.9, S8.10, S9.8, S10.10
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?	✓		Ditto
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 predictions made?	n/a		No uncertain impacts would be anticipated.
8.2 Does the scale of any proposed monitoring arrangements correspond to the potential scale and significance of deviations from expected impacts?	✓		S3.10, S4.10, S5.9, S6.8, S7.10, S8.11, S9.10, S10.10, and summarised in S11
8.3 Is the need for and the scope of the monitoring and audit requirements defined in the report?	✓		Ditto
8.4 Does the report contain an Environmental Monitoring and Audit programme, as prescribed in Annex 21, if it is found to be needed?	✓		S11
9. Difficulties Compiling the Information			

TM Issues	Status Yes	Status No	Remarks
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. **Executive Summary**			
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?	✓		S2, Appendix 5.1 of ES
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	✓		S3 of ES
10.4 Does the executive summary include a brief explanation of the overall approach to the assessment?	✓		S3 of ES
10.5 Does the executive summary provide an indication of the confidence which can be placed in the results?	✓		S3 of ES
10.6 Is the executive summary presented in both English and Chinese?	✓		Yes, the Executive Summary presented in both English and Chinese. (Chinese version to be provided later)

Attachment 4 Study Brief Checklist for the Project "Yuen Long South Effluent Polishing Plant"

Study Brief	Remark
S.1.2 The proposed works of the Project comprises: (i) Construction of a sewage treatment plant with a maximum capacity to treat Average Dry Weather Flow (ADWF) up to 65,000m 3/day; (ii) Construction of sludge treatment facilities for treating sludge generated from Yuen Long South Effluent Polishing Plant (YLS EPP) and additional sludge generated from the Hung Shui Kiu Effluent Polishing Plant (HSK EPP) and other nearby sewage treatment works; (iii) Construction of facilities for receiving and co-digesting pre-treated food or organic wastes; (iv) Construction of effluent discharge pipe for the purpose of emergency discharge; and (v) Associated ancillary works, including those associated with the treated effluent reuse. The location of the Project is shown in Appendix A.	S2.4 Figure 1.1
S.1.3 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 m3 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 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. The Project is a designated project by virtue of Item F.1: "Sewage treatment works with an installed capacity of more than 15 000 m3 per day" and Item F.4: "An activity for the reuse of treated sewage effluent from a treatment plant" under Schedule 2, Part I of the EIAO, but not Item G.4: "A waste disposal facility (excluding any refuse collection point), or waste disposal activity, for (a) refuse; or (b) chemical, industrial or special wastes"
S.1.4 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.	Noted
S.1.5(i) - the overall acceptability of any adverse environmental consequences that are likely to arise as a result of the Project;	S13
S.1.5(ii) - the conditions and requirements for the detailed design, construction and operation of the Project to mitigate against adverse environmental consequences wherever practicable; and	S9.7
S.1.5(iii) - the acceptability of residual impacts after the proposed mitigation measures are implemented.	S3.9, S4.9, S5.8, S6.7, S7.9, S8.10, S9.8
S.2.1(i) - to describe the Project and associated works together with the requirements and environmental benefits for carrying out the Project;	S2.2, S2.3
S.2.1(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 both the natural and man-made environment and the associated environmental constraints;	S3.4, S4.4, S5.4, S6.5, S7.4 – S7.6, S8.3 – S8.6, S9.5, S9.6, S10.4
S.2.1(iii) - to identify and quantify emission sources and determine the significance of impacts on sensitive receivers and potential affected uses;	S3.5 – S3.7, S4.5 – 4.7, S5.5, S5.6, S6.5, S7.7, S8.7, S8.8, S9.5, S9.6, S10.5 – S10.8
S.2.1(iv) - to identify and quantify contaminated land within any project area for development works, and to propose measures to avoid disposal in the first instance;	S7.5 – S7.8
S.2.1(v) - to identify and quantify any potential losses or damages to flora, fauna and natural habitats;	S8.7, S8.8
S.2.1(vi) - to identify and evaluate any potential landscape and visual impacts and to propose measures to mitigate these impacts;	S9.5 – S9.9
S.2.1(vii) - to identify any potential hazard to life due to generation, storage, utilization, processing and transmission (if applicable) of biogas and other dangerous goods (DGs) during the operation phase of the Project and to propose measures to mitigate these impacts if required;	S10.5 – S10.9
S.2.1(viii) - to propose the provision of infrastructure or mitigation measures so as to minimize pollution, environmental disturbance and nuisance during construction and operation of the Project;	S3.8, S4.8, S5.7, S6.6, S7.8, S8.9, S9.7, S10.9
S.2.1(ix) - to investigate the feasibility, effectiveness and implications of the proposed mitigation measures;	Ditto
S.2.1(x) - to identify, predict and evaluate the residual (i.e. after practicable mitigation) environmental impacts and the cumulative effects expected to arise during the construction and operation phases of the Project in relation to the sensitive receivers and potentially affected uses;	S3.9, S4.9, S5.8, S6.7, S7.9, S8.10, S9.8, S9.9
S.2.1(xi) - to identify, assess and specify methods, measures and	S3.8, S4.8, S5.7, S6.6, S7.8, S8.9,

Study Brief	Remark
standards, to be included in the detailed design, construction and operation of the Project which are necessary to mitigate these residual environmental impacts and cumulative effects and reduce them to acceptable levels;	S9.7, S10.9
S.2.1(xii) - to design and specify the environmental monitoring and audit requirements; and	S3.10, S4.10, S5.9, S6.8, S7.10, S8.11, S9.10, S10.10, S11
S.2.1(xiii) - to identify any additional studies necessary to implement the mitigation measures or monitoring and proposals recommended in the EIA report.	No additional studies are required to implement the mitigation measures or monitoring and proposals recommended in the EIA report.
S.3.2.1(i) - environmental benefits and dis-benefits of different development options, design and construction methods of the Project with a view to deriving the preferred development option(s) that will avoid or minimize adverse environmental impact;	S2.5 – S2.8
S.3.2.1(ii) - potential water quality impacts on water system(s) including the Deep Bay Water Control Zone/ North Western Water Control Zone, and other affected Water Control Zones and relevant water sensitive receivers (e.g natural streams and nullah), during construction and operation of the Project;	S5.4 – S5.6
S.3.2.1(iii) - 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 YLS EPP and the co-digestion facility for imported organic wastes, as well as the transportation of sludge and organic waste along Kung Um Road, and dust and noise during construction of the Project, including that affecting receivers along Kung Um Road;	S3.4 – S3.7, S4.4 – S4.7
S.3.2.1(iv) - 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
S.3.2.1(v) - potential extent of land contamination within any project area for development works and relevant mitigation measures;	S7.5 – S7.7.
S.3.2.1(vi) - potential ecological impact on ecological sensitive areas during construction and operation of the Project;	S8.7, S8.8
S.3.2.1(vii) - potential landscape impact arising from the Project and potential visual impact arising from the above-ground structures of the Project;	S9.6 – S9.9
S.3.2.1(viii) - potential hazard to life due to generation, storage, utilization, processing and transmission (if applicable) of biogas and other DGs during operation of the Project;	S10.5 – S10.8
S.3.2.1(ix) - measures/ actions to avoid or minimize potential human health impacts associated with reuse of treated sewage effluent during operation of the Project; and	S5.6
S.3.2.1(x) - 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
S.3.3.1 Purpose(s) and Objectives of the Project The Applicant shall provide information on the purpose(s) and objectives of the Project, and describe the environmental benefits of the Project and scenarios with and without the Project.	S1.1 – S1.4, S2.2, S2.3
S.3.3.2 Details of the Project The Applicant shall indicate the nature and status of project decision(s) for which the EIA study is undertaken. The Applicant shall describe the proposed land uses, design, construction methods, sequence of construction works and other major activities involved in the Project, using diagrams, plans and/or maps as necessary. The estimated duration of the construction phase and operational phase of the Project together with the programme within these phases shall be given. The land taken by the Project site(s), construction sites and any associated access arrangements, auxiliary facilities and landscaping areas shall be shown on a scaled map. The uses of the Project shall be described and the different land use areas shall be demarcated as appropriate.	S1.1 – S1.4, S2.2, S2.3, S2.8 – S2.10
S.3.3.3 Background and History of the Project The Applicant shall provide information on the site location and site history of the Project, interactions with other projects including those related to the reuse of treated effluents, and the consideration of different development options, taking into account the principles of avoidance, minimizing and control of adverse environmental impacts. The options might include design, sewage treatment technologies, sludge treatment, co-digestion of organic waste, construction methods and sequence of construction works for the Project. The key reasons for selecting the preferred	S2

Study Brief	Remark
development option(s) and the part environmental factors played in the selection shall be described. The main environmental impacts of different development options shall be compared with those of the Project and with the likely future environmental conditions in the absence of the Project.	
S.3.4.1 The Applicant shall conduct the EIA study to address all environmental aspects of the activities as described in the scope as set out above. The assessment shall be based on the best and latest information available during the course of the EIA study.	Noted
S.3.4.2 The Applicant shall include in the EIA report details of the construction programme and methodologies. The Applicant shall clearly state in the EIA report the time frame and work programmes of the Project and associated works and other concurrent projects, and assess the cumulative environmental impacts from the Project and associated works with all interacting projects, including staged implementation of the Project and associated works.	S2.8 – S2.10 Appendix 2.1, Appendix 4.3
Air Quality Impact S.3.4.4.1 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 respectively.	Noted
S.3.4.4.2 The assessment area for air quality impact assessment shall be defined by a distance of 500 metres from the boundary of the Project Area and the works of the Project as identified in the EIA, which shall be extended to include major existing, committed and planned air pollutant emission sources identified to have a bearing on the environmental acceptability of the Project. The assessment shall include the existing, committed and planned sensitive receivers within the assessment 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
S.3.4.4.3 The assessment of air quality impact arising from the construction and operation of the Project shall follow the detailed technical requirements given in Appendix B of this EIA study brief	Noted.
Noise Impact S.3.4.5.1 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.	Noted
S.3.4.5.2 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.	S4.3, S4.4
S.3.4.5.3 The noise impact assessment for the construction and operation of the Project shall follow the detailed technical requirements given in Appendix C of this EIA study brief.	Noted
Water Quality Impact S.3.4.6.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing water pollution as stated in Annexes 6 and 14 of the TM respectively.	Noted
S.3.4.6.2 The assessment area for the water quality impact assessment shall include areas within 500 metres from the boundary of the Project and shall cover Deep Bay, North Western and other affected Water Control Zones as designated under the Water Pollution Control Ordinance (Cap. 358) and water sensitive receivers, such as the natural streams and nullah in the vicinity of the Project. The assessment 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.	S5.4, S5.5
S.3.4.6.3 The water quality impact assessment for the construction and operation of the Project shall follow the detailed technical requirements given in Appendix D of this EIA study brief.	Noted
Waste Management Implication S.3.4.7.1 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 respectively.	Noted
S.3.4.7.2 The assessment of the waste management implications arising from the construction and operation of the Project shall follow the detailed technical requirements given in Appendix E of this EIA study brief.	Noted
Land Contamination	Noted

Study Brief	Remark
S.3.4.8.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing potential land contamination issues as stated in section 3.1 of Annex 19 of the TM.	
S.3.4.8.2 The assessment of the potential land contamination issues shall follow the detailed technical requirements given in Appendix F of this EIA study brief.	Noted
Ecological Impact (Terrestrial and Aquatic) S.3.4.9.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing ecological impact as stated in Annexes 8 and 16 of the TM.	Noted
S.3.4.9.2 The assessment area for the purpose of the terrestrial ecological impact assessment shall include areas within 500 metres 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 3.4.6 of this EIA study brief. The assessment shall also include watercourses (and their riparian zones) identified with ecological importance.	S8.3 Figure 8.1
S.3.4.9.3 The ecological impact assessment for construction and operation of the Project shall follow the detailed technical requirements given in Appendix G of this EIA study brief.	Noted
Landscape and Visual Impacts S.3.4.10.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing the landscape and visual impacts as stated in Annexes 10 and 18 of the TM, and the EIAO Guidance Note No. 8/20 10 “Preparation of Landscape and Visual Impact Assessment under the EIAO”.	Noted
S.3.4.10.2 The assessment area for the landscape impact assessment shall include all areas within a 500 metres distance from the site boundary of the Project, while the assessment area for the visual impact assessment shall be defined by the visual envelope of the project. The defined envelope shall be shown on a plan in the EIA report.	S9.5 Figure 9.3, Figure 9.5, Figure 9.7
S.3.4.10.3 The landscape and visual impact assessments for construction and operation of the Project shall follow the detailed technical requirements given in Appendix H of this EIA study brief.	Noted
Hazard to Life	Noted

Study Brief	Remark
S.3.4.11.1 The Applicant shall follow the criteria for evaluating hazard to life as stated in section 2 of Annex 4 of the TM.	
S.3.4.11.2 The hazard to life assessment shall follow the detailed technical requirements given in Appendix I of this EIA study brief.	Noted
Environmental Monitoring and Audit (EM&A) Requirements S.3.5.1 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, to define the scope of the EM&A requirements for the Project in the EIA study.	S3.10, S4.10, S5.10, S6.8, S7.10, S8.11, S9.10, S10.10, S11
S.3.5.2 Subject to the confirmation of the EIA study findings, the Applicant shall comply with the requirements as stipulated in Annex 21 of the TM.	Noted.
S.3.5.3 The Applicant shall prepare a Project Implementation Schedule (in the form of a checklist as shown in Appendix J) containing all the EIA study recommendations and mitigation measures with reference to the implementation programme.	S12
Presentation of Summary Information S.3.6.1 Summary of Environmental Outcomes The EIA report shall contain a summary of key environmental outcomes arising from the EIA study, including estimated population protected from various environmental impacts, environmentally sensitive areas protected, environmentally friendly options considered and incorporated in the preferred option, environmental designs recommended, key environmental problems avoided, compensation areas included and the environmental benefits of environmental protection measures recommended.	S13
S.3.6.2 Summary of Environmental Impacts To facilitate effective retrieval of pertinent key information, the EIA report shall contain a summary table of environmental impacts showing the assessment points, results of impact predictions, relevant standards or criteria, extents of exceedances predicted, impact avoidance measures considered, mitigation measures proposed and residual impacts (after mitigation). This summary shall cover each individual impact and shall also form an essential part of the executive summary of the EIA report.	Appendix 13.2
S.3.6.3 Documentation of Key Assessment Assumptions,	Appendix 13.1

Study Brief	Remark
Limitation of Assessment Methodologies and related Prior Agreement(s) with the Director The EIA report shall contain a summary including the assessment methodologies and key assessment assumptions adopted in the EIA study, the limitations of these assessment(s) methodologies/assumptions, if any, plus relevant prior agreement(s) with the Director or other Authorities on individual environmental media assessment components. The proposed use of any alternative assessment tool(s) or assumption(s) have to be justified by the Applicant, with supporting documents based on cogent, scientific and objectively derived reason(s) before seeking the Director's agreement. The supporting documents shall be provided in the EIA report.	
S.3.6.4 Summary of Alternative Mitigation Measures The EIA report shall contain a summary of alternative development options and measures considered during the course of EIA study, including size/scale, design, construction methods and sequence of works for the Project, with a view to avoiding or minimizing and mitigating adverse environmental impacts. A comparison of the environmental benefits and dis-benefits of applying different development options, and/or mitigation measures shall be made. This summary shall cover the key impacts and shall also form an essential part of the executive summary of the EIA report.	S2.5 – S2.8
S.3.6.5 Documentation of Public Concerns The EIA report shall contain a summary of the main concerns of the general public, special interest groups and the relevant statutory or advisory bodies received and identified by the Applicant during the course of the EIA study, and describe how the relevant concerns have been taken into account.	S2
S.5.1 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
S.5.2 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 Appendix K. The Applicant shall, upon request, make additional copies the above documents available to the public, subject to payment by the interested parties of full costs of printing.	Noted
APPENDIX B (Requirements for Air Quality Impact Assessment)	
Background and Analysis of Activities (i) - 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.	S3.5
(ii) - Provision of an account, where appropriate, of the consideration/ measures that have been taken into consideration during the planning of the Project to avoid and minimize the air pollution impact. The Applicant shall consider alternative locations of the new treatment facilities, alternative treatment processes of EPP and alternative construction methods to minimize the air quality impact during construction and operation stages of the Project.	Appendix 3.1 presented the construction programme. Section 3.5.1 presented that the dusty excavation would be commenced, conducted and completed in 1 year. Alternative construction method, alternative design of the EPP have been discussed in S2.5 & S2.6.
(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. If the PATH model is used to estimate the future background air quality, details for the estimation of all emission sources to be adopted in the model runs should be clearly presented.	S3.3, S3.6
Identification of Air Sensitive Receivers (ASRs) and Examination of Emission/Dispersion Characteristics (i) - Identification and description of existing, committed and planned 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 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	S3.4 Figure 3.1, Figure 3.2

Study Brief	Remark
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.	
(ii) - 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 to be handled, etc.) shall be obtained from the relevant government departments/authorities, where applicable, and documented in the EIA report.	S3.5 Appendices 3.2 – 3.7
(iii) - Identification of chimneys and obtainment of relevant chimney emission data in the assessment area, where appropriate, by carrying out a survey for assessing the cumulative air quality impact of air pollutants through chimneys. The Applicant shall ensure and confirm the validity of the emission data used in their assessment. Any errors found in their emission data used may render the submission invalid.	S3.5, S3.6
(iv) - The emissions from any concurrent projects identified as relevant during the course of the EIA study shall be taken into account as contributing towards the overall cumulative air quality impact. The impact as affecting the existing, committed and planned ASRs within the study area shall be assessed, based on the best information available at the time of assessment.	S3.5
<u>Construction Phase Air Quality Impact</u> (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.	Noted
(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 shall be earned 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.	S3.8
(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.	S3.5, S3.10
(iv) - Where necessary, the Applicant shall consider and evaluate direct mitigation measures, including but not limited to water-spraying, re-scheduling construction programme to minimize concurrent dust impact arising from different construction sites, for fugitive dust control. The Applicant shall describe the means of transportation and their routings involved, with a view to addressing potential dust nuisance caused by transportation activities. Any mitigation measures recommended for fugitive dust control should be well documented in the EIA report.	The evaluation of direct mitigation measures is discussed in S3.8 Transportation impacts are discussed in S3.5, S3.6, Appendix 3.2, 3.3 Dust mitigation measures are discussed in S3.8, S3.9
(v) - 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.	S3.10
<u>Operational Phase Air Quality Impact</u> (i) - The Applicant shall assess the expected air quality impact arising from the activities in the proposed Project site, including odour and gaseous emissions, if any, from the sewage treatment plant and associated facilities, and odour from transport of sludge and organic wastes, during the operational phase based on assumed reasonably worst case scenario under normal operating condition.	S3.5.2
(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 earned 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.	S3.6.3, S3.8
(iii) - 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 proper operational odour control.	S3.10

Study Brief	Remark
Quantitative Assessment Methodology (i) - The Applicant shall conduct the quantitative assessment by applying the general principles enunciated in the modeling guidelines in Appendix B-I 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.	S3.6
(ii) - 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.	S3.6 Appendix 3.2, Appendix 3.4, Appendix 3.5, Appendix 3.6, Appendix 3.7
(iii) - 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 Appendices 3.2 – 3.7
(iv) - 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.	S3.7 Figure 3.1 – 3.16
(v) - 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 assessment area as defined in section 3.4.4.2. 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.	S3.6 Appendix 3.7

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Mitigation Measures for Air Quality Impact *Consideration for Mitigation Measures* (i) - When the predicted air quality impact exceeds the criteria set in section 1 of Annex 4 in the TM, the Applicant shall consider mitigation measures to reduce the air quality impact on the identified ASRs. The feasibility, practicability, programming and effectiveness of the recommended mitigation measures shall be assessed and documented in the EIA report. Specific reasons for not adopting certain workable mitigation measures to reduce the air quality to a level meeting the criteria in the TM or to maximize the protection of the ASRs as far as possible should be clearly substantiated and documented in the EIA report	n/a
Evaluation of Residual Air Quality Impact (ii) - Upon consideration of mitigation measures, if the mitigated air quality impact still exceeds the relevant criteria in Annex 4 of the TM, the Applicant shall identify, predict, and evaluate the residual air quality impact in accordance with section 4.4.3 and section 4.5.1(d) of the TM.	n/a
Submission of Emission Calculation Details and Model Files All input and output file(s) of the model run(s), including those files for the generation of pollution contours as well as the emissions calculation worksheets, shall be submitted to the Director in electronic format together with the submission of the EIA report.	Noted
APPENDIX C (Requirements for Noise Impact Assessment)	
Description of the Noise Environment S.1.1 - The Applicant shall describe the prevailing noise environment in the EIA report.	S4.3
S.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.	S4.4
Construction Noise Impact Assessment *Construction Noise Impact Assessment Methodology* S.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

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Identification of Construction Noise Impact *Identification of Assessment Area and Noise Sensitive Receivers (NSRs)* S.2.2.1(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.	S4.4
S.2.2.1(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
S.2.2.1(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.	A WP on NIA presented the assessment methodology has been submitted to EPD on 3rd May 2021 and revised WP was submitted on 23rd July 2021 & 8th October 2021 for agreement with the Director.
S.2.2.1(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.	Table 4.6 – Table 4.8 Figure 4.1 Appendix 4.2
Inventory of Noise Sources S.2.2.2 - The Applicant shall identify and quantify an inventory of noise sources for representative construction equipment for the purpose of construction noise impact assessment.	S4.5 Appendix 4.4, Appendix 4.7
Prediction and Evaluation of Construction Noise Impact *Phases of Construction* S.2.3.1 - 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.	A WP on NIA presented the assessment methodology has been submitted to EPD on 3rd May 2021 and revised WP was submitted on 23rd July 2021 & 8th October 2021 for agreement with the Director.
Scenarios S.2.3.2 - 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.	S4.6, S4.7

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Prediction of Noise Impact S.2.3.3(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 4.11, Table 4.14 Appendix 4.6, Appendix 4.7
S.2.3.3(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 E1A study on existing NSRs within the assessment area.	S4.5 Appendix 4.6, Appendix 4.8
S.2.3.3(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.	S4.7.1
S.2.3.3(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.	S4.6
Mitigation of Construction Noise Impact *Direct Mitigation Measures* S.2.4.1 - Where the predicted construction noise impact exceeds the criteria set in Table 1 B 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	S4.8

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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.	
Evaluation of Residual Construction Noise Impact S.2.5 - 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.	N/A
Fixed Noise Sources Impact Assessment *Fixed Noise Sources Impact Assessment Methodology* S.3.1 - 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.	Noted
Identification of Fixed Noise Sources Impact *Identification of Assessment Area and Noise Sensitive Receivers (NSRs)* S.3.2.1(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.	S4.4 and a WP on NIA presented the assessment methodology has been submitted to EPD 3rd May 2021 and revised WP was submitted on 23rd July 2021 & 8th October 2021 for agreement with the Director.
S.3.2.1(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
S.3.2.1(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 El A study.	S4.4 and a WP on NIA presented the assessment methodology has been submitted to EPD on 3rd May 2021 and revised WP was submitted on 23rd July 2021 & 8th

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	October 2021 for agreement with the Director.
S.3.2.1(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.	S.4.4 to present the location, description, use and number of storeys of the NAPs, as well as the photos of existing NSRs. S.4.4 should be read in conjunction with Table 4.8, Figure 4.1 and Appendix 4.2.
S.3.2.1(e) - For planned noise sensitive land uses without committed site layouts, the Applicant should use the relevant land use 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.	NAP selection for planned noise sensitive site is referenced to the best available information (i.e. Revised Recommended Outline Development Plan (RODP) for YLS DA).
Inventory of Noise Sources S.3.2.2(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, S4.6 Appendix 4.6
S.3.2.2(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.	S4.6 Appendix 4.6
S.3.2.2(c) - Validity of the inventory shall be confirmed with the relevant government departments/authorities and documented in the EIA report.	S4.6 Appendix 4.6
Prediction and Evaluation of Fixed Noise Sources Impact *Scenarios* S.3.3.1(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	S4.7

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emission in connection of identified noise sources of the Project; and (ii) any other operation modes as confirmed with the Director.	
S.3.3.1(b) - Validity of the above operation modes shall be confirmed with relevant departments/authorities and documented in the EIA report.	S4.6 Appendix 4.6, Appendix 4.7
Prediction of Noise Impact S.3.3.2(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.	S4.7 Table 4.12 Appendix 4.6
S.3.3.2(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.	S4.7
S.3.3.2(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.	S4.7
Mitigation of Fixed Noise Sources Impact *Direct Mitigation Measures* S.3.4.1 - 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
Evaluation of Residual Fixed Noise Sources Impact S.3.5 - 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	n/a
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.	S5.5, S5.6
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-l. Possible impacts due to dredging, fill extraction, backfilling, transportation anddisposal 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 – S5.6 Appendix 5.5
3. The assessment shall include, but not be limited to the following: (i). the water quality impacts during the construction of the effluent discharge pipe for the purpose of temporary and accidental emergency discharge;	S5.6
(ii). the assessment on operation stage shall have regard to the frequency, duration, volume and flow rate of the discharges and its pollutant;	S5.6
(iii). the water quality impacts of temporary and accidental discharges at the EPP during construction and operation stages of the Project to the surrounding waterbodies, such as Deep Bay, North Western and other affected Water Control Zones;	S5.6 Appendix 3.4, Appendix 5.5
(iv). the water quality impacts of chemical spillage during construction and operation stages of the Project in particular the	S5.6

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accidental spillage associated with transfer and storage of chemicals during operation of the Project;	
(v). the water quality impacts during the receiving and co-digesting of organic waste; and	S5.6
(vi). the water quality impacts during the operation of the treated sewage effluent reuse and the arrangement if the supply of the treated sewage effluent exceeds the demand.	S5.6 Appendix 5.5
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, S5.4, S5.6 Appendix 5.1, Appendices 5.3 – 5.5 Figure 5.1
(ii). characterize water quality of the water systems and sensitive receivers, which might be affected by the Project based on existing best available information and through appropriate site survey and tests when existing data are insufficient;	Ditto
(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, inter alia, 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 land use plans;	S5.3, S5.4 Appendix 5.3
(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;	S5.1, 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;	S5.6
(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;	S5.3
(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	S5.6, S5.8

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discharge generated from the Project;	
(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, S5.6
(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. The use of disinfection shall be carefully evaluated;	S5.6 Appendix 5.4, Appendix 5.5
(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, S5.8
(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, S5.8
(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 in considering the stressed condition within Deep Bay catchment. Requirements to be incorporated in the Project contract document shall also be proposed;	S5.7, S5.10
(xiii). investigate and develop best management practices to reduce storm water and non-point source pollution as appropriate;	S5.6, S5.7, S5.10
(xiv). evaluate and quantify residual impacts on water system(s) and the sensitive receivers with regard to the appropriate water quality objectives, criteria, standards or guidelines;	S5.8
(xv). 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 from both sewage and organic waste, anticipated performance of the treatment and disinfection process at the proposed EPP, the	S5.5, S5.6 Appendix 5.5

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finding of previous studies, and conducting additional samplings and tests if needed;	
(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 Appendix D-I to this El A study brief; and	S5.7, S5.8, S5.10
(xvii). recommend appropriate mitigation measures, including a contingency plan, to minimize the duration and impact of temporary and accidental discharges during operation stage of the Project.	Ditto
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.	S5.5
2. The modelling software shall consist of hydrodynamic, water quality, sediment transport, thermal and particle dispersion modules. All modules shall have been proven with successful applications locally and overseas.	S5.5
3. The hydrodynamic, water quality, sediment transport and thermal modules shall be strictly mass conserved at all levels.	S5.5
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.	S5.5
<u>Model details – Calibration & 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 (Lerna) Channel. The field data set for calibration and validation shall be agreed with EPD.	S5.5
2. Tidal data shall be calibrated and validated in both frequency and time domain manner.	S5.5
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.	Appendix 5.3
4. In general the hydrodynamic models shall be calibrated to the following criteria: 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 / < 1 5 degrees • maximum salinity deviation / < 2.5 ppt @ 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	Ditto
5. The Applicant 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.	S5.5
<u>Model details - Simulation</u> 1. 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, E. coli and benthic processes. It shall also simulate salinity. Salinity results simulated by hydrodynamic models and water quality models shall be demonstrated to be consistent.	S5.5 Appendices 5.4 – 5.7
2. The sediment transport module for assessing impacts of	Ditto

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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.	
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.	Appendix 5.2
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.	Ditto
5. The Applicant shall submit a Water Quality Modelling Plan for agreement with EPD before proceeding to modelling assessment. The Plan shall at least demonstrate that the models meet the requirements as set out under the sections of Modelling software general, Model details - Calibration & Validation and Model details - Simulation in this Appendix.	S5.5 and a WP on WIA presented the assessment methodology has been submitted to EPD on 20th October 2020 and revised WP was submitted on 6th October 2021 for agreement with the Director.
<u>Modelling assessment</u> 1. The assessment shall include the construction and operation 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.	S5.5
2. Hydrodynamic, 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. Water quality module shall run for a complete year incorporating monthly variations in Pearl River discharges, solar radiation, water temperature and wind velocity in the operational stage. If necessary, construction stage impacts may be assessed by simulating typical spring-neap cycles in the dry and wet seasons.	
3. For assessing temporary discharges via the emergency outfall, 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.	Appendix 5.6, Appendix 5.7
4. The results shall be assessed for compliance of Water Quality Objectives.	Noted
5. The impact on all sensitive receivers shall be assessed.	Noted
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.	Noted
7. All modelling input data and results shall be submitted in digital media to EPD upon request.	Noted
APPENDIX E (Requirements for Assessment of Waste Management Implications)	
<u>1. Analysis of Activities and Waste Generation</u> (i) - 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 (C&D) materials, floating refuse, sewage sludge, screening, grits, chemical waste and other wastes which will be generated during construction and operation stages.	S6.5, S6.6
(ii) - The Applicant shall adopt appropriate design, general layout, construction methods and programme to minimize the generation of public fill/inert C&D materials and maximize the use of public fill/inert C&D materials for other construction works.	S6.6
<u>2. 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-	S6.6

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site re-use and recycling shall be evaluated. Measures that can be taken in the planning and design stages e.g. by modifying the design approach and in the construction stage for maximizing waste reduction shall be separately considered;	
(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 (iv) below;	S6.6
(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 wastes identified; and	S6.6.1.9 Table 6.2
(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.	S6.6
APPENDIX F (Requirements for Land Contamination Assessment)	
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.	S7.4, S7.5
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).	S7.5 Appendix 7.1

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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:- (i) - During the course of the El A 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 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).	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.	As the identified potentially contaminated sites are still in operation and there could be change in site activities and land uses within the Project Area prior to development, sampling and analysis and submission of CAR / RAP were unable to be conducted during the course of the EIA study.
(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 : (a) a review of the available and relevant information; (b) an initial contamination evaluation of these sites and possible remediation methods; (c) a confirmation of whether the contamination problem at these sites would be surmountable; (d) a sampling and analysis proposal which shall aim at determining the nature and the extent of the contamination of these sites ; and	 S2 and S3 of Appendix 7.1 S5 of Appendix 7.1 S5 of Appendix 7.1 S4 of Appendix 7.1

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(e) where appropriate, a schedule of submission of revised or supplementary CAP, CAR, RAP and RR as soon as these sites become accessible.	S6 of Appendix 7.1
APPENDIX G (Requirements for Ecological Impact Assessment (Terrestrial and Aquatic))	
1. 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 minimize impacts on recognised sites of conservation importance and other ecologically sensitive areas such as the areas zoned as “Green Belt” and “Conservation Area” on the relevant Outline Zoning Plans, the Tai Lam Country Park, the clean-up reedbed (to be established) and watercourses in the vicinity. 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.	S8.3 – S8.8
2. The assessment shall include the followings: (i) - Review of the findings of relevant studies/surveys and collection of the available information regarding the ecological characters of the assessment area;	S8.4
(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;	S8.4
(iii) - Carrying out necessary field surveys of at least 6 months covering both the wet and dry seasons and the ardeid breeding season, 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
(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. 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; (b) habitat maps of suitable scale (1:1000 to 1:5000) showing the types and locations of habitats/species in the assessment area; (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; (d) representative colour photos of each habitat type and any important ecological features identified; and (e) species found that are rare, endangered and/or listed under local legislation, international conventions for conservation of wildlife/ habitats or red data books.	S8.4 – S8.6 Figure 8.3 Appendix 8.1
(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 watercourses, drainage channels, reedbed, marshes and others, if any; (b) breeding egrets and herons foraging in the wetland habitats above and their flight lines; (c) waterbirds, wetland-dependent and reedbed -associated bird species; (d) freshwater crabs, in particular Somanniathelphusa zanklon and Cryptopotamon anacoluthon', and (e) any other habitats or species identified as having special conservation interests by this study.	S8.5, S8.6
(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,	S8.7, S8.8

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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 : (a) noise, glare, dust and other human disturbance to wildlife in particular breeding ardeids, waterbirds, wetland-dependent and reedbed-associated bird species, freshwater crabs and sensitive wetland habitats in the vicinity such as reedbed and watercourses during construction and operation phases; (b) indirect ecological impacts due to changes in the water quality and 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 watercourses, drainage channels, reedbed and other wetland habitats in the assessment area during construction and operation phases; (c) disturbance and obstruction of flight lines of breeding ardeids from major breeding sites to foraging grounds; (d) impacts on birds due to collision to buildings; and (e) cumulative impacts due to the Yuen Long South Development which will cause direct loss of habitats within the boundary of the Project, as well as the rising main for raw sewage and rising main for treated sewage effluent.	
(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;	S8.8
(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;	S8.9
(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;	
(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	S8.10
(xii) - Review of the need for and recommendation on any ecological monitoring programme required.	S8.11
APPENDIX H (Requirements for Landscape and Visual Impact Assessment)	
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.	Noted
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	S9.5, S9.6 Figure 9.3 – 9.6

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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 earned 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.	
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;	S9.5, S9.6 Figure 9.7, Figure 9.8
(ii) - appraisal of existing visual resources and character as well as the future outlook of the visual system of the assessment area;	S9.5 Figure 9.7, Figure 9.8
(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 vantage points;	S9.5 Figure 9.7, Figure 9.8
(iv) - 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; and	S9.6 Figure 9.7, Figure 9.8
(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.	S9.5, S9.6 Figure 9.7, Figure 9.8
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.	S9.6, S9.7 Figure 9.9 – 9.14
5. The mitigation measures shall also include the preservation of vegetation, transplanting trees in good condition and value,	S9.7, S12 Figure 9.9 – 9.14

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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.	
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.	Figure 9.1 – 9.14
APPENDIX I (Requirements for Hazard to Life Assessment)	
Biogas 1. The Applicant shall investigate methods to avoid and/or minimize biogas risk during the operation stages of the Project. The Applicant shall carry out hazard assessment to evaluate potential hazard to life due to biogas.	S10.5 – S10.8
2. The hazard assessment shall include the following. (i) - Identify hazardous scenarios associated with the generation,	S10.5

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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);	
(ii) - Execute a QRA of the set of hazardous scenarios determined in sub-section (i) above, expressing population risks in both individual and societal terms;	S10.8
(iii) - Compare individual and societal risks with the criteria for evaluating hazard to life stipulated in Annex 4 of the TM; and	S10.8
(iv) - Identify and assess practicable and cost-effective risk mitigation measures.	S10.9
3. 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).	S10.3.
Chlorine and other non-fuel gas DGs 4. The Applicant shall investigate methods to avoid and/or minimize risks from chlorine and other DGs defined in Dangerous Goods Ordinance (Cap. 295) but not covered by Gas Safety Ordinance (Cap. 51), i.e. non-fuel gas DGs. If chlorine/other non-fuel gas DGs will be stored and used in the Project, the Applicant shall carry out hazard assessment to evaluate potential hazard to life due to chlorine/other non-fuel gas DGs.	S10.1
5. The hazard assessment shall include the following: (i) - Identify hazardous scenarios associated with the transport, storage, manufacture and use of chlorine/other non-fuel gas DGs due to the Project and then determine a set of relevant scenarios to be included in a Quantitative Risk Assessment (QRA);	S10.1
(ii) - Execute a QRA of the set of hazardous scenarios determined in (5)(i), expressing population risks in both individual and societal terms;	S10.1
(iii) - Compare individual and societal risks with the criteria for evaluating hazard to life stipulated in Annex 4 of the TM; and	S10.1
(iv) - Identity and assess practicable and cost-effective risk mitigation measures.	S10.1
6. The methodology to be used in the hazard assessment shall be consistent with previous studies having similar issues.	Noted
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:	Noted

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(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.	
(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.	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.	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, Chorme and Safari 8 or later versions as agreed by the Director, and support languages including Traditional Chinese, Simplified Chinese and English.	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.	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.	Noted
5. To promote environmentally friendly and efficient dissemination	Noted

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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.	