ENVIRONMENTAL IMPACT ASSESSMENT ORDINANCE (CAP. 499)
SECTION 5(7)

ENVIRONMENTAL IMPACT ASSESSMENT STUDY BRIEF NO. ESB-277/2014

PROJECT TITLE: ENGINEERING FEASIBILITY STUDY FOR INDUSTRIAL ESTATE AT TUEN MUN AREA 38
(hereinafter known as the "Project")

NAME OF APPLICANT: HONG KONG SCIENCE AND TECHNOLOGY PARKS CORPORATION
(hereinafter known as the "Applicant")

1. BACKGROUND

1.1 An application (No. ESB-277/2014) for an Environmental Impact Assessment (EIA) Study Brief under section 5(1)(a) of the Environmental Impact Assessment Ordinance (EIAO) was submitted by the Applicant on 30 July 2014 with a Project Profile (No. PP-513/2014) (hereinafter referred as the "Project Profile").

1.2 The Applicant proposes to conduct a planning and engineering feasibility study, "Engineering Feasibility Study for Industrial Estate (IE) at Tuen Mun Areas 38" (the Study), to review the future land uses for Industrial Estate at Tuen Mun Area 38. The study will also determine the associated infrastructure works necessary for the proposed developments for confirming their feasibility and formulating their implementation strategies and programme. The Project is an engineering study with a total study area of more than 20ha and is located at the south western part of Tuen Mun. The location of the Project is shown in Figure 1.1 of the Project Profile which is reproduced as Appendix A of this EIA Study Brief.

1.3 The Project is a designated project under Item 1 of Schedule 3 of the EIAO, which specifies that an "Engineering feasibility study of urban development projects with a study area covering more than 20 ha or involving a total population of more than 100,000" is a designated project. There are two development scenarios being considered in the engineering feasibility study. Scenario One comprises an IE and a Temporary Loading and Storage of Petrochemical Feedstock. Scenario Two comprises an IE only with an option to use the pier facilities. The associated infrastructure works for the proposed developments include road works, sewerage works, drainage works, marine dredging works, waterworks and utility, etc., within the Study Area. Hence, the Project may also comprise the following individual designated projects under the corresponding items in Part I, Schedule 2 of the EIAO and others to be identified during the course of the EIA study:

i) Industrial Estate [Item K.1]
ii) Dangerous Goods Down with storage capacity exceeding 500 tonnes [Item K13]
iii) New district distributor roads and/or major improvements to existing roads [Item A1]
iv) Sewage treatment works with an installed capacity of more than 15,000m^3 per day [Item F.1]
v) A submarine sewage outfall [Item F.6]

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.

1.5 The purpose of this EIA study is to provide information on the nature and extent of environmental impacts from the construction and operation of the developments and works proposed under the Project. This information will contribute to decisions by the Director on:

(i) the acceptability of adverse environmental consequences that are likely to arise as a result of the Project and their staged implementation;

(ii) the conditions and requirements for the design, construction and operation of the Project to mitigate against adverse environmental consequences; and

(iii) the acceptability of residual impacts, if any, after the proposed mitigation measures are implemented.

2.1 The objectives of the EIA study are as follows:

(i) to describe the Project and associated works together with the requirements and environmental benefits for carrying out the Project;

(ii) to identify and describe the elements of the 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;

(iii) to identify and quantify emission sources and determine the significance of impacts on sensitive receivers and potential affected uses;

(iv) to identify and quantify any potential losses or damage to flora, fauna and natural habitats;

(v) to propose the provision of infrastructure or mitigation measures to minimise pollution, environmental disturbance and nuisance during construction and operation of the Project;

(vi) to investigate the feasibility, effectiveness and implications of the proposed mitigation measures;

(vii) 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 operational phases of the Project in relation to the sensitive receivers and potential affected uses;

(viii) to identify, assess and specify methods, measures and standards, to be included in the detailed design, construction and operation of the Project which are necessary to mitigate these residual environmental impacts and cumulative effects and reduce them to acceptable levels;

(ix) to identify individual project(s) proposed under the Project that fall under

Schedule 2 of the EIAO; to ascertain whether the findings of this EIA study have adequately addressed the environmental impacts of those projects; and where necessary, to identify the outstanding issues that need to be addressed in any further detailed EIA study; and

(x) to design and specify the environmental monitoring and audit requirements; and

(xi) to identify any additional studies necessary to implement the mitigation measures or monitoring and proposals recommended in the EIA report.

3. DETAILED REQUIREMENTS OF THE EIA STUDY

3.1 The Purpose

3.1.1 The purpose of this EIA Study Brief is to set out the purposes and objectives of the EIA study, the scope of environmental issues which shall be addressed, the requirements that the EIA study shall need to fulfil, and the necessary procedural and reporting requirements. The Applicant shall demonstrate in the EIA report that the criteria in the relevant sections of the Technical Memorandum on Environmental Impact Assessment Process of the EIAO (hereinafter referred to as the "TM") are complied with.

3.2 The Scope

3.2.1 The scope of this EIA study shall cover the Project mentioned in sections 1.2 and 1.3 of this EIA Study Brief. For the purpose of assessing whether the environmental impacts shall comply with the criteria of the TM, the EIA study shall address the key issues described below, together with any other key issues identified during the course of the EIA study:

(i) the potential air quality impact on air sensitive receivers due to the construction and operation of the Project for dust, gaseous emissions and odour (if applicable) from the construction and operation of the Project;

(ii) the potential noise impact on noise sensitive receivers of the Project from construction equipment during construction phase and from road traffic and fixed noise sources during operational phase of the Project;

(iii) the potential water quality impact on the relevant water system(s) and water sensitive receivers due to the construction and operation of the Project including any associated works such as dredging (if any) during construction phase and sewage treatment and disposal provisions during operation phase of the Project;

(iv) the potential sewerage and sewage treatment implications to cope with discharges from population and development due to the Project, and the capacity requirements for the existing, committed and planned developments in the same sewage catchment as the Project;

(v) the potential waste management implications due to the construction and operation of the Project;

(vi) the potential land contamination due to the Project;

(vii) the potential landfill gas hazard due to the construction and operation of the Project for the part of the Project site which falls within the 250-metre consultation zone of the restored Siu Lang Shui Landfill;

(viii) the potential hazard to life due to the construction and operation of the PP site in the Project;

(ix) the potential ecological impact on ecological sensitive areas due to the construction and operation of the Project;

(x) the potential landscape and visual impacts due to the construction and operation of the Project; and

(xi) the potential cumulative environmental impacts of the Project, through interaction or in combination with other existing, committed and planned projects in the vicinity of the Project, and that those impacts may have a bearing on the environmental acceptability of the Project. Consideration shall be given to account for impacts from likely concurrent projects, including Lung Kwu Tan potential reclamation site, 3rd airport runway, engineering and feasibility study of Tuen Mun Area 40 and 46, the planned major roads such as the Tuen Mun – Chek Lap Kok Link and the Tuen Mun Western Bypass, and the Upgrading of Pillar Point Sewage Treatment Works.

3.3 Consideration of Alternatives

3.3.1 Consideration of Different Development Scenarios

The Applicant shall describe the background and history of the Project, and the elements of the community and environment with or without the Project. The Applicant shall also consider alternative development options and siting or alignmentfor the Project and provide justifications regarding how the development scenarios and business mixes are arrived at. The Applicant shall describe the environmental factors considered in the option selection.

3.3.2 Consideration of Alternative Construction Methods

Taking into consideration the combined effect with respect to the severity and duration of the construction impacts to the affected sensitive receivers, the EIA study shall describe alternative construction methods for the Project.

3.4 Technical Requirements

The Applicant shall conduct the EIA study to address the environmental aspects of the Project as described in section 3.2 above. The assessment shall be based on the latest information available during the course of the EIA study. The EIA report shall provide the construction and operational programme and methodologies for assessing environmental impacts of the Project. The EIA report shall provide the time frame, staged implementation programme, and works programmes of the Project and other concurrent projects, for assessing the cumulative environmental impacts from the Project and the interacting projects as identified in the EIA study.

The EIA study shall follow the technical requirements specified below and in the Appendices of this EIA Study Brief.

3.4.1 Air Quality Impact

3.4.1.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing air quality impact as stated in Section 1 of Annex 4 and Annex 12 of the TM.

3.4.1.2 The study area for the air quality impact assessment shall be defined by a distance of 500 metres from the boundary of the Project Site, which shall be extended to include major existing, committed and planned air pollutant emission sources that may have a bearing on the environmental acceptability of the Project. The assessment shall include the existing, committed and planned sensitive receivers within the study area as well as areas where air quality may be potentially affected by the Project. The assessment shall be based on the best available information at the time of the assessment.

3.4.1.3 The assessment of the air quality impact from the construction and operation of the Project shall follow the detailed technical requirements given in Appendix B of this EIA Study Brief.

3.4.1.4 The Applicant shall assess the air pollutant concentrations with reference to the relevant sections of the guidelines given in Appendix B-1 of this EIA Study Brief, or other methodology as agreed by the Director.

3.4.2 Noise Impact

3.4.2.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing noise impact as stated in Annexes 5 and 13 of the TM.

3.4.2.2 The assessment area for the noise impact assessment shall generally include areas within 300 metres from the boundary of the Project Site and the works of the Project within the Study Area as identified in the EIA. Subject to the agreement of the Director, the assessment area can be reduced accordingly if the first layer of noise sensitive receivers (NSRs), closer than 300 metres from the outer Project limit, provides acoustic shielding to those receivers at distances further away from the Project. The assessment area shall be expanded to include NSRs at distances over 300 metres from the Project which are affected by the construction and operation of the Project. The assessment shall also take into account the impacts of emission sources from nearby concurrent projects.

3.4.2.3 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.

3.4.3 Water Quality Impact

3.4.3.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing water pollution as stated in Annexes 6 and 14 of the TM.

3.4.3.2 The assessment area for the water quality impact assessment shall include areas within 500 metres from the boundary of the Project Site and the works of the Project within the Study Area as identified in the EIA, and shall cover the North Western Water Control Zone as designated under the Water Pollution Control Ordinance (Cap. 358) and the water sensitive receivers 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.

3.4.3.3 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.

3.4.4 Sewerage and Sewage Treatment Implications

3.4.4.1 The Applicant shall follow the guidelines for evaluating and assessing impacts of the sewerage, sewage treatment and disposal facilities as stated in sections 6.1 to 6.5 in Annex 14 of the TM.

3.4.4.2 The assessment of the sewerage and sewage treatment implications for the Project shall follow the detailed technical requirements given in Appendix E of this EIA Study Brief.

3.4.5 Waste Management Implications

3.4.5.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing waste management implications as stated in Annexes 7 and 15 of the TM respectively.

3.4.5.2 The assessment of the waste management implications from the Project shall follow the detailed technical requirements given in Appendix F of this EIA Study Brief.

3.4.6 Land Contamination

3.4.6.1 The Applicant shall follow the guidelines for evaluating and assessing potential land contamination issue as stated in sections 3.1 and 3.2 of Annex 19 of the TM.

3.4.6.2 The assessment of the potential land contamination issue shall follow the detailed requirements given in Appendix G of this EIA Study Brief.

3.4.7 Landfill Gas Hazard

3.4.7.1 The Applicant shall identify and justify in the EIA study whether there is any need for landfill gas hazard assessment associated with the construction and operation of the developments proposed under the Project. If the Project site falls within the 250-metre consultation zone of the restored Siu Lang Shui Landfill, the Applicant shall follow the criteria and guidelines for evaluating and assessing landfill gas hazard as stated respectively in Annexes 7 and 19 of the TM and the Landfill Gas Hazard Assessment Guidance Note issued by the Director.

3.4.7.2 The landfill gas hazard assessment for the construction and operation of the Project shall follow the detailed technical requirements given in Appendix H of this EIA Study Brief.

3.4.8 Hazard to Life

3.4.8.1 The Applicant shall follow the criteria for evaluating hazard to life as stated in Annex 4 of the TM.

3.4.8.2 The hazard assessment for the construction and operation of the Project shall follow the detailed technical requirements given in Appendix I of this EIA Study Brief.

3.4.9 Ecological Impact

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.

3.4.9.2 The assessment area for the terrestrial ecological impact assessment shall include areas within 500 metres from the boundary of the Project Site and the land-based works of the Project within the Study Area as identified in the EIA as well as the areas likely to be impacted by the Project. For marine ecological impact assessment (if marine works including but not limited to reclamation, dredging operation, modification of pier / seawall, construction of new sewage treatment facility and submarine outfall; or discharge of sewage effluent from the new sewage treatment facility / submarine outfall is proposed under the Project), the assessment area shall be the same as the assessment area for Water Quality Impact Assessment described in section 3.4.3.2 of this EIA Study Brief.

3.4.9.3 The assessment of the ecological impact for the construction and operation of the Project shall follow the detailed technical requirements given in Appendix J of this EIA Study Brief.

3.4.10 Landscape and Visual Impacts

3.4.10.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing landscape and visual impacts as stated in Annexes 10 and 18 of the TM, and the EIAO Guidance Note No. 8/2010 "Preparation of Landscape and Visual Impact Assessment under the EIAO".

3.4.10.2 The assessment area for the landscape impact assessment shall include landscape character areas and landscape resources within 500 metres from the boundary of the Project Site and the works of the Project within the Study Area as identified in the EIA, while the assessment area for the visual impact assessment shall be defined by the visual envelope of the Project. The extent of the defined visual envelope shall be shown on a plan and documented in the EIA report.

3.4.10.3 The landscape and visual impact assessment for the construction and operation of the Project shall follow the detailed technical requirements given in Appendix K of this EIA Study Brief.

3.4.11 Cultural Heritage Impact

3.4.11.1 The Applicant shall identify and justify in the EIA study whether there is any need for cultural heritage impact assessment associated with the construction and operation of the developments proposed under the Project.

3.4.11.2 If a cultural heritage impact assessment is needed, the Applicant shall follow the criteria and guidelines for evaluating and assessing cultural heritage impact as stated in Annexes 10 and 19 of the TM.

3.4.12 Health Impacts

3.4.12.1 If a significant increase in levels of air pollutants to human receivers due to the project is predicted, the Applicant shall conduct health impact assessment for the increase in the identified air pollutants. For this purpose, the Applicant shall assess the potential health impact on human in relation to air pollutants (including toxic substances) from the

operation of the Loading and Storage of Petrochemical Feedstock in the Project in accordance with the technical requirements given in Appendix L.

3.4.12.2 The health impact assessment shall be based on established practices in countries around the world. A literature search shall be carried out to determine the best approach and methodology for the health impact assessment, including any codes of practices, guidelines, etc. applied locally in Hong Kong and elsewhere in the world. The approach and methodology to be adopted shall be agreed by the Director prior to the commencement of assessment.

3.4.13 Environmental Monitoring and Audit (EM&A) Requirements

3.4.13.1 The Applicant shall identify and justify in the EIA study whether there is any need for EM&A activities during the construction and operational phases of the Project and, if affirmative, to define the scope of EM&A requirements for the Project in the EIA study.

3.4.13.2 Subject to the confirmation of the EIA study findings, the Applicant shall comply with the requirements as stipulated in Annex 21 of the TM.

3.4.13.3 The Applicant shall prepare a project implementation schedule (in the form of a checklist as shown in Appendix M of this EIA Study Brief) containing the EIA study recommendations and mitigation measures with reference to the implementation programme of the Project.

3.5 Presentation of Summary Information

3.5.1 Summary of Environmental Outcomes

The EIA report shall contain a summary of key environmental outcomes 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.

3.5.2 Summary of Environmental Impacts

To facilitate 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 exceedance 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.

3.5.3 Documentation of Key Assessment Assumptions and Limitations of Assessment Methodologies

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 methodologies/assumptions. 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). The

supporting documents shall be provided in the EIA report.

4. DURATION OF VALIDITY

4.1 The Applicant shall notify the Director of the commencement of the EIA study. If the EIA study does not commence within 36 months after the date of issue of this EIA Study Brief, the Applicant shall apply to the Director for a fresh EIA study brief before commencement of the EIA study.

5. REPORTING REQUIREMENTS

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 accompany with the submission of the EIA report a summary, pointing out where in the EIA report the respective requirements of this EIA study have been addressed and fulfilled.

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 N of this EIA Study Brief. The Applicant shall, upon request, make additional copies of the above documents available to the public, subject to payment by the interested parties of full costs of printing.

6. OTHER PROCEDURAL REQUIREMENTS

6.1 If there is any change in the name of Applicant for this EIA Study Brief during the course of the EIA study, the Applicant must notify the Director immediately.

6.2 If there is any key change in the scope of the Project mentioned in section 1.2 of this EIA Study Brief and in the Project Profile (No. PP-513/2014), the Applicant must seek confirmation from the Director in writing on whether or not the scope of issues covered by this EIA Study Brief can still cover the key changes, and the additional issues, if any, that the EIA study must also address. If the changes to the Project fundamentally alter the key scope of this EIA Study Brief, the Applicant shall apply to the Director for a fresh EIA study brief.

7. LIST OF APPENDICES

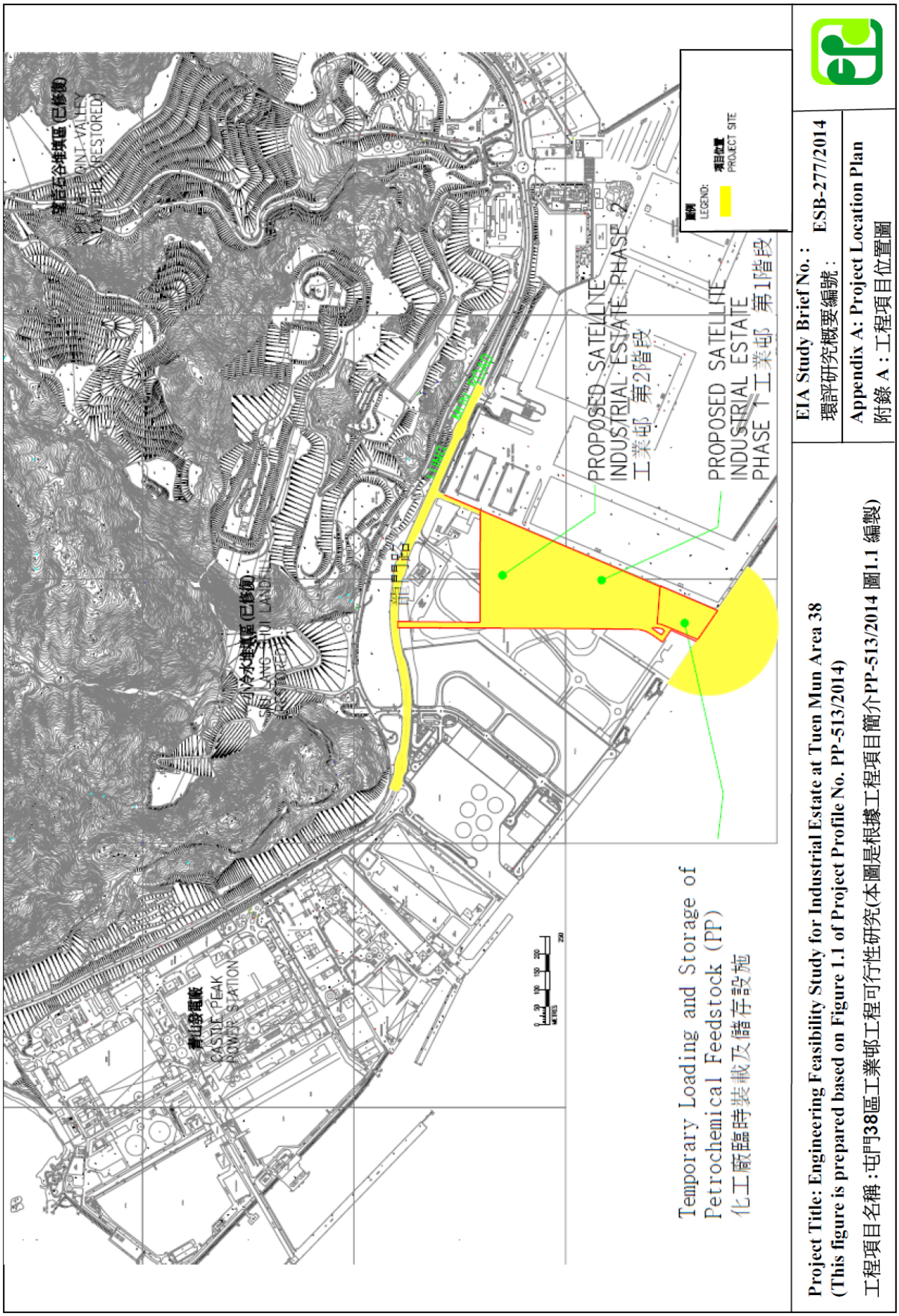
7.1 This EIA Study Brief includes the following appendices:

Appendix A – Project Location Plan
Appendix B – Requirements for Air Quality Impact Assessment
Appendix B-1 – Air Quality Modelling Guidelines
Appendix C – Requirements for Noise Impact Assessment
Appendix D – Requirements for Water Quality Impact Assessment
Appendix D-1 – Hydrodynamic and Water Quality Modelling Requirements
Appendix E – Requirements for Assessment of Sewerage and Sewage Treatment Implications
Appendix F – Requirements for Assessment of Waste Management Implications
Appendix G – Requirements for Land Contamination Assessment
Appendix H – Requirements for Landfill Gas Hazard Assessment

Appendix I – Requirements for Hazard Assessment
Appendix J Requirements for Ecological Impact Assessment
Appendix K – Requirements for Landscape and Visual Impact Assessment
Appendix L – Requirements for Health Impact Assessment of Air Pollutants (including toxic substances)
Appendix M – Implementation Schedule of Recommended Mitigation Measures
Appendix N – Requirements for EIA Report Documents

--- END OF EIA STUDY BRIEF ---

September 2014
Environmental Assessment Division
Environmental Protection Department


PROPOSED SATELLITE INDUSTRIAL ESTATE PHASE 2
工業邨 第2階段
PROPOSED SATELLITE INDUSTRIAL ESTATE PHASE 1
工業邨 第1階段
LEGEND:
PROJECT SITE
Temporary Loading and Storage of Petrochemical Feedstock (PP)
化工廠臨時裝載及儲存設施
CASTLE PEAK POWER STATION
青山發電廠
PINT VALLEY (RESTORED)
SAN LAND (RESTORED)
EIA Study Brief No. : ESB-277/2014
環評研究概要編號 :
Appendix A: Project Location Plan
附錄 A：工程項目位置圖
Project Title: Engineering Feasibility Study for Industrial Estate at Tuen Mun Area 38
(This figure is prepared based on Figure 1.1 of Project Profile No. PP-513/2014)
工程項目名稱 :屯門38區工業邨工程可行性研究(本圖是根據工程項目簡介PP-513/2014 圖1.1 編製)

Appendix B

Requirements for Air Quality Impact Assessment

The air quality impact assessment shall include the following:

1. 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 both construction and operational stages of the Project.

   (ii) Provision of an account, where appropriate, of the consideration/measures that have been taken into consideration in the planning of the Project to abate the air pollution impact. The Applicant shall consider alternative construction methods, phasing programmes and alternative modes of operation to minimise the air quality impact during construction and operational stages of the Project.

   (iii) Presentation of background air quality levels in the assessment area for the purpose of evaluating cumulative air quality impacts during the construction and operational stages of the Project. If the PATH model is used to estimate the background air quality, details for the estimation of the emission sources to be adopted in the model runs should be clearly presented.

2. 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, 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. 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 a table with description such as name of buildings, their uses and height of the selected assessment points shall be given. The separation distances of these ASRs from the nearest emission sources shall also be given. For phased development, the Applicant shall review the development programme and, where appropriate, to include occupiers of earlier phases as ASRs of construction phase impact if they may be affected by works of later phases.

   (ii) Provision of a list of air pollutant 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 operational activities in section 1 above. Examples of construction stage emission sources include stock piling, concrete batching, material handling and vehicular movements on paved or unpaved haul roads on site. Examples of operational stage emission sources include vehicular emissions; marine vessel emissions; gaseous emissions such as volatile organic compounds (VOCs) from production processes/facilities; and odour emissions from sewage treatment/disposal facilities, ventilation buildings and production processes/facilities. Confirmation regarding the validity of assumptions and the magnitude of activities

(e.g. volume of construction material to be handled, odour emission strength, etc.) shall be obtained from the relevant government departments/authorities and documented in the EIA report.

(iii) Identification of chimneys and obtainment of relevant chimney emission data in the assessment area by carrying out a survey for assessing the cumulative air quality impact of air pollutants through the chimneys. The Applicant shall ensure the validity of the chimney emission data used in the assessment. Any errors found in the chimney emission data may render the submission invalidated.

(iv) Identification of relevant emissions from any concurrent projects, which 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 assessment area shall be assessed, based on the best information available at the time of assessment.

3. Construction Phase Air Quality Impact

(i) The Applicant shall follow the requirements stipulated under the Air Pollution Control (Construction Dust) Regulation to ensure that construction dust impacts are controlled within the relevant criteria as stipulated in Section 1 of Annex 4 in the TM.

(ii) If the Applicant anticipates that the Project will give rise to significant construction dust impact likely to exceed recommended limits in the TM at the ASRs within 500m from the Project boundary despite the incorporation of the dust control measures proposed, a quantitative assessment shall be carried out to evaluate the construction dust impact at the identified ASRs. The Applicant shall follow the methodology set out in section 5 below when carrying out the quantitative assessment.

(iii) 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.

4. Operational Phase Air Quality Impact

(i) The Applicant shall quantify the expected air pollutant concentrations at the identified ASRs based on an assumed reasonably worst-case scenario. The evaluation shall be based on the strength of the emission sources identified in section 2 above. The Applicant shall follow the methodology set out in section 5 below when carrying out the assessment.

(ii) A monitoring and audit programme for the operational phase of the Project shall be devised to verify the effectiveness of the proposed control measures so as to ensure proper control of operational air quality impacts.

5. Quantitative Assessment Methodology

(i) The Applicant shall conduct the quantitative assessment by applying the general principles enunciated in the modelling guidelines in Appendix B-1 while making allowance for the specific characteristic of the Project. The

specific methodology must be documented in such level of details, preferably associated 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.

(ii) For the purpose of assessing the compliance with the criteria as stated in Annex 4 of the TM, the Applicant shall identify the key/representative air pollution parameters (types of pollutants and the averaging time concentrations) to be evaluated and provide explanation for selecting these parameters for assessing the impact of the Project.

(iii) Calculation of the pollutant emission rates for input to the model and a map showing the emission sources/road links shall be presented in the EIA report. The Applicant shall ensure consistency between the text description and the model files at every stage of submissions for review.

(iv) Ozone Limiting Method (OLM) or Discrete Parcel Method (DPM) or other appropriate method shall be used to estimate the conversion ratio of NOx to NO_2 if NO_2 has been identified as a key/representative air pollutant.

(v) The Applicant shall calculate the cumulative air quality impact at the identified ASRs 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 criteria and on any effect they may have on the land use implications. Plans of a suitable scale shall be used to present pollution contours to allow buffer distance requirements to be determined properly.

(vi) The air pollution impacts of future road traffic shall be calculated based on the highest emission strength from the road within the next 15 years upon commencement of operation of the proposed road. The Applicant shall demonstrate that the selected year of assessment represents the highest emission scenario given the combination of vehicular emission factors and traffic flow for the selected year. The Applicant shall propose any Fleet Average Emission Factors used in the assessment. If necessary, the Fleet Average Emission Factors shall be determined by a motor vehicle emission model such as EMFAC-HK model and documented in the EIA report. The traffic flow data and assumptions, such as the exhaust technology fractions, vehicle age/population distribution, traffic forecast and speed fractions, that are used in the assessment shall be presented in the form of both summary table(s) and graph(s).

(vii) If vehicle tunnels and/or full enclosures are proposed in the Project, it is the responsibility of the Applicant to ensure that the air quality inside these proposed structures shall comply with EPD's "Practice Note on Control of Air Pollution in Vehicle Tunnels". When assessing air quality impact due to emissions from tunnels/full enclosures, the Applicant shall ensure prior agreement with the relevant ventilation design engineer over the amount and the types/kinds of pollutants emitted from these full enclosures; and such assumptions shall be clearly and properly documented in the EIA report.

(viii) If there are any direct technical noise remedies recommended in the study, the air

quality implication due to these technical remedies shall be assessed. For instance, if barriers that may affect dispersion of air pollutants are proposed, then the implications of such remedies on air quality impact shall be assessed. If noise enclosure is proposed, then portal emissions of the enclosed road section and air quality inside the enclosed road section shall also be addressed. The Applicant shall highlight clearly the locations and types of agreed noise mitigation measures (where applicable), be they noise barriers, road enclosures and their portals, and affected ASRs, on contour maps for reference.

6. Mitigation Measures for Non-compliance

Where the predicted air quality impact exceeds the criteria set out in Section 1 of Annex 4 of the TM, the Applicant shall consider further mitigation measures to minimize the air quality impact on the identified ASRs. These measures and any constraints on future land use planning shall be agreed with the relevant government departments/authorities and documented. The Applicant shall identify, predict, and evaluate the residual air quality impact in accordance with Section 4.4.3 of the TM.

7. Submission of Emission Calculation Details and Model Files

All input and output file(s) of model run(s) including those files for generating the pollution contours and the calculation of emission rates/factors shall be submitted to the Director in electronic format together with the submission of the EIA report.

Appendix B-1

Air Quality Modelling Guidelines

[The information contained in this Appendix is only meant to assist the Applicant in performing the air quality assessment. The Applicant must exercise professional judgment in applying this general information for the Project.]

The air quality modelling guidelines shall include the following guidelines as published on the website of the Environmental Protection Department (http://www.epd.gov.hk/epd/english/environmentinhk/air/guide_ref/guide_aqa_model.html):

(i) Guidelines on Choice of Models and Model Parameters;

(ii) Guidelines on Assessing the 'Total' Air Quality Impact (Revised);

(iii) Guidelines on the Use of Alternative Computer Models in Air Quality Assessment (Revised);

(iv) Guidelines on the Estimation of PM2.5 for Air Quality Assessment in Hong Kong; and

(v) Guidelines on the Estimation of 10-minute Average SO2 Concentration for Air Quality Assessment in Hong Kong.

Appendix C

Requirements for Noise Impact Assessment

The noise impact assessment shall include the following:

1. Description of the Noise Environment

1.1 The Applicant shall describe the prevailing noise environment in the EIA report.

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.

2. Construction Noise Impact Assessment

2.1 Construction Noise Impact Assessment Methodology

2.1.1 The Applicant shall carry out construction noise impact assessment (excluding percussive piling) of the Project during daytime, i.e. 7am to 7pm, on weekdays other than general holidays in accordance with methodology in paragraphs 5.3 and 5.4 of Annex 13 of the TM.

2.1.2 For ground-borne construction noise impact, the Applicant shall propose assessment methodology and computational model which shall be confirmed with the Director, with reference to Section 4.4.2 of the TM, prior to the commencement of the assessment. Site measurements at appropriate locations may be required in order to obtain the empirical input parameters required in the computational model.

2.2 Identification of Construction Noise Impact

2.2.1 Identification of Assessment Area and Noise Sensitive Receivers

(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 meters from the boundary of the Project and the works of the Project.

(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.

(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.

(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.

2.2.2 Inventory of Noise Sources

The Applicant shall identify and quantify an inventory of noise sources for representative construction equipment for the purpose of construction noise impact assessment.

2.3 Prediction and Evaluation of Construction Noise Impact

2.3.1 Phases of Construction

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.

2.3.2 Scenarios

The Applicant shall quantitatively assess the construction noise impact, with respect to criteria set in Annex 5 of the TM, of unmitigated scenario and mitigated scenario at different phases of construction of the Project.

2.3.3 Prediction of Noise Impact

(a) The Applicant shall present the predicted noise levels in Leq (30 min) dB(A) at the selected assessment points at various representative floor levels (in m P.D.) on tables and plans of suitable scale.

(b) The assessment shall cover the cumulative construction noise impact resulting from the construction works of the Project and other concurrent projects identified during the course of the EIA study on existing NSRs within the assessment area.

(c) The potential construction noise impact under different phases of construction shall be quantified by estimating the total number of dwellings, classrooms and other noise sensitive receivers that will be exposed to noise impact exceeding the criteria set in Annex 5 in the TM.

(d) The Applicant shall, as far as practicable, formulate a reasonable construction programme so that no work will be required in restricted hours as defined under the Noise Control Ordinance (NCO). In case the Applicant needs to evaluate whether construction works in restricted hours as defined under the NCO are feasible or not in the context of programming construction works, reference should be made to relevant technical memoranda issued under the NCO. Regardless of the results of construction noise impact assessment for restricted hours, the Noise Control Authority will process Construction Noise Permit (CNP) application, if necessary, based on the NCO, the relevant technical memoranda issued under the NCO, and the contemporary conditions/situations. This aspect should be explicitly stated in the noise chapter and the conclusions and recommendations chapter in EIA report.

2.4 Mitigation of Construction Noise Impact

2.4.1 Direct Mitigation Measures

Where the predicted construction noise impact exceeds the criteria set in Table 1B of

Annex 5, TM, the Applicant shall consider and evaluate direct mitigation measures including but not limited to, movable barriers, enclosures, quieter alternative methods, re-scheduling, restricting hours of operation of noisy tasks, etc. The feasibility, practicability, programming and effectiveness of the recommended mitigation measures shall be assessed. Any direct mitigation measures recommended should be well documented in the report. Specific reasons for not adopting certain direct mitigation measures to reduce the noise to a level meeting the criteria in the TM or to maximize the protection for the NSRs as far as possible should be clearly substantiated and documented in the EIA report.

2.5 Evaluation of Residual Construction Noise Impact

Upon exhaust of direct mitigation measures, if the mitigated noise impact still exceeds the relevant criteria in Annex 5 of 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.

3. Operational Noise Assessment

3.1 Fixed Noise Sources

3.1.1 Fixed Noise Sources Impact Assessment Methodology

The Applicant shall carry out fixed noise sources impact assessment from the Project in accordance with methodology in paragraph 5.2 of Annex 13 of the TM.

3.1.2 Identification of Assessment Area and Noise Sensitive Receivers

(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 meters from the boundary of the Project and the works of the Project.

(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.

(c) The assessment points shall be confirmed with the Director prior to the commencement of the quantitative fixed noise sources impact assessment and may be varied subject to the best and latest information available during the course of the EIA study.

(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.

(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 assessment purpose. However, such parameters and conditions together with any constraints identified shall be

confirmed with the relevant responsible parties including Planning Department and Lands Department.

3.1.3 Inventory of Noise Sources

(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.

(b) The Applicant shall provide document or certificate, accepted by recognized national/international organization, for the sound power level of each type of fixed noise sources.

(c) Validity of the inventory shall be confirmed with the relevant government departments/authorities and documented in the EIA report.

3.1.4 Prediction and Evaluation of Fixed Noise Sources Impact

3.1.4.1 Scenarios

(a) The Applicant shall quantitatively assess the fixed noise sources impact with respect to criteria set in Annex 5 of the TM, of unmitigated scenario and mitigated scenario at assessment years of various operation modes including, but not limited to,

(i) the worst operation mode which represents the maximum noise emission in connection of identified noise sources of the Project; and

(ii) any other operation modes as confirmed with the Director.

(b) Validity of the above operational modes shall be confirmed with relevant departments/authorities and documented in the EIA report.

3.1.4.2 Prediction of Noise Impact

(a) The Applicant shall present the predicted noise levels in Leq (30 min) at the selected assessment points at various representative floor levels (in m P.D.) on tables and plans of suitable scale.

(b) The assessment shall cover the cumulative noise sources impact associated with the operation of the proposed project on existing, committed and planned NSRs within the assessment area.

(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.

3.1.5 Mitigation of Fixed Noise Sources Impact

Where the predicted fixed noise sources impact exceeds the criteria set in Table 1A of Annex 5, 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 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.

3.1.6 Evaluation of Residual Fixed Noise Sources Impact

Upon exhaust of direct mitigation measures, if the mitigated noise impact still exceeds the relevant criteria in Annex 5 of 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.

3.2 Road Traffic Noise

3.2.1 Road Traffic Noise Impact Assessment Methodology

The Applicant shall carry out road traffic noise impact assessment in respect of each road section (within the meaning of Items A.1, A.7 and A.8 under Part I, Schedule 2 of the EIAO and other road sections) and the noise levels from combined road sections of the Project at the NSRs in accordance with methodology in paragraphs 5.1 of Annex 13 of the TM.

Input Data of Computational Model
The Applicant shall provide the input data set of the road traffic noise computational model adopted in the assessment for various scenarios. The data shall be in electronic text file (ASCII format) containing road segments, barriers and noise sensitive receivers information. CD-ROM(s) containing the above data shall be submitted together with the EIA report.

3.2.2 Identification of Road Traffic Noise Impact

3.2.2.1 Identification of Assessment Area and Noise Sensitive Receivers

(a) The Applicant shall propose the assessment area for agreement of the Director before commencing the assessment. The assessment area for the road traffic noise impact shall generally include areas within 300 metres from the boundary of the Project and the works of the Project.

(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 quantitative road traffic noise impact assessment described below.

(c) The assessment points shall be confirmed with the Director prior to the commencement of the quantitative road traffic noise impact assessment and may be varied subject to the best and latest information available during the course of the EIA study

(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.

(e) For planned noise sensitive land uses without committed site layouts, the Applicant should use the relevant landuse and planning parameters and conditions to work out representative site layouts for road traffic noise impact assessment purpose. However, such parameters and conditions together with any constraints identified shall be confirmed with the relevant responsible parties including Planning Department and Lands Department.

3.2.2.2 Inventory of Noise Sources

(a) The Applicant shall analyse the scope of the proposed road alignment(s) to identify road sections for the purpose of road traffic noise impact assessment. Road sections to be included in road traffic noise impact assessment shall be confirmed with the Director prior to the commencement of the assessment.

(b) Validity of the traffic flow prediction of road sections for the purpose of road traffic noise impact assessment shall be confirmed with Transport Department and documented in the EIA report.

3.2.3 Prediction and Evaluation of Road Traffic Noise Impact

3.2.3.1 Scenarios

(a) The Applicant shall quantitatively assess the road traffic noise impact of the Project, with respect to the criteria set in Annex 5, TM, of unmitigated scenario and mitigated scenario at assessment year. The assessment year shall be made reference to Section 5.1 in Annex 13 of the TM.

(b) The Applicant shall provide the input data sets of traffic noise model prediction model adopted in the EIA study as requested by the Director for the following scenarios:

(i) Unmitigated scenario at assessment year;
(ii) Mitigated scenario at assessment year; and
(iii) Prevailing scenario for indirect mitigated measures eligibility assessment.

3.2.3.2 Prediction of Noise Impact

(a) The Applicant shall present the predicted noise levels in L10 (1 hour) dB(A) at the selected assessment points at various representative floor levels (in m P.D.) on tables and plans of suitable scale.

(b) The assessment shall cover the cumulative road traffic noise impact resulting from the road traffic noise due to the Project and existing road network on existing, committed and planned NSRs within the assessment area.

(c) The potential road traffic noise 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

3.2.4 Mitigation of Road Traffic Noise Impact

3.2.4.1 Direct Mitigation Measures

(a) Where the predicted road traffic noise impact exceeds the criteria set in Annex 5, TM the Applicant shall consider and evaluate direct mitigation measures including but not limited to noise barrier/enclosure, etc. The feasibility, practicability, programming and effectiveness of the recommended mitigation measures shall be assessed. Any direct mitigation measures recommended should be well documented in the report. Specific reasons for not adopting certain direct mitigation measures to reduce the noise to a level meeting the criteria in the TM or to maximize the protection for the NSRs as far as possible should be clearly quantified and documented in the EIA report.

(b) The total number of noise sensitive receivers that will be benefited from and be protected by the provision of direct mitigation measures should be provided. The total number of other noise sensitive receivers that will still be exposed to noise above the criteria with the implementation of all recommended direct mitigation measures shall be quantified.

(c) For planned noise sensitive uses which will still be affected even with practicable direct mitigation measures in place, the Applicant shall propose, evaluate and confirm the practicability of additional direct mitigation measures within the planned noise sensitive uses and shall make recommendations on how these noise sensitive uses will be designed for the information of relevant parties.

(d) The Applicant shall take into account agreed environmental requirements /constraints identified in the EIA study to assess the development potential of concerned sites which shall be made known to the relevant parties.

3.2.4.2 Indirect Mitigation Measures

(a) Upon exhaust of direct mitigation measures, where the predicted road traffic noise impact still exceeds the criteria set in Table 1A of Annex 5, TM, the Applicant shall consider indirect mitigation measures in the form of window insulation and air-conditioning and evaluate in accordance with Section 6.2 in Annex 13 of TM.

(b) The Applicant shall identify and estimate the total number of existing dwellings, classrooms and other noise sensitive elements which may qualify for indirect mitigation measures, the associated costs and any implications for such implementation.

(c) For the purpose of determining eligibility of the affected premises for indirect mitigation measures, reference shall be made to methodology accepted by the recognized national/international organization or methodologies adopted for Hong Kong projects having similar issues on proposing an assessment methodology for determining eligibility of the indirect mitigation measures which shall be confirmed with the Director with reference to Section 4.4.2 of the TM, prior to the commencement of the assessment.

3.2.5 Evaluation of Residual Road Traffic Noise Impact

Upon exhaust of direct and indirect mitigation measures, if the mitigated noise impact still exceeds the relevant criteria in Annex 5 of TM, the Applicant shall identify, predict and evaluate the residual road traffic noise impact in accordance with Section 4.4.3 of the TM and Section 6.2 in Annex 13 of the TM.

Appendix D

Requirements for Water Quality Impact Assessment

The water quality impact assessment shall include the following:

1. The Applicant shall identify and analyse the physical, chemical and biological disruptions of the water system(s) within the assessment area from the construction and operation of the Project.

2. The Applicant shall predict, quantify and assess any water quality impacts arising from the construction and operation of the Project by appropriate mathematical modelling and/or other techniques proposed by the Applicant and approved by the Director. The mathematical modelling requirements are set out in Appendix D-1. Possible impacts due to, but not limited to construction of the submarine outfall, dredging, fill extraction, backfilling, transportation and disposal of dredged materials and other marine works activities, effluent and emergency discharges from on-site sewage treatment works, overflow of sewage 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. The Applicant shall predict and assess any water quality impacts from the construction and operation of the Project including, but not limited to the following:

   (i) the water quality impacts of the site run-off generated during the construction stage such as the effluents generated from dewatering associated with piling activities, grouting and concrete washing and those specified in the ProPECC Practical Note 1/94;

   (ii) the water quality impacts of the effluent discharge including emergency overflow or bypass from the sewage treatment plant, road runoff containing oil/grease and suspended solids during the operational stage; and

   (iii) the water quality impacts on the beaches, seawater intake points, river courses and drainages.

3. 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;

   (ii) characterize water quality of the water systems and sensitive receivers, which might be affected by the Project based on existing best available information or through appropriate site survey and tests;

   (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 landuse plans;

(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;

(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;

(vi) identify any alternation of any water courses, natural streams, ponds, wetlands, change of water holding/flow regimes of water bodies, change of catchment types or areas, erosion or sedimentation due to the Project and any other hydrological changes in the study area;

(vii) identify and quantify existing and likely future water pollution sources, including point discharges and non-point sources to surface water runoff, sewage from workforce and polluted discharge generated from the Project, contaminant release from works on marine sediment and sediment release or re-suspension from works into water bodies;

(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;

(ix) report the adequacy of the existing sewerage and sewage treatment facilities for the handling, treatment and disposal of wastewater arising from the Project as required in section [3.4.4];

(x) identify and quantify the water quality impacts based on the findings and recommendations from the Sewerage and Sewage Treatment Implications Assessment under section [3.4.4]. The water quality concerns shall include, but not limited to, possible sewage overflow or emergency discharge due to capacity constraints of the sewerage system, and emergencies arising from the Project;

(xi) predict and quantify the impacts on the water system(s) and its/their sensitive receivers due to those alternations and changes identified in (vi) above, and the pollution sources identified in (vii) above. The prediction shall take into account and include possible different construction and operation stages of the Project;

(xii) 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;

(xiii) 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;

(xiv) 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. Requirements to be incorporated in the Project contract document shall also be proposed;

(xv) investigate and develop best management practices to reduce storm water and non-point source pollution as appropriate; and

(xvi) 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.

4. The Applicant shall address and assess water quality impacts arising from the following concerns:

Waste Water and Non-point Sources Pollution

(i) Proposal for upgrading or providing any effective infrastructure, water pollution prevention and mitigation measures to be implemented during the construction and operation stages so as to handle any wastewater generated from the project and to reduce the water quality impacts to within standards. Requirements to be incorporated in the Project contract document shall also be proposed;

(ii) Investigation of and proposal for, as appropriate, best management practices to reduce storm water and non-point source pollution; and

(iii) Evaluation and quantification of residual impacts on the water systems(s) and the sensitive receivers with regard to appropriate water quality objectives, criteria, standards or guidelines;

(iv) If the mitigated water quality impact still exceeds the relevant criteria in Annex 6 of the TM, the Applicant shall identify, predict and evaluate the residual water quality impact in accordance with section 4.4.3 of the TM and estimate the significance of the residual impact to the water system(s) and the water sensitive receivers.

Appendix D-1

Hydrodynamic and Water Quality Modelling Requirements

Modelling Software General

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.

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.

3. The hydrodynamic, water quality, sediment transport and thermal modules shall be strictly mass conserved at all levels.

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.

Model Details – Calibration and Validation

1. The models shall be properly calibrated and validated against applicable existing and/or newly collected field data before their use in this study in the Hong Kong waters, the Pearl Estuary and the Dangan (Lema) Channel. The field data set for calibration and validation shall be agreed with EPD.

2. Tidal data shall be calibrated and validated in both frequency and time domain manner.

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.

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	< 15 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

5. The consultants shall be responsible for acquiring/developing and calibration of the models for use in this study themselves. They may make reference to the models developed under the Update on Cumulative Water Quality and Hydrological Effect of Coastal Developments and Upgrading of Assessment Tool (Agreement No. CE 42/97). They may also propose to use other models subject to agreement with EPD.

Model Details – Simulation

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.

2. The sediment transport module for assessing impacts of sediment loss due to marine works shall include the processes of settling, deposition and re-erosion. The values of the modelling parameters shall be agreed with EPD. Contaminants release and DO depletion during dredging and dumping shall be simulated by the model.

3. The thermal model shall be based on the flow field produced by the hydrodynamic model. It shall incorporate the physical processes of thermal / cooled water discharge and abstraction flow, buoyancy effect of the thermal plume, and surface heat exchange. Dispersion of biocides in the discharge shall also be simulated with appropriate decay rates.

4. 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.

5. 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.

Modelling Assessment

1. The assessment shall include the construction and operational phase 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.

2. Hydrodynamic, water quality, sediment transport and thermal modules, where appropriate, shall be run for (with proper model spin up) at least a real sequence of 15 days spring-neap tidal cycle in both the dry season and the wet season.

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.

4. The results shall be assessed for compliance of Water Quality Objectives. Any changes in hydrodynamic regime shall be accessed. Daily erosion / sedimentation rate shall be computed and its ecological impact shall be assessed.

5. The impact on all sensitive receivers shall be assessed.

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.

Appendix E

Requirements for Assessment of Sewerage and Sewage Treatment Implications

1. The Applicant shall estimate the wastewater arising from the Project, assess the impacts of discharging wastewater to the receiving water and environment, propose measures to mitigate the impacts and demonstrate the acceptability of the residual impacts with timely implementation of the mitigation measures. The assessment shall include, inter alia, the followings:

   (i) estimate the peak and average wastewater generation from the Project under different development phases;

   (ii) In the case that public sewerage connection is not available for the Project, the Applicant shall provide proper treatment and disposal facilities for the sewage arising associated with the Project, including the provision of sewage treatment plant and submarine outfall;

   (iii) demonstrate that the proposed treatment and disposal facilities would be adequate under different development phases and complies with the prevailing government standards and requirements;

   (iv) identify and quantify the water quality and ecological impacts due to any emergency discharge from the treatment and disposal facilities and to propose measures to mitigate these impacts;

   (v) estimate the quantity of screenings and sludge arising from the operation of the sewage treatment facilities, propose the disposal arrangement which shall be agreed by the Waste Disposal Authority.

   (vi) set out the design, operation and maintenance requirements and identify the party responsible for the construction and maintenance of the proposed treatment and disposal facilities;

   (vii) demonstrate the acceptability of the residual impacts with the timely commissioning of the mitigation measures;

   (viii) the above shall be agreed by relevant government departments/authorities.

Appendix F

Requirements for Assessment of Waste Management Implications

The assessment of waste management implications shall cover the following:

1. Analysis of Activities and Waste Generation

   (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 and duration of these activities, e.g. any excavated/dredged sediment/mud, construction and demolition (C&D) materials and other wastes which will be generated during construction and operation stages.

   (ii) The Applicant shall adopt appropriate design, general layout, construction methods and programme to minimise the generation of public fill/inert C&D materials and maximise the use of public fill/inert C&D materials for other construction works.

2. Proposal for Waste Management

   (i) Prior to considering the disposal options for various types of wastes, opportunities for reducing waste generation, on-site or off-site re-use and recycling shall be fully 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 maximising waste reduction shall be separately considered.

   (ii) After considering the opportunities for reducing waste generation and maximising re-use, the types and quantities of 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 in detail. The disposal methods/options recommended for each type of wastes shall take into account the result of the assessment in (iv) below.

   (iii) The EIA report shall also state clearly 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

   (iv) The impact caused by handling (including stockpiling, labelling, packaging and storage), collection, transportation and re-use/disposal of wastes shall be addressed in detail 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.

3. Excavation/Dredging and Dumping

(i) The Applicant shall identify and quantify all excavation/dredging, excavated/dredged sediment/mud transportation and disposal activities and requirements. Potential dumping ground to be involved shall also be identified. Appropriate field investigation, sampling and chemical and biological laboratory tests to characterize the sediment/mud concerned shall be conducted. The ranges of parameters to be analyzed; the number, type and methods of sampling; sample preservation; chemical and biological laboratory test methods to be used shall be agreed with the Director (with reference to Section 4.4.2(c) of the TM) prior to the commencement of the tests and document in the EIA report for consideration. The categories of sediment/mud which are to be disposed of in accordance with a permit granted under the Dumping at Sea Ordinance (DASO) shall be identified by both chemical and biological tests and their quantities shall be estimated. If the presence of any serious contamination of sediment/mud which requires special treatment/disposal is confirmed, the Applicant shall identify the most appropriate treatment and/or disposal arrangement and demonstrate its feasibility. The Applicant shall provide supporting document, such as agreement by the relevant facilities management authorities, to demonstrate the viability of any treatment/disposal plan.

(ii) The Applicant shall identify and evaluate the best practical excavation/dredging methods to minimize dredging/excavation and dumping requirements based on the criterion that existing sediment/mud shall be left in place and not to be disturbed as far as possible.

Appendix G

Requirements for Land Contamination Assessment

1. If any contaminated land uses as stated in sections 3.1 and 3.2 of Annex 19 of the TM is identified, the Applicant shall carry out the land contamination assessment as detailed below and propose measures to avoid disposal:

   (i) The Applicant shall follow the guidelines for evaluating and assessing potential land contamination issues as stated in sections 3.1 and 3.2 of Annex 19 of the TM.

   (ii) The Applicant shall identify all land lots/sites within the Project Site boundary (Figure 1.1 of Project Profile No. PP-513/2014 and Appendix A in this Study Brief refer) which, due to their past or present land uses, are potentially contaminated sites. A detailed account of the present activities and all past land uses history in relation to possible land contamination shall be provided.

   (iii) The list of potential contaminants which are anticipated to be found in these potential contaminated sites be provided and the possible remediation options shall be discussed.

Appendix H

Requirements for Landfill Gas Hazard Assessment

1. The landfill gas hazard assessment shall include a qualitative risk assessment and landfill gas precautionary/protection design. Specifically, the assessment shall include the following tasks:

   (i) Review of background information and studies related to the restored Siu Lang Shui Landfill.

   (ii) Identification of the nature and extent of the sources, including the likely concentrations/amounts of hazardous emissions which might have the potential for causing impacts on the Project.

   (iii) Identification of possible pathways through the ground, underground cavities, utilities or groundwater and the nature of these pathways through which hazardous emissions must traverse if they were to reach the facilities within the Project site.

   (iv) Identification of the potential targets associated with the Project which are sensitive to the impacts of the hazardous emissions.

   (v) Qualitative assessment on the degrees of risk which the hazardous emissions may pose to the target for each of the source-pathway-target combinations.

   (vi) Design of suitable level of precautionary measures and types of protection measures and contingency plan for the construction and operation of the developments proposed under the Project.

   (vii) Identification of monitoring requirements for assessing the adequacy and performance of the implemented protection measures.

Appendix I

Requirements for Hazard to Life Assessment

1. Construction Phase

Based on the estimated number of construction workers for the Project, the Applicant shall check against the quantitative risk assessment findings carried out in the vicinity of the Project Area (including that for the Permanent Aviation Fuel Facility of Hong Kong) in order to seek the Director's agreement whether a hazard assessment has to be carried out . If a hazard assessment is needed, the hazard assessment shall include:

(i) Identification of hazardous scenarios associated with the nearby Dangerous Goods (DGs) processing, transport and storage facilities with a view to determining a set of relevant scenarios to be included in a Quantitative Risk Assessment (QRA);
(ii) Execution of a QRA of the set of hazardous scenarios determined in item (i) above, expressing population risks in both individual and societal terms;
(iii) Comparison of individual and societal risks with the criteria for evaluating hazard to life stipulated in Annex 4 of the TM; and
(iv) Identification and assessment of practicable and cost-effective risk mitigation measures.

2. Operation Phase

The Applicant shall submit a DGs inventory of the Project during operation phase in order to seek the Director's agreement whether a quantitative hazard assessment for operational phase of the Project is to be carried out. In the event of a hazard assessment for operational phase is required for the Project, the hazard assessment shall include:

(i) Identification of hazardous scenarios associated with the processing, transport and storage of DGs with a view to determining a set of relevant scenarios to be included in a QRA;
(ii) Execution of a QRA of the set of hazardous scenarios determined in item (i) above, expressing population risks in both individual and societal terms;
(iii) Comparison of individual and societal risks with the criteria for evaluating hazard to life stipulated in Annex 4 of the TM; and
(iv) Identification and assessment of practicable and cost-effective risk mitigation measures.

3. Cumulative Risk Assessment

In the event of QRAs are required, the Applicant shall carry out a cumulative risk assessment having regard to nearby DG processing and storage facilities (including the Permanent Aviation Fuel Facility of Hong Kong International Airport).

4. The methodology to be used in the hazard assessment shall be consistent with previous studies having similar issues (e.g. Permanent Aviation Fuel Facility of Hong Kong International Airport, Development of an EcoPark in Tuen Mun Area 38, Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate, Harvest Fatty Acid Methyl Ester and Edible Oil Plant Development at Yuen Long Industrial Estate).

Appendix J

Requirements for Ecological Impact Assessment

The ecological impact assessment shall include the following:

1. The Applicant shall examine the flora, fauna and other components of the ecological habitats within the assessment area. The aim shall be to protect, maintain or rehabilitate the natural environment. In particular, the Project shall avoid or minimise impacts on recognised sites of conservation importance such as the Sites of Special Scientific Interest (SSSIs) and other ecological sensitive areas. The assessment shall identify and quantify as far as possible the potential ecological impacts associated with the construction and operation of the Project.

2. The assessment shall include the following major tasks:

   (i) review the findings of relevant studies/surveys and collate the available information regarding the ecological characters of the assessment area;

   (ii) evaluate the information collected, identify 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;

   (iii) carry out any necessary ecological field surveys with a duration of at least six months covering the overwintering period of butterflies at the Siu Lang Shui SSSI (and benthic survey, intertidal survey, and underwater dive survey for coral communities if marine works or discharge of sewage effluent from new sewage treatment facility / submarine outfall is required), and investigation to verify the information collected, fill the information gaps as identified in (ii) above, if any, and to fulfil the objectives of the EIA study;

   (iv) establish an ecological profile of the assessment area based on data of relevant previous studies/surveys and results of ecological field surveys, and describe the characteristics of each habitat found. Major information to be provided shall include:

      (a) description of the physical environment;

      (b) habitats maps of suitable scale (1:1000 to 1:5000) showing the types and locations of habitats and species of conservation interest 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 patterns, ecological value, inter-dependence of the habitats and species, and presence of any features of ecological importance;

      (d) representative colour photographs of each habitat type and any important ecological features identified;

      (e) species found that are rare, endangered and/or listed under local legislation,

international conventions for conservation of wildlife/habitats or Red Data Books.

(v) investigate and describe the existing wildlife uses of various habitats with special attention to those wildlife groups and habitats with conservation interest, including but not limited to the following:
- plantations;
- shrublands;
- pitcher plants;
- natural stream courses;
- vertebrates (e.g. avifauna, mammals and herpatofauna);
- macroinvertebrates (e.g. butterflies and odonates); and
- any other habitats and wildlife groups identified as having special conservation interest by the EIA study.

(vi) describe recognised sites of conservation importance within and in the vicinity of the assessment area, including the Siu Lang Shui SSSI, and assess whether these sites will be affected by the Project;

(vii) identify and quantify, with the use of suitable methodology, of any direct, indirect, on-site, off-site, primary, secondary and cumulative ecological impacts on the wildlife groups and habitats mentioned in (v) above, such as direct loss of habitats and potential diversion or modification of stream courses, disturbance to wildlife, destruction of habitats, reduction of species abundance/diversity, loss of feeding and breeding grounds, reduction of ecological carrying capacity and habitat fragmentation, and the following:

(a) disturbance impact on the overwintering butterflies at the Siu Lang Shui SSSI during the construction and operational phases of the Project;

(b) potential indirect impact on the movement and feeding activities of the overwintering butterflies due to changes in the surrounding land use from the Project.

(c) impacts to the benthic communities, intertidal and subtidal habitats and the associated fauna especially Chinese White Dolphins due to habitat loss, disturbance and potential change in water quality (if marine works or discharge of sewage effluent from new sewage treatment facility / submarine outfall is required).

(viii) evaluate ecological impact based on the best and latest information available during the course of the EIA study covering construction and operational phases of the Project;

(ix) recommend practicable mitigation measures to avoid, minimise and/or compensate for the adverse ecological impacts identified;

(x) evaluate the feasibility and effectiveness of the recommended mitigation measures and define the scope, type, location, implementation arrangement, resource requirement, subsequent management and maintenance of such measures;

(xi) determine and quantify as far as possible of the residual ecological impacts after

implementation of the proposed mitigation measures;

(xii) evaluate the significance and acceptability of the residual ecological impacts by making reference to the criteria in Annex 8 of the TM; and

(xiii) review the need for and recommend any ecological monitoring programme required.

Appendix K

Requirements for Landscape and Visual Impact Assessment

1. The Applicant shall assess the landscape impact of the Project. The Applicant shall review relevant outline development plan(s), outline zoning plan(s), layout plan(s) and/or studies which may identify areas of high landscape value. 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) shall be highlighted and appropriate follow-up action shall be recommended.

2. The Applicant shall describe, appraise, analyse and evaluate the existing and planned landscape resources and characters of the assessment area. A system shall be derived for judging the landscape impact significance as required under the TM and the EIAO Guidance Note No. 8/2010 "Preparation of Landscape and Visual Impact Assessment under the EIAO". Annotated oblique aerial photographs and plans of suitable scale showing the baseline landscape resources and landscape character areas 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 assessment shall be particularly focused on the sensitivity of the landscape resources and its ability to accommodate the magnitude of change. The Applicant shall identify the degree of compatibility of the Project with the existing and planned landscape setting. The landscape impact assessment shall quantify potential landscape impact as far as possible, so as to illustrate the significance of such impact from the Project. Clear mapping of the landscape impact is required. The significance of landscape impact should be identified based on the interaction of the impact on sensitivity and magnitude of changes on the Landscape Resources and Landscape Character Area within the assessment area. Cumulative landscape and visual impacts of the Project with other existing, committed and planned developments in the assessment area shall be assessed.

3. The Applicant shall assess the visual impact of the Project. Clear illustrations including mapping of visual impact is required. The assessment shall include the following:

   (i) identification and plotting of visual envelope of the Project;

   (ii) identification of the key groups of existing and planned sensitive receivers within the visual envelope and their views at sea level, ground level and elevated vantage points;

   (iii) description of the visual compatibility of the Project with the surrounding and the existing and planned setting, and its obstruction and interference with the key views within the visual envelope; and

   (iv) description of the severity of visual impact in terms of nature, distance and number of sensitive receivers. The visual impact of the Project with and without mitigation measures shall be included and illustrated so as to demonstrate the effectiveness of the proposed mitigation measures across time.

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, site layout, development options, design and construction methods that would 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 minimise adverse effects identified above, including provision of a landscape design.

5. The mitigation measures shall include provision of screen planting, provisioning/reprovisioning of amenity areas and open spaces, design of structures, provision of finishes to structures, colour scheme and texture of material used and any measures to mitigate the impact on existing and planned land uses and sensitive receivers. Parties shall be identified for the on going management and maintenance of the proposed mitigation works to ensure their effectiveness throughout the operational phase of the Project. A practical programme for the implementation of the recommended measures shall be provided.

6. Annotated illustration such as coloured perspective drawings, plans and section/elevation diagrams, oblique aerial photographs, photographs taken at vantage points, and computer-generated photomontage shall be adopted to illustrate the landscape and visual impacts of the Project. 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.

Appendix L

Requirements for Health Impact Assessment of Air Pollutants (including toxic substances)

1. The Applicant shall conduct health impact assessment if a significant increase in levels of air pollutants to human receivers due to the project is predicted. The health impact assessment regarding air pollutants (including toxic substances) from the operation of Loading and Storage of Petrochemical Feedstock in the Project shall include the following key steps:

   (i) identification of key components of air pollutants (including toxic substances) from the operation of the Project for health impact assessment;

   (ii) an assessment of the likelihood and consequences of exposure to the identified emissions;

   (iii) an identification of means by which the health impact could be further reduced; and

   (iv) recommendation of reasonably practicable measures, if any, to reduce the health impact during the operation of the Project.

Appendix M

Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Measures & Main Concerns to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What standards or requirements for the measure to achieve?

Appendix N

Requirements for EIA Report Documents

1. The Applicant shall supply the Director with the following number of copies of the EIA report and the executive summary:

   (i) 30 copies of the EIA report and 30 copies of the executive summary (each bilingual in both English and Chinese) 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 (i) above as required under section 7(1) of the EIAO, to be supplied upon advice by the Director for public inspection.

   (iii) 20 copies of the EIA report and 50 copies of the executive summary (each bilingual in both English and Chinese) 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.

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) (version 4.0 or later) and in Portable Document Format (PDF version 1.3 or later). For the HTML version, 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. Graphics in the report shall be in interlaced GIF format.

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.

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.

5. To promote environmentally friendly and efficient dissemination of information, both hardcopies and electronic copies of future EM&A reports recommended by the EIA study shall be required.