

**Capco** 青山發電有限公司  
Castle Peak Power Co. Ltd.

**港燈**  
HK Electric

**HKLTL**

## Hong Kong Offshore LNG Terminal Project

Monthly Environmental Monitoring and Audit (EM&A) Report for November 2020

11 December 2020

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## Signature Page

11 December 2020

# Hong Kong Offshore LNG Terminal Project

## Monthly Environmental Monitoring and Audit (EM&A) Report for November 2020



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Dr Jasmine Ng  
Partner

ERM-Hong Kong, Limited  
2507, 25/F One Harbourfront  
18 Tak Fung Street  
Hunghom  
Kowloon  
Hong Kong

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**Hong Kong Offshore LNG Terminal**  
**Environmental Certification Sheet**  
**FEP-01/558/2018/A, FEP-02/558/2018 and FEP-03/558/2018**

**Reference Document/Plan**

Document/ <del>Plan</del> to be Certified/ <del>Verified</del> :	Monthly Environmental Monitoring and Audit (EM&A) Report for November 2020
Date of Report:	11 December 2020
Date prepared by ET:	11 December 2020
Date received by IEC:	11 December 2020

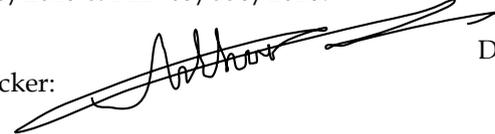
**Reference EP Requirement**

EP Condition:	Condition No. 5.4 of FEP-01/558/2018/A, FEP-02/558/2018 & FEP-03/558/2018
Content:	<i>Monthly EM&amp;A Report</i>
The Permit Holder shall submit 3 hard copies and 1 electronic copy of Monthly EM&A Reports to the Director, within 2 weeks after the end of the reporting month.	

**ET Certification**

I hereby certify that the above referenced document/ <del>plan</del> complies with the above referenced condition of FEP-01/558/2018/A, FEP-02/558/2018 & FEP-03/558/2018.	
Mr Raymond Chow, Environmental Team Leader:	
Date:	11 December 2020

**IEC Verification**

I hereby verify that the above referenced document/ <del>plan</del> complies with the above referenced condition of FEP-01/558/2018/A, FEP-02/558/2018 & FEP-03/558/2018.	
Mr Arthur Lo, Independent Environmental Checker:	
Date:	11 December 2020

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## EXECUTIVE SUMMARY

To support the increased use of natural gas in Hong Kong from 2020 onwards, Castle Peak Power Company Limited (CAPCO) and The Hongkong Electric Co., Ltd. (HK Electric) have identified that the development of an offshore liquefied natural gas (LNG) receiving terminal in Hong Kong using Floating Storage and Regasification Unit (FSRU) technology ('the Project') presents a viable additional gas supply option that will provide energy security through access to competitive gas supplies from world markets. The Project will involve the construction and operation of an offshore LNG import facility to be located in the southern waters of Hong Kong, a double berth jetty, and subsea pipelines that connect to the gas receiving stations (GRS) at the Black Point Power Station (BPPS) and the Lamma Power Station (LPS). To demarcate the works between different parties, the following Further Environmental Permits (FEPs) were issued for the Project:

- the double berth jetty at LNG Terminal under the Hong Kong LNG Terminal Limited (HKLTL), joint venture between CAPCO and HK Electric (FEP-01/558/2018/A);
- the subsea gas pipeline for the BPPS and the associated GRS in the BPPS under CAPCO (FEP-03/558/2018); and
- the subsea gas pipeline for the LPS and the associated GRS in the LPS under HK Electric (FEP-02/558/2018).

The construction of the subsea gas pipeline for the BPPS and the associated GRS in the BPPS under FEP-03/558/2018 and the construction of the double berth jetty at LNG Terminal under FEP-01/558/2018/A commenced on 23 September 2020 and 27 November 2020, respectively while the construction works under FEP-02/558/2018 had yet to commence in the reporting period. The commencement date of construction works for FEP-02/558/2018 is expected to be 13 December 2020.

This is the Monthly EM&A Report presenting the EM&A works carried out during the period from 1 to 30 November 2020 for the Project in accordance with the Updated EM&A Manual. A summary of monitoring and audit activities conducted in the reporting period is listed below:

Activities	Number of Sessions
<b>For FEP-03/558/2018</b>	
Environmental Site Inspection	4

Environmental auditing works, including regular site inspections of construction works conducted by the ET and audit of implementation of Waste Management Plan were conducted in the reporting period. There were no observations and reminders recorded during the regular site inspections.

### Breaches of Action and Limit Levels

Since there were no construction activities conducted in the reporting period requiring impact monitoring of marine water quality and marine mammals in accordance with the Updated EM&A Manual, there were no breaches of action and limit levels.

### Environmental Complaints, Notification of Summons and Successful Prosecution

There were no environmental complaints, notification of summons and successful prosecutions recorded in the reporting period.

### Reporting Changes

There were no reporting changes in the reporting period.

## Forecast of Impact Predictions

As informed by the Contractor, construction activities to be undertaken in the next reporting period of December 2020 include the following:

FEP	Land-based Works	Marine-based Works
FEP-01/558/2018/A	<ul style="list-style-type: none"><li>Nil</li></ul>	<ul style="list-style-type: none"><li>Jacket installation</li></ul>
FEP-02/558/2018	<ul style="list-style-type: none"><li>Nil</li></ul>	<ul style="list-style-type: none"><li>Nil <sup>(1)</sup></li></ul>
FEP-03/558/2018	<ul style="list-style-type: none"><li>Piping works for Fire Services, oily water, stormwater drainage diversion and backfilling;</li><li>Excavation for Plate Load Test - Pipe Rack;</li><li>Plate Load Test - Pipe Rack; and</li><li>Cable pulling</li></ul>	<ul style="list-style-type: none"><li>Nil</li></ul>

Remark: (1) It is anticipated that the preparation works for marine-based works for FEP-02/558/2018 (e.g. approval of marine dumping permit) would be undertaken in December 2020. Therefore, no marine-based works for FEP-02/558/2018 would be undertaken in December 2020. Marine-based works for FEP-02/558/2018 are expected to commence in January 2021.

Potential environmental impacts arising from the above upcoming construction activities in the next reporting period of December 2020 are mainly associated with dust emission from construction activities and stockpiles, waste management, site surface runoff, wastewater discharge and disturbance to marine mammals due to piling works of jacket installation.

## 1. INTRODUCTION

### 1.1 Background

To support the increased use of natural gas in Hong Kong from 2020 onwards, Castle Peak Power Company Limited (CAPCO) and The Hongkong Electric Co., Ltd. (HK Electric) have identified that the development of an offshore liquefied natural gas (LNG) receiving terminal in Hong Kong using Floating Storage and Regasification Unit (FSRU) technology ('the Project') presents a viable additional gas supply option that will provide energy security through access to competitive gas supplies from world markets. The Project will involve the construction and operation of an offshore LNG import facility to be located in the southern waters of Hong Kong, a double berth jetty, and subsea pipelines that connect to the gas receiving stations (GRS) at the Black Point Power Station (BPPS) and the Lamma Power Station (LPS).

The Environmental Impact Assessment (EIA) Report for the Project was submitted to the Environmental Protection Department (EPD) of the HKSAR Government in May 2018. The EIA Report (EIAO Register No. AEIAR-218/2018) was approved by EPD and the associated Environmental Permit (EP) (EP-558/2018) was issued in October 2018.

An application for Further Environmental Permits (FEP) were made on 24 December 2019 to demarcate the works between the different parties. The following FEPs were issued on 17 January 2020 and the EP under EP-558/2018 was surrendered on 5 March 2020.

- the double berth jetty at LNG Terminal under the Hong Kong LNG Terminal Limited (HKLTL), joint venture between CAPCO and HK Electric (FEP-01/558/2018/A) <sup>(1)</sup>;
- the subsea gas pipeline for the BPPS and the associated GRS in the BPPS under CAPCO (FEP-03/558/2018); and
- the subsea gas pipeline for the LPS and the associated GRS in the LPS under HK Electric (FEP-02/558/2018).

The location of these components is shown in **Figures 1.1, 1.2 and 1.3**. The construction of the subsea gas pipeline for the BPPS and the associated GRS in the BPPS under FEP-03/558/2018 and the construction of the double berth jetty at LNG Terminal under FEP-01/558/2018/A commenced on 23 September 2020 and 27 November 2020, respectively while the construction works under FEP-02/558/2018 had yet to commence in the reporting period. The commencement date of construction works for FEP-02/558/2018 is expected to be 13 December 2020.

### 1.2 Scope of the EM&A Report

This is the Monthly EM&A Report for the Project which summarises the key findings of the EM&A programme during the reporting period from 1 to 30 November 2020 for the construction works for the Project in accordance with the Updated EM&A Manual and the requirements of the Further Environmental Permits (FEP-01/558/2018/A, FEP-02/558/2018 & FEP-03/558/2018).

### 1.3 Organisation Structure

The organisation structure of the Project is shown in **Annex A**. The key personnel and contact details are summarised in **Table 1.1** below.

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(1) Application for variation of an environmental permit for FEP-01/558/2018 was undertaken and the latest FEP (FEP-01/558/2018/A) was issued on 6 November 2020.

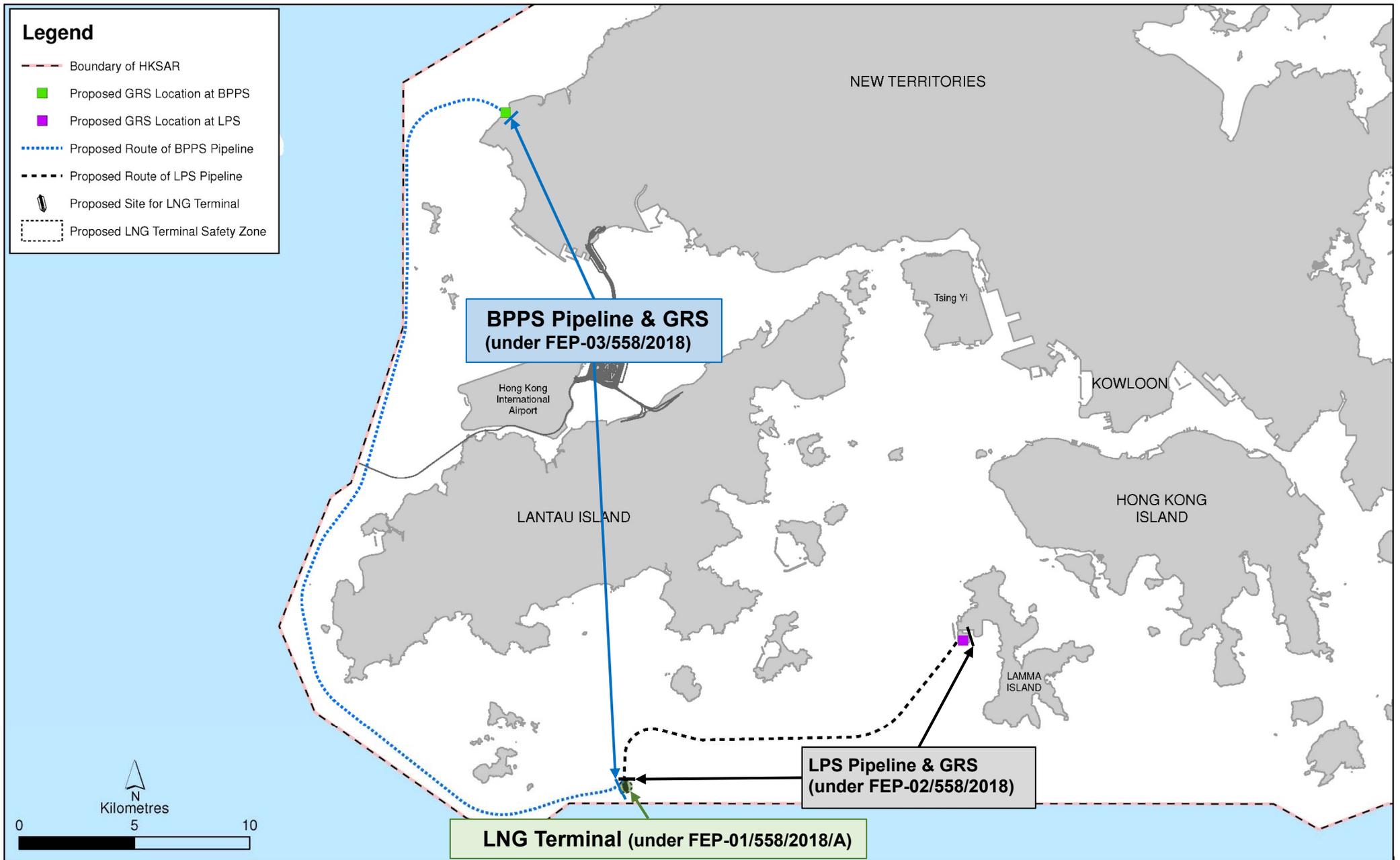
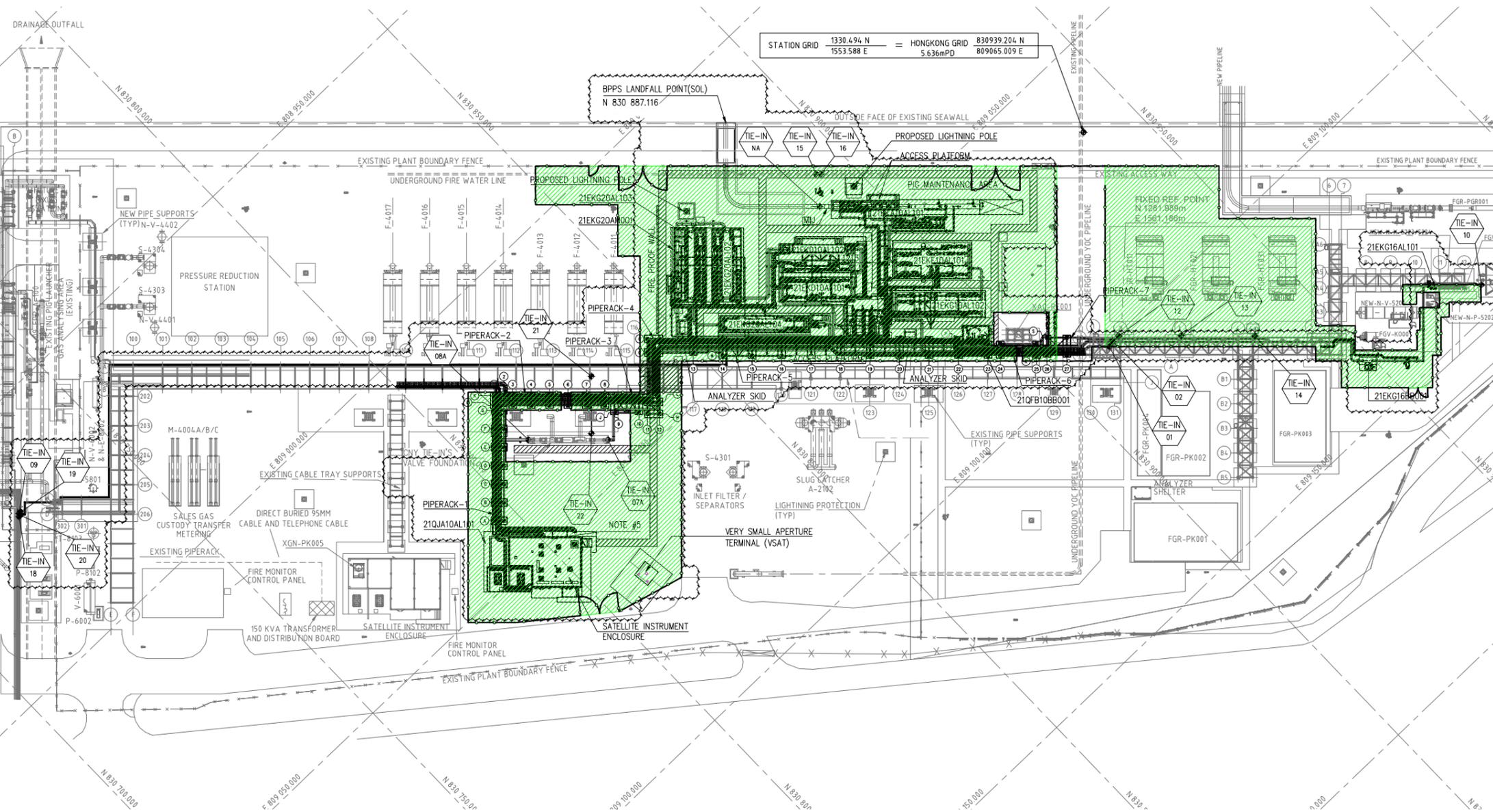
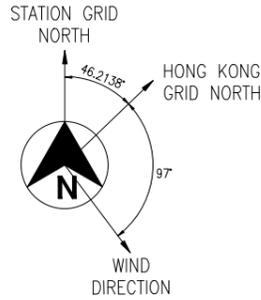


Figure 1.1

Indicative Location of Key Project Components

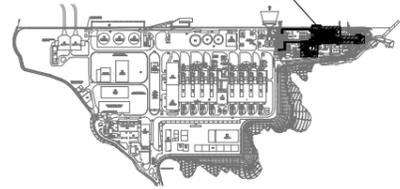


STATION GRID 1330.494 N = HONGKONG GRID 830939.204 N  
 1553.588 E = 5.636mPD 809065.009 E

BPPS LANDFALL POINT(SOL)  
 N 830 887.116

KEY PLAN

THIS DRAWING



GENERAL NOTES

1. ALL DIMENSIONS ARE IN mm, ELEVATIONS & COORDINATES ARE IN m.
2. NOMINAL GRADE (PIPING DATUM) 0.000m = NOMINAL GRADE (HONG KONG DATUM) 5.700m.
3. RELATIONSHIP OF HONG KONG GRID TO STATION GRID.  
 H.K. GRID 808 950.493 E = STATION GRID 0.000 E  
 828 896.966 N = STATION GRID 0.000 N
4. PIG RECEIVER DESIGNED FOR INTELLIGENT PIGGING.
5. EXISTING HOSE REEL CABINET AT NEW SIE BUILDING SHALL BE RELOCATED.

LEGEND

- ESCAPE /ACCESS CLEAR WIDTH OF NOT LESS THAN 1.525m AND CLEAR HEIGHT OF 2.3m.
- NEW BPPS GRS SCOPE OF WORK
- SITE BOUNDARY AT THE BPPS GRS

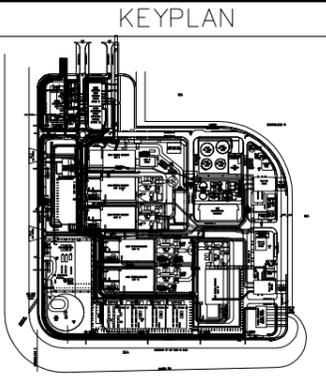
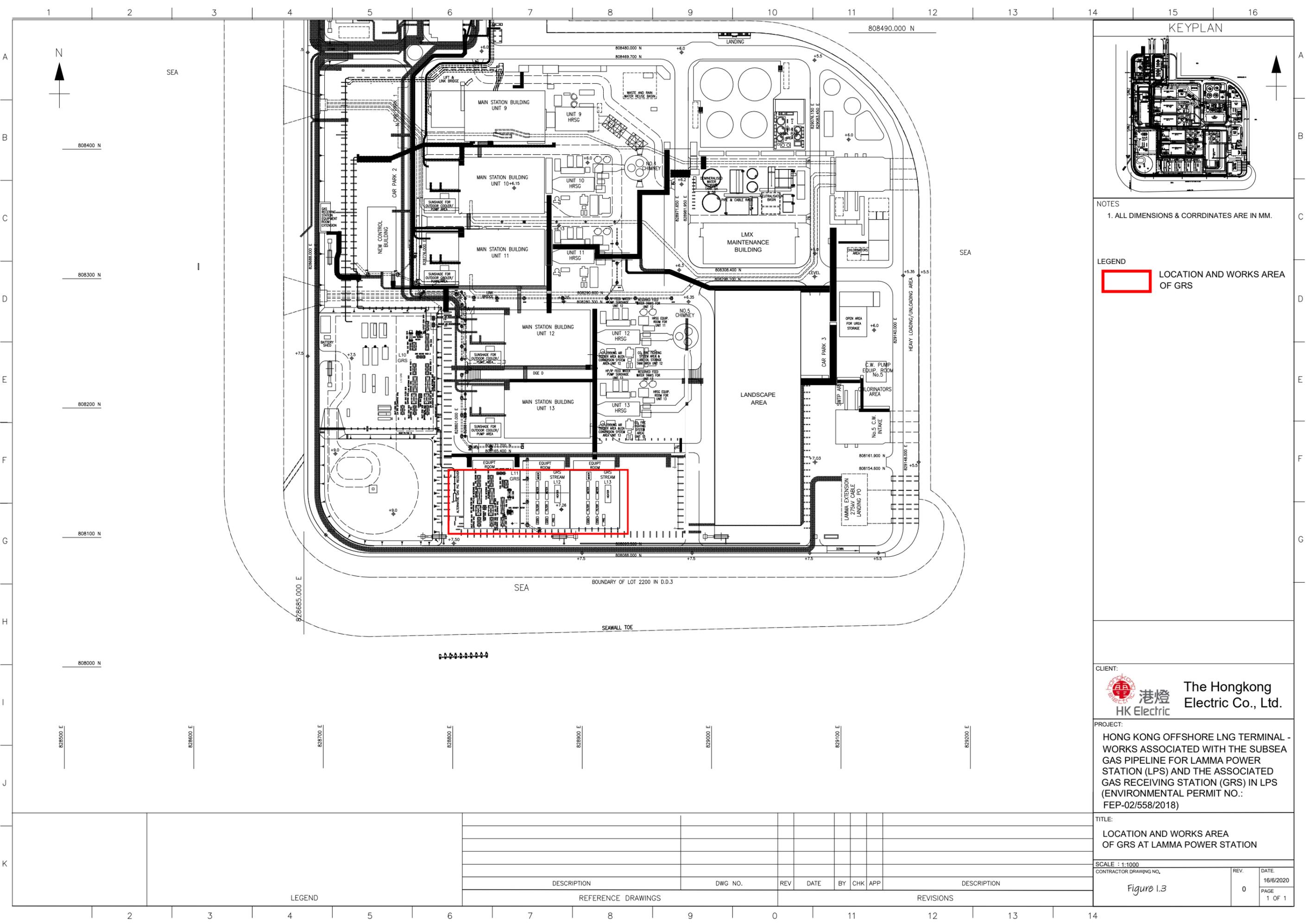


HKOLNG-CO0EC-21EKG-MPD010-9101 HKOLNG GRS - EQUIPMENT LIST  
 DWG. NO. DRAWING TITLE

REFERENCE DOCUMENTS

REVISION	No.	DATE	DESCRIPTION	BY	CHK.	APP'D	CLP
C	03JUN2020	ISSUED FOR REVIEW	AKR	ASD	MF		
B	17APR2020	INTERNALLY APPROVED	AKR	ASD	MF		
A	21FEB2020	DISCIPLINE INTERNAL CHECK	AKR	ASD	MF		

CLIENT	Capco 香港電氣有限公司 Cable Post Power Co. Ltd.	Offshore Oil Engineering Co., Ltd.	JOB No. 20ZB-DD02
SIGNATURE	DATE	PROJECT: HONG KONG OFFSHORE LNG TERMINAL PROJECT PACKAGE B	CERTIF. No. A112002816
DRAWN	SGB	20AUG2020	SCALE (A3) 1 : 1000
DESIGNED	AKR	20AUG2020	Figure 1.2
CHECKED	ASD	20AUG2020	
REVIEWED	TWC	20AUG2020	
EXAMINED	TWC	20AUG2020	
APPROVED	MF	20AUG2020	DWG No. HKOLNG-CO0EC-21EKG-MLD020-9112 REV. C



NOTES  
1. ALL DIMENSIONS & CORRINATES ARE IN MM.

LEGEND  
 LOCATION AND WORKS AREA OF GRS

CLIENT:  
 The Hongkong Electric Co., Ltd.

PROJECT:  
 HONG KONG OFFSHORE LNG TERMINAL - WORKS ASSOCIATED WITH THE SUBSEA GAS PIPELINE FOR LAMMA POWER STATION (LPS) AND THE ASSOCIATED GAS RECEIVING STATION (GRS) IN LPS (ENVIRONMENTAL PERMIT NO.: FEP-02/558/2018)

TITLE:  
 LOCATION AND WORKS AREA OF GRS AT LAMMA POWER STATION

SCALE : 1:1000  
 CONTRACTOR DRAWING NO. REV. DATE  
0 16/6/2020  
 Figure 1.3 PAGE 1 OF 1

0-0-0-0-0-0-0-0

DESCRIPTION	DWG NO.	REV	DATE	BY	CHK	APP	DESCRIPTION
REFERENCE DRAWINGS							
REVISIONS							

LEGEND

**Table 1.1 Contact Information of Key Personnel**

Party	Position	Name	Telephone
CAPCO / HKLTL (For FEP-01/558/2018/A and FEP-03/558/2018)	Senior Environmental Manager	Dr Helen Chiu	2596 4116
HK Electric / HKLTL (For FEP-01/558/2018/A and FEP-02/558/2018)	Head of Mechanical Engineering, Projects Division	Norman Chan	3143 3819
Environmental Team (ET) (ERM-Hong Kong, Limited)	ET Leader	Raymond Chow	2271 3114
Independent Environmental Checker (IEC) (Mott MacDonald Hong Kong Limited)	IEC	Arthur Lo	2828 5757
Contractor (CNOOC Offshore Oil Engineering Co. Ltd.)	Environmental Manager	H Y Tang	6111 5789
	Environmental Officer	Kelvin Cheung	9060 1020

## 1.4 Summary of Construction Activities

The programme of the construction is shown in **Annex B**.

As informed by the Contractor, details of the major construction activities undertaken in the reporting period are listed in **Table 1.2** below:

**Table 1.2 Major Construction Activities Undertaken in the Reporting Period**

FEP	Land-based Works	Marine-based Works
FEP-01/558/2018/A	Nil	Nil <sup>(1)</sup>
FEP-02/558/2018	Nil	Nil
FEP-03/558/2018	<ul style="list-style-type: none"> <li>▪ Preparation works at the new GRS (including set-up of site offices, erection of hoarding and mobilisation of wastewater treatment facilities)</li> <li>▪ Excavation for Fire Services, oily water and stormwater drainage diversion; and</li> <li>▪ Excavation for Plate Load Test - Pipe Rack</li> </ul>	Nil

Remark: (1) The piling installation vessel for construction of the jetty was under quarantine from 19 November 2020 to 2 December 2020 in Hong Kong waters. Therefore, no marine-based works for FEP-01/558/2018/A was undertaken in November 2020. Marine-based works for FEP-01/558/2018/A are expected to commence in December 2020.

The environmental mitigation implementation schedule (EMIS) is presented in **Annex C**.

## 1.5 Summary of EM&A Programme Requirements

The status of EM&A Programme for all environmental aspects required under the Updated EM&A Manual are presented in **Table 1.3**. As no marine-based construction activities (i.e. dredging/jetting

operations and piling works) were undertaken in the reporting period, relevant environmental monitoring (i.e. marine water quality monitoring and marine mammal monitoring, including vessel-based line transect surveys and passive acoustic monitoring) were not required to be monitored in accordance with the Updated EM&A Manual. Thus, no Action/Limit Levels were triggered in the reporting period and the actions as specified in the respective Event and Action Plans were not required to be taken.

**Table 1.3 Summary of Status for the EM&A Programme under the Updated EM&A Manual**

Aspects	Relevant FEP(s)	Status
<b>Water Quality</b>		
Baseline Monitoring	FEP-01/558/2018/A FEP-02/558/2018 FEP-03/558/2018	■ Completed
Efficiency of Silt Curtain System	FEP-02/558/2018 FEP-03/558/2018	■ To be implemented upon early stage of construction works for dredging/jetting operations for FEP-02/558/2018 and FEP-03/558/2018
Construction Phase Monitoring	FEP-02/558/2018 FEP-03/558/2018	■ To be implemented upon commencement of construction works for dredging/jetting operations for FEP-02/558/2018 and FEP-03/558/2018
Post-Construction Monitoring	FEP-02/558/2018 FEP-03/558/2018	■ To be implemented upon completion of construction works for the Project
Monitoring for Hydrotesting for the Subsea Gas Pipelines	FEP-02/558/2018 FEP-03/558/2018	■ To be implemented during hydrotesting for the subsea gas pipelines
First-year of LNG Terminal Operation	FEP-01/558/2018/A	■ To be implemented during LNG Terminal operation
Maintenance Dredging	FEP-01/558/2018/A	■ To be implemented during maintenance dredging
<b>Waste Management</b>		
Audit of Waste Management Practice	FEP-01/558/2018/A FEP-02/558/2018 FEP-03/558/2018	<ul style="list-style-type: none"> <li>■ On-going for FEP-03/558/2018</li> <li>■ To be implemented upon commencement of construction works for FEP-01/558/2018/A <sup>(1)</sup> and FEP-02/558/2018</li> </ul>
<b>Ecology</b>		
Baseline Monitoring (Vessel-based Line Transect Survey and Passive Acoustic Monitoring)	FEP-01/558/2018/A	■ Completed
Construction Phase Monitoring (Vessel-based Line Transect Survey and Passive Acoustic Monitoring)	FEP-01/558/2018/A	■ To be implemented upon commencement of construction of the LNG Terminal <sup>(1)</sup>
Post-Construction Monitoring (Vessel-based Line Transect Survey and Passive Acoustic Monitoring)	FEP-01/558/2018/A	■ To be implemented upon completion of construction works for the Project
Marine Mammal Exclusion Zone Monitoring	FEP-01/558/2018/A FEP-02/558/2018 FEP-03/558/2018	■ To be implemented when percussive piling works for construction of Jetty <sup>(1)</sup> (under FEP-01/558/2018/A) or marine dredging / jetting

Aspects	Relevant FEP(s)	Status
		operations (under FEP-02/558/2018 / FEP-03/558/2018) are undertaken
<b>Environmental Site Inspection</b>		
Regular Site Inspection	FEP-01/558/2018/A FEP-02/558/2018 FEP-03/558/2018	<ul style="list-style-type: none"> <li>■ On-going for FEP-03/558/2018</li> <li>■ To be implemented upon commencement of construction works for FEP-01/558/2018/A <sup>(1)</sup> and FEP-02/558/2018</li> </ul>
Records of Operating Speeds and Marine Travel Routes for Working Vessels	FEP-01/558/2018/A FEP-02/558/2018 FEP-03/558/2018	<ul style="list-style-type: none"> <li>■ To be implemented upon commencement of marine-based construction works for FEP-01/558/2018 <sup>(1)</sup>, FEP-02/558/2018 and FEP-03/558/2018</li> </ul>
Environmental Log Book	FEP-01/558/2018/A FEP-02/558/2018 FEP-03/558/2018	<ul style="list-style-type: none"> <li>■ On-going</li> </ul>

Remark: (1) The piling installation vessel for construction of the jetty was under quarantine from 19 November 2020 to 2 December 2020 in Hong Kong waters. Therefore, no marine-based works for FEP-01/558/2018/A was undertaken in November 2020. Marine-based works for FEP-01/558/2018/A are expected to commence in December 2020.

## 1.6 Status of Other Statutory Environmental Requirements

The environmental licenses and permits, including further environmental permits, registration as chemical waste producer, construction noise permits, which were valid in the reporting period are presented in **Annex D**. No non-compliance with environmental statutory requirements was identified.

## 2. EM&A RESULTS

The EM&A programme for the Project required environmental monitoring for marine water quality and marine mammals as well as environmental site inspections for air quality, construction noise, water quality, waste management, marine ecology, landscape and visual, and hazard to life impacts. As presented in *Section 1.5*, environmental site inspections and audit on waste management practice were conducted for FEP-03/558/2018 and the findings are presented below.

### 2.1 Environmental Site Inspection

Regular environmental site inspections were carried out with the Contractor and Project Proponent to confirm the implementation of appropriate environmental protection and pollution control mitigation measures for air quality, construction noise, water quality, waste management, marine ecology, landscape and visual, and hazard to life impacts under the Project. In the reporting period, four (4) environmental site inspections were carried out at proposed GRS in BPPS for FEP-03/558/2018 on 5, 11, 18 and 25 November 2020. The Independent Environmental Checker (IEC) attended the environmental site inspection as the IEC audit on 11 November 2020 during the reporting period. There were no observations and reminders recorded during the regular site inspections. The environmental mitigation implementation schedule (EMIS) is presented in **Annex C**.

### 2.2 Waste Management Status

Waste management audits were performed with reference to the Waste Management Checklists for the corresponding Waste Management Plans detailed in **Annex E** during the regular environmental site inspections carried out in the reporting period. No non-compliance for Contractor's waste management practices was identified during the audits.

The quantities of different types of waste generated and dredged marine sediment for the three FEPs are summarised in **Tables 2.1, 2.2** and **2.3** with reference to the waste flow tables prepared by the Contractor. No waste was generated in the reporting period. Detailed waste flow tables are presented in **Annex F**.

**Table 2.1 Quantities of Waste Generated for FEP-01/558/2018/A**

Inert C&D Materials Generated (in '000m <sup>3</sup> )						
Month/Year	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill
Nov 2020	0	0	0	0	0	0

C&D Wastes Generated						
Month/Year	Metals (in '000kg <sup>3</sup> )	Paper / Cardboard Packaging (in '000kg <sup>3</sup> )	Plastics (in '000kg <sup>3</sup> )	Chemical Waste		Other (e.g. general refuse) (in '000m <sup>3</sup> )
				(in '000kg <sup>3</sup> )	(in '000L)	
Nov 2020	0	0	0	0	0	0

**Table 2.2 Quantities of Waste Generated and Dredged Marine Sediment for FEP-02/558/2018**

Inert C&D Materials Generated (in '000m <sup>3</sup> )						
Month/Year	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill
Nov 2020	0	0	0	0	0	0
C&D Wastes Generated						
Month/Year	Metals (in '000kg <sup>3</sup> )	Paper / Cardboard Packaging (in '000kg <sup>3</sup> )	Plastics (in '000kg <sup>3</sup> )	Chemical Waste		Other (e.g. general refuse) (in '000m <sup>3</sup> )
				(in '000kg <sup>3</sup> )	(in '000L)	
Nov 2020	0	0	0	0	0	0
Marine Sediment Dredged (in '000m <sup>3</sup> )						
Month/Year	Total Quantity of Type L Generated	Total Quantity of Type M Generated	Reused in the Contract	Reused in other Projects		
Nov 2020	0	0	0	0		

**Table 2.3 Quantities of Waste Generated and Dredged Marine Sediment for FEP-03/558/2018**

Inert C&D Materials Generated (in '000m <sup>3</sup> )						
Month/Year	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill
Nov 2020	0	0	0	0	0	0
C&D Wastes Generated						
Month/Year	Metals (in '000kg <sup>3</sup> )	Paper / Cardboard Packaging (in '000kg <sup>3</sup> )	Plastics (in '000kg <sup>3</sup> )	Chemical Waste		Other (e.g. general refuse) (in '000m <sup>3</sup> )
				(in '000kg <sup>3</sup> )	(in '000L)	
Nov 2020	0	0	0	0	0	0
Marine Sediment Dredged (in '000m <sup>3</sup> )						
Month/Year	Total Quantity of Type L Generated	Total Quantity of Type M Generated	Reused in the Contract	Reused in other Projects		
Nov 2020	0	0	0	0		

## 2.3 Records of Operating Speeds and Marine Travel Routes of Working Vessels

As no marine-based works were conducted during the reporting period, no non-compliance on the operating speeds and marine travel routes of working vessels was identified.

## 2.4 Implementation Status of Environmental Mitigation Measures

A summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in **Annex C**. The necessary mitigation measures were implemented properly for the Project.

## 2.5 Summary of Exceedances of the Environmental Quality Performance Limit

Since there were no construction activities conducted in the reporting period requiring impact monitoring of marine water quality and marine mammals in accordance with the Updated EM&A Manual, there were no breaches of action and limit levels.

Cumulative statistics on exceedance is provided in **Annex G**.

## 2.6 Summary of Environmental Complaints, Notification of Summons and Successful Prosecutions

There were no environmental complaints, notification of summons and successful prosecutions recorded in the reporting period.

Statistics on environmental complaints, notification of summons and successful prosecutions are summarised in **Annex G**.

### 3. FORECAST FOR THE NEXT REPORTING PERIOD

#### 3.1 Works Programme for the Next Reporting Period

Construction activities to be undertaken in the next reporting period of December 2020 are summarised in **Table 3.1** below, together with the key issues:

**Table 3.1 Major Construction Activities for the Next Reporting Period**

Activities	Key Issues
<i>Under FEP-01/558/2018/A</i>	
Marine-based Works	
<ul style="list-style-type: none"> <li>▪ Jacket installation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Disturbance to marine mammals</li> </ul>
<i>Under FEP-02/558/2018</i>	
Land-based Works	
<ul style="list-style-type: none"> <li>▪ Nil</li> </ul>	<ul style="list-style-type: none"> <li>▪ N/A</li> </ul>
Marine-based Works	
<ul style="list-style-type: none"> <li>▪ Nil <sup>(1)</sup></li> </ul>	<ul style="list-style-type: none"> <li>▪ N/A</li> </ul>
<i>Under FEP-03/558/2018</i>	
Land-based Works	
<ul style="list-style-type: none"> <li>▪ Piping works for Fire Services, oily water, stormwater drainage diversion and backfilling</li> <li>▪ Excavation for Plate Load Test - Pipe Rack</li> <li>▪ Plate Load Test - Pipe Rack</li> <li>▪ Cable pulling</li> </ul>	<ul style="list-style-type: none"> <li>▪ Dust emission from construction activities and stockpiles</li> <li>▪ Waste management</li> <li>▪ Site surface runoff and wastewater discharge</li> </ul>
Marine-based Works	
<ul style="list-style-type: none"> <li>▪ Nil</li> </ul>	<ul style="list-style-type: none"> <li>▪ N/A</li> </ul>

Remark: (1) It is anticipated that the preparation works for marine-based works for FEP-02/558/2018 (e.g. approval of marine dumping permit) would be undertaken in December 2020. Therefore, no marine-based works for FEP-02/558/2018 would be undertaken in December 2020. Marine-based works for FEP-02/558/2018 are expected to commence in January 2021.

The ET will keep track on the construction activities to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

#### 3.2 Monitoring Schedule for the Next Reporting Period

The tentative schedule for marine mammal monitoring is provided in **Annex H**.

## 4. CONCLUSION AND RECOMMENDATIONS

This Monthly EM&A Report presents the key findings of the EM&A works during the reporting period from 1 to 30 November 2020 for the construction works for the Project in accordance with the Updated EM&A Manual and the requirements of the Further Environmental Permits (FEP-01/558/2018/A, FEP-02/558/2018 & FEP-03/558/2018).

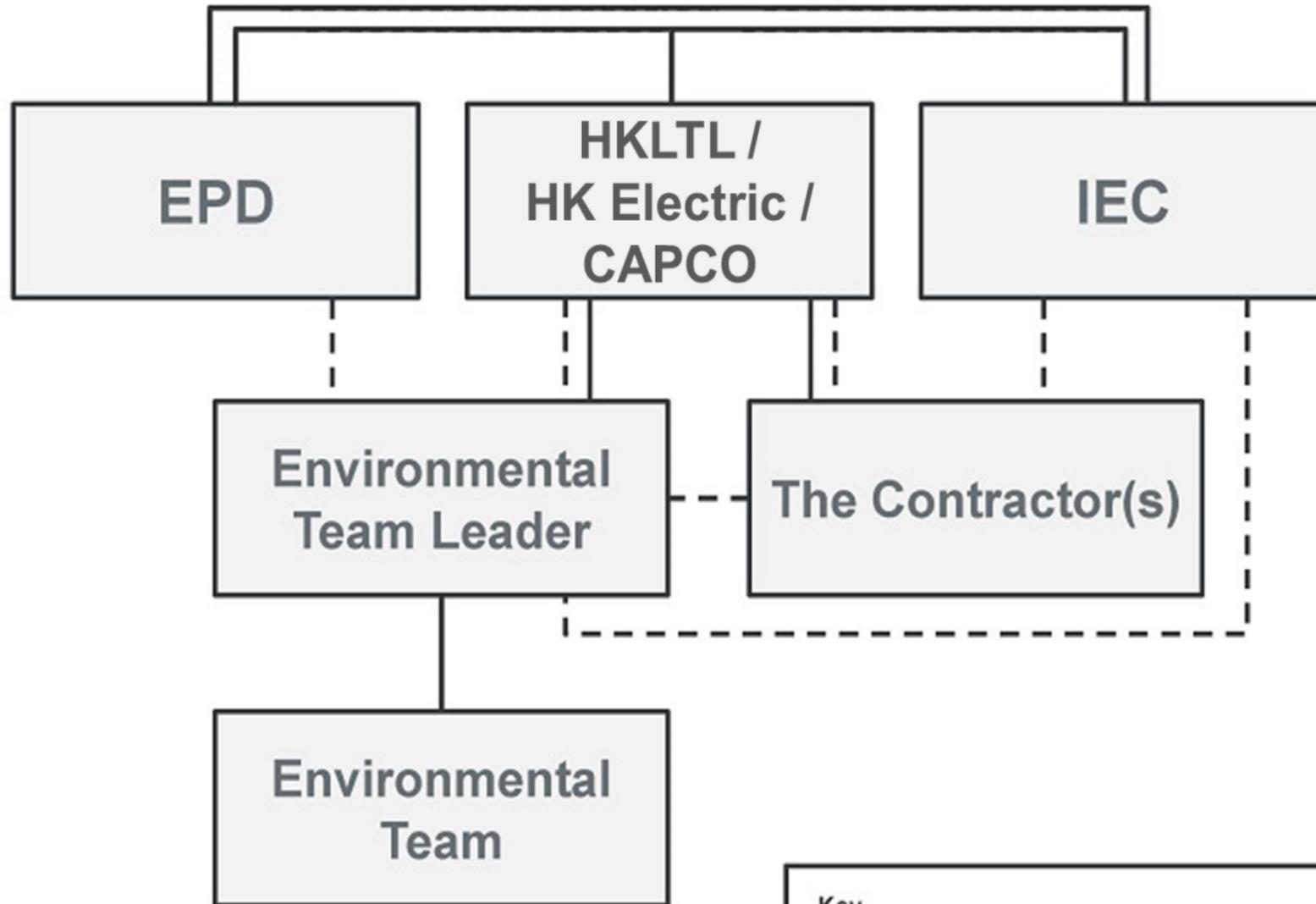
Environmental auditing works, including regular site inspections of construction works conducted by the ET, audit of implementation of Waste Management Plan and review of the acceptability of operating speeds and marine travel routes of working vessels were conducted in the reporting period. There were no observations and reminders recorded during the regular site inspections.

There were no environmental complaints, notification of summons and successful prosecutions recorded in the reporting period.

The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

## **ANNEX A**

### **PROJECT ORGANISATION**



**Key**

—— Formal Communication Channel

- - - Line of Management Responsibility

## **ANNEX B**

### **CONSTRUCTION PROGRAMME**

**Schedule of Works associated with the double berth jetty at LNG Terminal**

WORK	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021
<b>Preparation Phase</b>						
Pre-survey						
<b>Construction Phase</b>						
Jacket Installation						
Topsides Construction						

**Schedule of the works associated with the subsea gas pipeline for Lamma Power Station (LPS) and the associated Gas Receiving Station (GRS) in LPS**

WORK	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021
<b>Preparation Phase</b>						
Pre-survey	■					
Removal of obstructions		■				
<b>Construction Phase</b>						
Pre-trenching including Deployment of Silt Curtain and Pilot Test		■				
De-burial of pre-installed pipeline by Mass Flow Excavator		■				
Pipeline Laying		■				
Intermediate Hydrotesting for Pipeline			■			
Post-trenching including Deployment of Silt Curtain and Pilot Test			■			
Rock Armour Placement					■	
Final Hydrotesting for Pipeline					■	
Gas Receiving Station (GRS) including pipe rack construction, preparation works at the vent header for tie-in of the new GRS, fencing, new gas receiving facility and new pipeline connection, and pre-commissioning, commissioning and start up			■			

**Remarks:**

Pilot tests on the efficiency of silt curtain system shall be conducted during the early stage of construction to confirm the removal efficiency of the silt curtains.

**Schedule of the works associated with the subsea gas pipeline for Black Point Power Station (BPPS) and the associated Gas Receiving Station (GRS) in BPPS**

WORK	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022
<b>Preparation Phase</b>								
Pre-survey								
Removal of obstructions								
<b>Construction Phase</b>								
Pre-trenching including Deployment of Silt Curtain and Pilot Test								
Cofferdam and Sheet Pile Construction								
Pipeline Laying								
Post-trenching including Deployment of Silt Curtain and Pilot Test								
Rock Armour Placement								
Intermediate and Final Hydrotesting for Pipeline								
Gas Receiving Station (GRS) including pipe rack construction, preparation works at the vent header for tie-in of the new GRS, fencing, new gas receiving facility and new pipeline connection, and pre-commissioning, commissioning and start up								

Remarks:  
Pilot tests on the efficiency of silt curtain system shall be conducted during the early stage of construction to confirm the removal efficiency of the silt curtains.

## **ANNEX C**

### **ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)**

**TABLE C.1 IMPLEMENTATION SCHEDULE OF RECOMMENDED MITIGATION MEASURES**

EIA Reference	EM&A Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Location/ duration of recommended measures & timing of completion of recommended measures	Implementation Agent	Implementation Stage <sup>(1)</sup>			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
<b>Air Quality</b>									
S4.10.1	S2.1	Impervious sheet will be provided for skip hoist for material transport.	Land sites for GRSSs within BPPS and LPS / During construction, particularly dry season	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	N/A
S4.10.1	S2.1	The area where dusty work takes place should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after dusty activities as far as practicable.	Land sites for GRSSs within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	N/A
S4.10.1	S2.1	All dusty materials should be sprayed with water or a dust suppression chemical immediately prior to any loading, unloading or transfer operation.	Land sites for GRSSs within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	N/A
S4.10.1	S2.1	Dropping heights for excavated materials should be controlled to a practical height to minimise the fugitive dust arising from unloading.	Land sites for GRSSs within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	N/A

<sup>(1)</sup> D = Design Phase; C = Construction Phase; O = Operational Phase

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					D	C	O		
S4.10.1	S2.1	During transportation by truck, materials should not be loaded to a level higher than the side and tail boards, and should be dampened or covered before transport.	Land sites for GRSSs within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	N/A
S4.10.1	S2.1	Wheel washing device should be provided at the exits of the work sites. Immediately before leaving a construction site, every vehicle shall be washed to remove any dusty material from its body and wheels as far as practicable.	Land sites for GRSSs within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	N/A
S4.10.1	S2.1	Road sections between vehicle-wash areas and vehicular entrance will be paved.	Land sites for GRSSs within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	N/A
S4.10.1	S2.1	Haul roads will be kept clear of dusty materials and will be sprayed with water so as to maintain the entire road surface wet at all times.	Land sites for GRSSs within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	N/A
S4.10.1	S2.1	Temporary stockpiles of dusty materials will be either covered entirely by impervious sheets or sprayed with water to maintain the entire surface wet all the time.	Land sites for GRSSs within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	✓ for GRS in BPPS N/A for GRS in LPS

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					D	C	O		
S4.10.1	S2.1	Stockpiles of more than 20 bags of cement and dusty construction materials will be covered entirely by impervious sheeting sheltered on top and 3-sides.	Land sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	N/A
S4.10.1	S2.1	All exposed areas will be kept wet to minimise dust emission.	Land sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	N/A
S4.10.1	S2.1	Ultra-low-sulphur diesel (ULSD), defined as diesel fuel containing not more than 0.005% sulphur by weight, will be used for all construction plant on-site.	Land sites for GRSS within BPPS and LPS / During construction/ During operation	Contractor(s) / CAPCO / HK Electric		✓	✓	<i>Environment, Transport and Works Bureau Technical Circular (ETWB-TC(W)) No 19/2005 on Environmental Management on Construction Sites</i>	N/A
S4.10.1	S2.1	The engine of the construction equipment during idling will be switched off.	Land sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	N/A
S4.10.1	S2.1	Regular maintenance of construction equipment deployed on-site will be conducted to prevent black smoke emission.	Land sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>	N/A

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					D	C	O		
S4.10.1	S2.1	All marine vessels fuelled in Hong Kong are required to operate using marine light diesel with sulphur content lower than 0.05%.	Marine sites for the LNG Terminal, the BPPS Pipeline and the LPS Pipeline / During construction/ During operation	Contractor(s) / Project Proponents		✓	✓	<i>Air Pollution Control (Marine Light Diesel) Regulation</i>	N/A
S4.10.1	S2.1	Non-road mobile machinery (NRMMs), e.g. mobile generator and air compressor, shall comply with the prescribed emission standards and approved with a proper label by EPD.	Land sites for GRSS within BPPS and LPS and marine sites for the LNG Terminal, the BPPS Pipeline and the LPS Pipeline / During construction	Contractor(s)		✓		<i>Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation</i>	N/A
S4.10.1	S2.1	To ensure proper implementation of the recommended dust mitigation measures and good construction site practices during the construction phase of the GRSS and the BPPS and the LPS, environmental site audits on monthly basis is recommended throughout the construction period.	Land sites for GRSS within BPPS and LPS / During construction	Contractor(s)/ Environmental Team (ET) & Independent Environmental Checker (IEC)		✓		-	✓ for GRSS in BPPS  N/A for GRSS in LPS
S4.10.2	S2.2	LNGCs shall comply with the fuel restriction requirement under the <i>Air Pollution Control (Ocean Going Vessels) (Fuel at berth) Regulation</i> .	Marine site for the LNG Terminal / During operation	HKLTL			✓	<i>Air Pollution Control (Ocean Going Vessels) (Fuel at berth) Regulation</i>	N/A

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					D	C	O		
<b>Hazard to Life</b>									
S5.3.3	S3	All personnel within the BPPS shall comply with CLP safety policy and requirements.	Land site for the GRS within BPPS / During construction / During operation	Contractor(s) / CAPCO		✓	✓	-	✓
S5.3.3	S3	All personnel within the LPS shall comply with HK Electric safety policy and requirements.	Land site for the GRS within LPS / During construction / During operation	Contractor(s) / HK Electric		✓	✓	-	N/A
S5.3.3	S3	All operation work procedures shall be complied with the operating plant procedures or guidelines and regulatory requirements.	Land sites for GRSS within BPPS and LPS / During construction / During operation	Contractor(s) / CAPCO / HK Electric		✓	✓	-	✓ for GRS in BPPS N/A for GRS for LPS
S5.3.3	S3	All personnel shall be equipped with appropriate personal protective equipment (PPE) when working at the BPPS and LPS facilities.	Land sites for GRSS within BPPS and LPS / During construction / During operation	Contractor(s) / CAPCO / HK Electric		✓	✓	-	✓ for GRS in BPPS N/A for GRS for LPS
S5.3.3	S3	Safety training and briefings shall be provided to all personnel.	Land sites for GRSS within BPPS and LPS / During construction / During operation	Contractor(s) / CAPCO / HK Electric		✓	✓	-	✓ for GRS in BPPS N/A for GRS for LPS

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					D	C	O		
S5.3.3	S3	Regular site safety inspections/ audits shall be conducted.	Land sites for GRSS within BPPS and LPS / During construction/ During operation	Contractor(s) / CAPCO / HK Electric		✓	✓	-	✓ for GRS in BPPS  N/A for GRS for LPS
S5.3.3	S3	Method statements and risk assessments shall be prepared and safety control measures shall be in place before commencement of work.	Land sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		-	✓ for GRS in BPPS  N/A for GRS for LPS
S5.3.3	S3	Work permit system, on-site pre-work risk assessment and emergency response procedure shall be in place before commencement of work.	Land sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		-	✓ for GRS in BPPS  N/A for GRS for LPS
S5.3.3	S3	All construction workers shall be under close site supervision during the construction phase of the GRSSs.	Land sites for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		-	✓ for GRS in BPPS  N/A for GRS for LPS
S5.4.1	S3	An emergency response plan will be put in place which fully documents the procedures to be followed in the event of an emergency.	Transit of the LNGC and FSRU Vessel under Emergency Situation / During operation	HKLTL			✓	-	N/A

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					D	C	O		
S5.3.3	S3	Method statements and risk assessments shall be prepared and safety control measures should be in place before the commencement of construction works.	LNG Terminal / During construction	Contractor(s)		✓		-	N/A
S5.3.3	S3	Work permit system, on-site pre-work risk assessment and emergency response procedure shall be in place before commencement of construction works.	LNG Terminal / During construction	Contractor(s)		✓		-	N/A
S5.3.3	S3	All construction workers shall be under close site supervision during the construction phase of the LNG Terminal.	LNG Terminal / During construction	Contractor(s)		✓		-	N/A
S5.3.3	S3	All personnel within the LNG Terminal shall comply with relevant safety policy and requirements.	LNG Terminal / During operation	HKLTL			✓	-	N/A
S5.3.3	S3	All operation work procedures shall be complied with relevant codes and standards (e.g. SIGTTO) and regulatory requirements.	LNG Terminal / During operation	HKLTL			✓	-	N/A

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					D	C	O		
S5.3.3	S3	Work permit system and emergency response procedure shall be in place.	LNG Terminal / During operation	HKLTL			✓	-	N/A
S5.3.3	S3	Robust and extended process control system, safety control system, fire-fighting system and security system shall be provided.	LNG Terminal / During operation	HKLTL			✓	-	N/A
S5.3.3	S3	Sufficient and trained / competent staff shall be provided to operate the LNG Terminal.	LNG Terminal / During operation	HKLTL			✓	-	N/A
S5.3.3	S3	Regular safety inspections/audits shall be conducted.	LNG Terminal / During operation	HKLTL			✓	-	N/A
<b>Noise</b>									
S6.7	S4	N/A							N/A
<b>Water Quality</b>									
S7.9.1	S5	A detailed hydrotesting procedure for subsea pipelines will be developed that will detail how the process will be carried out, how it will be carefully controlled and monitored, and how the intake and subsequent discharge of the seawater will be managed. Water quality monitoring for commissioning hydrotest for the	LNG Terminal / During construction	Contractor(s)		✓		TM Standard under the WPCO, WPCO license requirements, WQO	N/A

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					D	C	O		
		subsea pipelines is presented in Section 5.3.5 of the Updated EM&A Manual.							
S7.9.1	S5	Adoption of appropriate dredging and jetting rates, plant numbers and silt curtains at the plant and WSRs, where applicable ( <b>Table 7.18</b> of the EIA Report, reprovided as <b>Table A.2</b> below).	Marine Dredging & Jetting for the BPPS Pipeline and the LPS Pipeline / During construction	Contractor(s)		✓		-	N/A
S7.9.1	S5	Grab dredging can be conducted concurrently with one TSHD.	Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction	Contractor(s)		✓		-	N/A
S7.9.1	S5	One jetting machine will be working on each pipeline.	Marine Jetting for the BPPS Pipeline and the LPS Pipeline / During construction	Contractor(s)		✓		-	N/A
S7.9.1	S5	Cofferdam construction and removal at landfalls of BPPS and LPS (where required) should not be conducted concurrently with the nearby pipeline dredging sections (BPPS KP44.9 - 45.0 and LPS KP17.4-18.2). Silt curtain surrounding the works areas for cofferdam construction and	Pipeline landfalls for the BPPS Pipeline and the LPS Pipeline / During construction	Contractor(s)		✓		-	N/A

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					D	C	O		
		removal at pipeline landfalls of the BPPS and the LPS should also be implemented.							
S7.9.1/ S7.9.2	S5	<p>The following measures shall be followed for provision of silt curtain:</p> <ul style="list-style-type: none"> <li>The silt curtain shall be formed and installed in such a way that tidal rise and fall are accommodated, with the silt curtains always extending from the surface to the bottom of the water column and held with anchor blocks.</li> <li>Schematic diagrams on silt curtain deployment are provided in <b>Figures 7.4</b> and <b>7.5</b> of the EIA Report.</li> <li>The contractor shall regularly inspect the silt curtains and check that they are moored and marked to avoid danger to marine traffic.</li> <li>Regular inspection on the integrity of the silt curtain should be carried out by the contractor and any damage to the silt curtain shall be repaired by the contractor promptly.</li> <li>Relevant marine works shall only be undertaken when the</li> </ul>	<p>Marine Dredging &amp; Jetting for the BPPS Pipeline and the LPS Pipeline / During construction</p> <p>Marine Maintenance Dredging (LNG Terminal) / During operation</p>	Contractor(s)		✓	✓	-	N/A

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					D	C	O		
		repair is fixed to the satisfaction of the engineer.							
S7.9.1 / S7.9.2	S5	All vessels should be well maintained and inspected before use to limit any potential discharges to the marine environment.	Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction  Marine Maintenance Dredging (LNG Terminal) / During operation	Contractor(s)		✓	✓	-	N/A
S7.9.1	S5	All vessels must have a clean ballast system.	Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction	Contractor(s)		✓		-	N/A
S7.9.1 / S7.9.2	S5	No overflow is permitted from the trailing suction hopper dredger and the Lean Mixture Overboard (LMOB) system will only be in operation at the beginning and end of the dredging cycle when the drag head is being lowered and raised.	Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction  Marine Maintenance Dredging (LNG	Contractor(s)		✓	✓	-	N/A

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					D	C	O		
			Terminal) / During operation						
S7.9.1 / S7.9.2	S5	Dredged marine mud will be disposed of in a gazetted marine disposal area in accordance with the Dumping at Sea Ordinance (DASO) permit conditions.	Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction  Marine Maintenance Dredging (LNG Terminal) / During operation	Contractor(s)		✓	✓	-	N/A
S7.9.1 / S7.9.2	S5	Dredgers will maintain adequate clearance between vessels and the seabed at all states of the tide and reduce operations speed to ensure that excessive turbidity is not generated by turbulence from vessel movement or propeller wash.	Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction  Marine Maintenance Dredging (LNG Terminal) / During operation	Contractor(s)		✓	✓	-	N/A
S7.9.1 / S7.9.2	S5	Marine works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site. Wastewater from	Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During	Contractor(s)		✓	✓	-	N/A

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					D	C	O		
		potentially contaminated area on working vessels should be minimised and collected. These kinds of wastewater should be brought back to port and discharged at appropriate collection and treatment system.	construction / During operation						
S7.9.1 / S7.9.2	S5	No solid waste is allowed to be disposed overboard.	Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction / During operation	Contractor(s)		✓	✓	-	N/A
S7.9.1	S5	Appropriate infiltration control, such as cofferdam wall, should be adopted to limit groundwater inflow to the excavation works areas in the Project site. Groundwater pumped out from excavation area should be discharged into the storm system via silt removal facilities.	Land sites & drainages for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		-	N/A
S7.9.1	S5	Silt removal facilities such as silt traps or sedimentation facilities will be provided to remove silt particles from runoff to meet the requirements of the TM standard under the WPCO. The design of silt removal facilities will be based on the guidelines provided in	Land sites & drainages for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		<i>ProPECC PN 1/94, TM Standard under the WPCO</i>	✓

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					D	C	O		
		ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures will be inspected on a regular basis and maintained to confirm proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit will be removed regularly.							
S7.9.1	S5	Earthworks to form the final surfaces will be followed up with surface protection and drainage works to prevent erosion caused by rainstorms.	Land sites & drainages for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		-	N/A
S7.9.1	S5	Appropriate surface drainage will be designed and provided where necessary.	Land sites & drainages for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		-	N/A
S 7.9.1	S5	The precautions to be taken at any time of year when rainstorms are likely together with the actions to be taken when a rainstorm is imminent or forecasted and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94.	Land sites & drainages for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		<i>ProPECC PN 1/94</i>	N/A

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S7.9.1	S5	Oil interceptors will be provided in the drainage system where necessary and regularly emptied to prevent the release of oil and grease into the storm water drainage system after accidental spillages.	Land sites & drainages for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		-	N/A
S7.9.1	S5	Temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge, if any, will be adequately designed for the controlled release of storm flows.	Land sites & drainages for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		-	✓ for GRS in BPPS N/A for GRS in LPS
S7.9.1	S5	The temporary diverted drainage, if any, will be reinstated to the original condition when the construction work has finished or when the temporary diversion is no longer required.	Land sites & drainages for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		-	N/A
S7.9.1	S5	Appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers over the construction site to prevent direct disposal of sewage into the water environment. No onsite discharge from these chemical toilets would be allowed.	Land sites & drainages for GRSS within BPPS and LPS / During construction	Contractor(s)		✓		-	✓ for GRS in BPPS N/A for GRS in LPS

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					D	C	O		
S 7.9.2	S5	Mitigation measures for maintenance dredging at the LNG Terminal in form of controlled dredging rate (maximum of 5,500m <sup>3</sup> day <sup>-1</sup> ) as well as silt curtain should be implemented for the control of sediment dispersion and the protection of the nearby WSRs.	Marine Maintenance Dredging (LNG Terminal) / During operation	Contractor(s) / HKLTL			✓	-	N/A
S 7.9.2 / S9.11.3	S5 / S7	A project-specific contingency plan (including protocols for avoidance, containment, remediation and reporting accidental fuel spill event) will be prepared and implemented to contain and clean up the spilled or leaked fuels or chemicals at the LNG Terminal, surrounding waters and marine parks.	Fuel spillage for the LNG Terminal / During operation	Contractor(s) / HKLTL			✓		N/A
S7.12.1	S5.2-S5.5	Marine water quality monitoring at selected WSRs is recommended for marine dredging and jetting works for the pipeline construction.	Designated monitoring stations as defined in EM&A Manual / During marine construction period	Environmental Team (ET)		✓		-	N/A
S7.12.1	S5.2-S5.5	To ensure proper implementation of the recommended mitigation measures and good construction site practices during marine-based	Marine sites for the LNG Terminal, the BPPS Pipeline and	Contractor(s)/ Environmental Team (ET) & Independent		✓		-	N/A

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					D	C	O		
		construction works, environmental site audits on a regular basis is recommended throughout the construction period.	the LPS Pipeline / During construction	Environmental Checker (IEC)					
S7.12.2	S5.2-S5.5	Water quality monitoring at the selected nearby WSRs is recommended for first year of operation of the LNG Terminal.	During operation for the LNG Terminal	Environmental Team (ET)/ HKLTL			✓	TM Standard under the WPCO, WPCO license requirements, WQO	N/A
S7.12.2	S5.2-S5.5	During maintenance dredging at the LNG Terminal, water quality monitoring at the selected nearby WSRs would be required.	Marine Maintenance Dredging (LNG Terminal) / During operation	Contractor(s) / HKLTL			✓	TM Standard under the WPCO, WPCO license requirements, WQO	N/A
<b>Waste Management</b>									
S8.5	S6.2	The contractor(s) will nominate approved personnel to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility of all wastes generated at the site.	All areas / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	-	✓
S8.5	S6.2	Good waste management practices should be implemented: <ul style="list-style-type: none"> <li>Training of site personnel in proper waste management</li> </ul>	All areas / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	-	✓ for 1 <sup>st</sup> , 3 <sup>rd</sup> , 5 <sup>th</sup> , 6 <sup>th</sup> & 7 <sup>th</sup> bullet points

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					D	C	O		
		and chemical handling procedures; <ul style="list-style-type: none"> <li>• Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Centre;</li> <li>• Encourage collection of aluminium cans and waste paper by individual collectors during construction with separate labelled bins provided to segregate these wastes from other general refuse by the workforce;</li> <li>• Any unused chemicals, and those with remaining functional capacity, be recycled as far as possible;</li> <li>• Prior to disposal of C&amp;D materials, wood, steel and other metals will be separated, to the extent practical for re-use and/or recycling to reduce the quantity of waste to be disposed in a landfill;</li> <li>• Proper storage and site practices to reduce the potential for damage or contamination of construction materials; and</li> </ul>							N/A for 2 <sup>nd</sup> & 4 <sup>th</sup> bullet points

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					D	C	O		
		<ul style="list-style-type: none"> <li>Plan and stock construction materials carefully to reduce amount of waste generated and avoid unnecessary generation of waste.</li> </ul>							
S8.5	Table 6.1	The contractor(s) must provide sufficient waste disposal points. Wastes will be collected and removed from site in a timely manner.	All areas / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	✓
S8.5	Table 6.1	The contractor(s) will have appropriate measures to reduce windblown/ floating litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	All areas / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	N/A
S8.5	Table 6.1	The contractor(s) will take and keep records of quantities of wastes generated, recycled and disposed of and the disposal sites.	All areas / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	✓
S8.5	Table 6.1	The contractor(s) must segregate and store different types of waste in different containers, skips or stockpiles to enhance reuse and recycling of material and proper disposal of waste.	All areas / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	✓

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					D	C	O		
S8.5	S6.2	The contractor(s) will use reusable non-timber formwork to reduce the amount of C&D materials.	All areas / During construction	Contractor(s)		✓		-	N/A
S8.5	Table 6.1	The contractor(s) must ensure that all the necessary waste disposal and marine dumping permits or licences are obtained prior to the commencement of the construction works.	During construction	Contractor(s)		✓		-	N/A
S8.5	S6.2	The contractor will open a billing account with EPD in accordance with the <i>Waste Disposal (Charges for Disposal of Construction Waste) Regulation</i> for the payment of disposal charges.	During construction	Contractor(s)		✓		<i>Cap 354N Waste Disposal (Charges for Disposal of Construction Waste) Regulation</i>	✓
S8.5	S6.2	A trip-ticket system will be established in accordance with <i>DEVB TC(W) No. 6/2010</i> to monitor the reuse of surplus excavated materials off-site and disposal of construction waste and general refuse at transfer facilities/ landfills, and to control fly-tipping.	During construction	Contractor(s)		✓		<i>DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction &amp; Demolition Materials</i>	✓
S8.5	S6.2	A WMP as stated in the <i>PNAP ADV-19</i> for the amount of waste generated, recycled and disposed of (including the disposal sites) will be established and implemented	All areas / During construction	Contractor(s)		✓		<i>PNAP ADV-19</i>	✓

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					D	C	O		
		during the construction phase as part of the Environmental Management Plan (EMP). The Contractor will be required to prepare the EMP and submits it to the Architect/ Engineer under the Contract for approval prior to implementation.							
S8.5	Table 6.1	The management of dredged marine sediment requirement from <i>PNAP ADV-21</i> will be incorporated in the Contract for the construction and maintenance dredging during the operation of the Project.	Marine works / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	<i>PNAP ADV-21</i> and <i>Dumping at Sea Ordinance (DASO)</i>	N/A
S8.5/ S7.9	S6.2 / S5	Disposal vessels will be fitted with tight bottom seals in order to prevent leakage of material during transport.	Dredged areas / During construction	Contractor(s)/ Project Proponents		✓		<i>Dumping at Sea Ordinance (DASO)</i>	N/A
S8.5/ S7.9	S6.2 / S5	Barges will be filled to a level, which ensures that of marine sediment and marine sediment laden water does not spill over during loading or transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action.	Dredged areas / During construction	Contractor(s)/ Project Proponents		✓		<i>Dumping at Sea Ordinance (DASO)</i>	N/A

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					D	C	O		
S8.5/ S7.9	S6.2 / S5	After dredging, any excess materials will be cleaned from decks and exposed fittings before the vessel is moved from the dredging area.	Dredged areas / During construction	Contractor(s)/ Project Proponents		✓		<i>Dumping at Sea Ordinance (DASO)</i>	N/A
S8.5/ S7.9	S6.2 / S5	When the dredged material has been unloaded at the disposal areas, any material that has accumulated on the deck or other exposed parts of the vessel will be removed and placed in the hold or a hopper. Under no circumstances will decks be washed clean in a way that permits material to be released overboard.	Dredged areas / During construction	Contractor(s)/ Project Proponents		✓			N/A
S8.5	S6.2	Dredgers will maintain adequate clearance between vessels and the seabed at all states of the tide and reduce operations speed to ensure that excessive turbidity is not generated by turbulence from vessel movement or propeller wash.	Dredged areas / During construction	Contractor(s)/ Project Proponents		✓			N/A
S8.5	Table 6.1	C&D materials will be segregated on-site into public fill and non-inert C&D materials and stored in different containers or skips to facilitate reuse of the public fill and	During construction	Contractor(s)		✓		-	✓

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					D	C	O		
		proper disposal of the construction waste. Specific areas of the land and marine-based construction sites will be designated for such segregation and storage if immediate use is not practicable. Prefabrication will be adopted as far as practicable to reduce the construction waste arisings.							
S8.5	Table 6.1	The contractor(s) will register as a chemical waste producer with the EPD. Chemical waste will be handled in accordance with the <i>Code of Practice on the Packaging, Handling and Storage of Chemical Wastes</i> .	All areas / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	<i>Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes</i>	✓
S8.5	Table 6.1	Containers used for storage of chemical wastes will: <ul style="list-style-type: none"> <li>• Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;</li> <li>• Have a capacity of less than 450 L unless the specifications have been approved by the EPD; and</li> </ul>	All areas / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	<i>Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes</i>	N/A

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					D	C	O		
		<ul style="list-style-type: none"> <li>Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations.</li> </ul>							
S8.5	Table 6.1	<p>The storage area for chemical wastes will:</p> <ul style="list-style-type: none"> <li>Be clearly labelled and used solely for the storage of chemical waste;</li> <li>Be enclosed on at least 3 sides;</li> <li>Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest;</li> <li>Have adequate ventilation;</li> <li>Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and</li> </ul>	All areas / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes	N/A

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					D	C	O		
		<ul style="list-style-type: none"> <li>Be arranged so that incompatible materials are appropriately separated.</li> </ul>							
S8.5	Table 6.1	<p>Chemical waste will be disposed of:</p> <ul style="list-style-type: none"> <li>Via a licensed waste collector; and</li> <li>To a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Facility which also offers a chemical waste collection service and can supply the necessary storage containers.</li> </ul>	All areas / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes	N/A
S8.5	Table 6.1	<p>General refuse (including the floating refuse collected) will be stored in enclosed bins separately from C&amp;D materials and chemical wastes. Floating refuse will be collected on an 'as needed' basis for disposal as general refuse. Workers will be prohibited from throwing rubbish into the sea and adequate bins will be provided on both land and marine-based sites and marine vessels. General refuse will be delivered separately from C&amp;D materials and chemical</p>	All areas / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	-	✓

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					D	C	O		
		wastes for offsite disposal on a regular basis to reduce odour, pest and litter impacts. General refuse from the marine vessels will be collected and disposed on shore.							
S8.5	Table 6.1	Recycling bins will be provided at strategic locations within the land and marine-based construction site and marine vessels to facilitate recovery of recyclable materials (including aluminium can, waste paper, glass bottles and plastic bottles) from the Project Site. Materials recovered will be sold for recycling.	All areas / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	-	✓ for provision of recycling bins  N/A for material recovered being sold for recycling
S8.5	S6.2	To avoid any odour and litter impact, appropriate number of portable toilets will be provided for workers on-site.	All areas / During construction / During operation	Contractor(s)		✓	✓	-	✓
S8.5	S6.2	At the commencement of the construction works and operations, training will be provided to workers on the concepts of site cleanliness and on appropriate waste management procedures, including waste reduction, reuse and recycling. In particular, the training will emphasize no dumping of waste into the sea is allowed, particularly at marine-	All areas / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	-	✓

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					D	C	O		
		based work sites and on marine vessels.							
S8.5	S6.2	Industrial waste arising from maintenance activities will be segregated. Scrap metals and recyclables will be sent for recycling to reduce the overall quantity of waste disposed from these activities.	All areas / During operation	Project Proponents			✓	-	N/A
S8.7	S6.1	It is recommended that monthly audits of the waste management practices be carried out during the construction phase land-based work sites (at the GRSs at the BPPS and the LPS), and at marine-based work sites (on marine vessels and Jetty) to determine if wastes are being managed in accordance with the recommended good site practices and WMP. The audits will include all aspects of waste management including waste generation, storage, handling, recycling, transportation and disposal, to prevent any dumping of waste into the sea or malpractice of waste disposal.	All areas / During construction	Contractor(s)/ Environmental Team (ET) & Independent Environmental Checker (IEC)		✓		-	✓
<b>Ecology</b>									

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					D	C	O		
S9.11.2	S7	The vessel operators will be required to control and manage all effluent from vessels. These kinds of wastewater shall be brought back to port where possible and discharged at appropriate collection and treatment system to prevent avoidable water quality impact.	Marine works / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	-	N/A
S9.11.2	S7	A policy of no dumping of rubbish, food, oil, or chemicals will be strictly enforced. This will also be covered in the contractor briefings.	Marine works / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	N/A
S9.11.2	S7	Only well-maintained and inspected vessels would be used to limit any potential discharges to the marine environment.	Marine works / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	N/A
S9.11.2	S7	Standard site practices outlined in <i>ProPECC PN 1/94 "Construction Site Drainage"</i> will be followed as far as practicable in order to reduce surface runoff, minimise erosion, and also to retain and reduce any SS prior to discharge.	Marine works / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	<i>ProPECC PN 1/94</i>	N/A
S9.11.3	S7	Pipeline dredging/ jetting works between North of Tai O and Fan Lau (BPPS KP21.3 to 15.6) will avoid the peak months of Chinese	Marine works (Dredging/ jetting works between North of Tai O and	Contractor(s)		✓		-	N/A

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					D	C	O		
		White Dolphin (CWD) calving (May and June).	Fan Lau along the BPPS Pipeline) / During construction						
S9.11.3	S7	Pipeline dredging/ jetting works between South of Soko Islands and the LNG Terminal (BPPS KP8.9 to 0.0) will be restricted to a daily maximum of 12 hours with daylight (0700 – 1900) operations.	Marine works (Dredging/ jetting works between South of Soko Islands and the LNG Terminal along the BPPS Pipeline) / During construction	Contractor(s)		✓		-	N/A
S9.11.3	S7	Pipeline dredging/ jetting from LNG Terminal to South of Shek Kwu Chau (LPS KP0.0 to 5.0) will be restricted to a daily maximum of 12 hours with daytime (0700 – 1900) operations.	Marine works (Dredging/ jetting works between from LNG Terminal to South of Shek Kwu Chau along the LPS Pipeline) / During construction	Contractor(s)		✓		-	N/A
S9.11.3	S7	Use of vibratory/ hydraulic pushing method to vibrate / push the open-ended steel tubular pile for the upper layer of the seabed and only use hydraulic hammer (if needed) to install the remainder of the pile length through the lower layer of	Marine works (Piling at the LNG Terminal) / During construction	Contractor(s)		✓		-	N/A

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					D	C	O		
		<p>the seabed. During underwater percussive piling works:</p> <ul style="list-style-type: none"> <li>• Quieter hydraulic hammers should be used instead of the noisier diesel hammers;</li> <li>• Use of Noise Reduction System for hydraulic hammering;</li> <li>• Acoustic decoupling of noisy equipment on work barges should be undertaken;</li> <li>• Using ramp-up piling procedures. This comprises of low energy driving for a period of time prior to commencement of full piling. This will promote avoidance of the area by marine mammals when sounds levels are not injurious. Blow frequency during this ramping up period should replicate the intensity that would be undertaken during full piling (e.g. one blow every two seconds) to provide cues for marine mammals to localize the sound source. Pile blow energy should be ramped up gradually over the 'soft start' period. Activities will be continuous without short-</li> </ul>							

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					D	C	O		
		breaks and avoiding sudden random loud sound emissions; <ul style="list-style-type: none"> <li>Underwater percussive piling should be conducted inside a bubble curtain so as to ameliorate underwater sound level transmission;</li> <li>The percussive pile driving will be conducted during the daytime (0700 – 1900) for a maximum of 12 hours, avoiding generation of underwater sounds at night time; and</li> <li>Underwater percussive piling works for the Jetty construction will avoid the peak season of FP (December to May).</li> </ul>							
S9.11.3	S7	The vessel operators of this Project will be required to use predefined and regular routes (that do not encroach into existing and proposed marine parks), make use of designated fairways to access the works areas, and would avoid traversing sensitive habitats such as existing and proposed marine parks (with the exception of the FSRU Vessel which will need to transit through the proposed SLMP	Marine works / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	N/A

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EIA Reference	EM&A Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Location/ duration of recommended measures & timing of completion of recommended measures	Implementation Agent	Implementation Stage <sup>(1)</sup>			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
		during manoeuvring to the Jetty and after typhoon event due to its safe operational requirement).							
S9.11.3	S7	Any anchoring/ anchor spread requirements during Project construction will avoid encroachment into the existing and proposed marine parks.	Marine works (on existing, planned and potential marine parks) / During construction	Contractor(s)/ Project Proponents		✓		-	N/A
S9.11.3	S7	Silt curtain deployment during Project construction and maintenance dredging will avoid encroachment into the existing and proposed marine parks.	Marine works (on existing, planned and potential marine parks) / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	-	N/A
S9.11.3	S7	No stopping over or anchoring activity of vessels related to the Project should be conducted within existing and proposed marine parks, even before, during and after typhoon.	Marine works (on existing, planned and potential marine parks) / During construction / During operation	Contractor(s)/ Project Proponents		✓	✓	-	N/A
S9.11.3	S7	Use of appropriate dredging and jetting rates with the use of silt curtain where needed as recommended in the Water Quality section ( <b>Section 7</b> of the EIA Report) to reduce potential water quality impacts from elevated	Marine works / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	N/A

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EIA Reference	EM&A Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Location/ duration of recommended measures & timing of completion of recommended measures	Implementation Agent	Implementation Stage <sup>(1)</sup>			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
		suspended solids (SS) due to the proposed marine works.							
S9.11.3	S7	Silt curtain will be checked and maintained to ensure its effectiveness in mitigating water quality impacts on existing, planned and potential marine parks.	Marine works / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	N/A
S9.11.3	S7	All vessel operators working on the Project will be given a briefing, alerting them to the locations of the existing, proposed and potential marine parks and the regulations for marine parks, the possible presence of dolphins and porpoises in the marine works areas, and the guidelines for safe vessel operation in the presence of cetaceans. The vessels will avoid using high speed as far as possible. By observing the guidelines, vessels will be operated in an appropriate manner so that marine mammals will not be subject to undue disturbance or harassment.	Marine works / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	N/A

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EIA Reference	EM&A Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Location/ duration of recommended measures & timing of completion of recommended measures	Implementation Agent	Implementation Stage <sup>(1)</sup>			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
S9.11.3	S7	All vessels used in this Project will be required to slow down to 10 knots around the Project's marine works areas and areas with high dolphin and porpoise usage, including existing and proposed marine parks. With implementation of this measure, the chance of vessel strike resulting in physical injury or mortality of marine mammals will be extremely unlikely.	Marine works / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	N/A
S9.11.3	S7	During underwater percussive piling works, a marine mammal exclusion zone within a radius of 500m radius will be implemented during underwater percussive piling works. Qualified observer(s) will scan an exclusion zone of 500m radius around the work area for at least 30 minutes prior to the start of piling. If a marine mammal is observed in the exclusion zone, piling will be delayed until they have left the area. This measure will ensure the area in the vicinity of the underwater percussive piling work is clear of marine mammals prior to the commencement of works and will serve to reduce any disturbance to marine mammals. When a marine mammal is spotted	Marine works / During construction	Contractor(s) / Project Proponents		✓		-	N/A

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EIA Reference	EM&A Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Location/ duration of recommended measures & timing of completion of recommended measures	Implementation Agent	Implementation Stage <sup>(1)</sup>			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
		by qualified personnel within the exclusion zone, piling works will cease and will not resume until the observer confirms that the zone has been continuously clear of the marine mammal for a period of 30 minutes. This measure will ensure the area in the vicinity of the piling is clear of the marine mammal during works and will serve to reduce any disturbance to marine mammals.							
S9.11.3	S7	During marine dredging or jetting operations, a marine mammal exclusion zone within a radius of 250m from dredger or jetting machine will be implemented. Qualified observer(s) will scan an exclusion zone of 250m radius around the work area for at least 30 minutes prior to the start of dredging or jetting. If cetaceans or other megafauna are observed in the exclusion zone, dredging or jetting will be delayed until they have left the area. This measure will ensure the area in the vicinity of the dredging or jetting work is clear of marine mammals prior to the commencement of works and will serve to reduce any disturbance to marine mammals.	Marine works / During construction / During operation	Contractor(s) / Project Proponents		✓	✓	-	N/A

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EIA Reference	EM&A Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Location/ duration of recommended measures & timing of completion of recommended measures	Implementation Agent	Implementation Stage <sup>(1)</sup>			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
		When a marine mammal is spotted by qualified personnel within the exclusion zone, dredging or jetting works will cease and will not resume until the observer confirms that the zone has been continuously clear of the marine mammal for a period of 30 minutes. This measure will ensure the area in the vicinity of the works is clear of the marine mammal during works and will serve to reduce any disturbance to marine mammals. If necessary, for night-time works, exclusion zone monitoring for FP by underwater acoustic means would be explored to supplement the exclusion zone monitoring by trained observers. A site trial will be conducted to demonstrate its practicability/ effectiveness before actual implementation during the night-time works.							
S9.11.3	S7	Implementation of a contingency plan to contain and clean up the spilled or leaked fuels or chemicals at the LNG Terminal, surrounding waters and marine parks.	Marine site for the LNG Terminal / During operation	Contractor(s) / HKLTL			✓	-	N/A

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EIA Reference	EM&A Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Location/ duration of recommended measures & timing of completion of recommended measures	Implementation Agent	Implementation Stage <sup>(1)</sup>			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
S9.15.1	S7	Baseline, impact and post-construction monitoring of marine mammal using vessel-based line transect surveys and passive acoustic monitoring (PAM) will be undertaken to keep track of potential changes in the usage of waters in the vicinity of the Project's works areas by FP. Prior to the commencement of monitoring, methods will be agreed with the AFCD.	Marine site / During construction	Contractor(s) / ET/ Project Proponents		✓		-	N/A
<b>Fisheries</b>									
S10.8	S8	The mitigation measures designed to mitigate impacts to water quality to acceptable levels (compliance with assessment criteria) and marine ecological impacts are expected to mitigate impacts to fisheries resources.	During construction and operation	Contractor(s) / Project Proponents / Environmental Team (ET) & Independent Environmental Checker (IEC)		✓	✓	-	N/A
S10.8	S8	Impingement and entrainment of fisheries resources will be reduced through appropriate design of the intake screens on the cooling water intake.	During operation for the LNG Terminal	Contractor(s) / HKLTL			✓	-	N/A
<b>Visual</b>									
S11.8	S9	Sensitive architectural design of the new facilities. This should take into account material texture,	All areas / Detailed design / During	Design Contractor / Project Proponents	✓	✓	✓	-	✓

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EIA Reference	EM&A Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Location/ duration of recommended measures & timing of completion of recommended measures	Implementation Agent	Implementation Stage <sup>(1)</sup>			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
		colour, finished to structure and the context of the site to ensure the GRSs at the BPPS and LPS blend into the existing context, cause least disturbance to the existing land. LNG Terminal will be designed for marine safety and operations, in accordance with relevant standards and regulations and sensitive architectural design will be considered where practicable.	construction / During operation						
S11.8	S9	Pre-construction and construction period for the GRSs and LNG Terminal should be reduced as far as practical to lower visual impact.	All areas / During construction	Contractor(s)		✓		-	✓ for GRS in BPPS  N/A for GRS in LPS and LNG Terminal
S11.8	S9	Following construction, land areas temporarily affected by the construction works, will be reinstated to their former state.	Land sites for the GRSs within BPPS and LPS / During construction	Contractor(s)		✓		-	✓ for GRS in BPPS  N/A for GRS in LPS
S11.8	S9	Light intensity and beam directional angle should be controlled at the GRSs and the LNG Terminal at the design stage to reduce light pollution and glare	All areas / Detailed design / During operation	Design Contractor / Project Proponents	✓		✓	-	N/A

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EIA Reference	EM&A Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Location/ duration of recommended measures & timing of completion of recommended measures	Implementation Agent	Implementation Stage <sup>(1)</sup>			Relevant Legislation & Guidelines	Implementation Status
					D	C	O		
		(e.g. hooded lights, specific directional focus, etc.).							
S11.8	S9	Any plants to be affected by the GRSs at the BPPS and the LPS should be preserved and care taken to ensure the existing health status of the vegetation is maintained or enhanced after construction.	All areas / During construction	Contractor(s)		✓		-	✓ for GRS in BPPS  N/A for GRS in LPS
<b>Cultural Heritage</b>									
S12.7	S10	N/A							N/A

**TABLE C.2 SUMMARY OF MITIGATION MEASURES FOR PIPELINE CONSTRUCTION WORKS**

Work Location	Plants Involved	Allowed Maximum Work Rate	Silt Curtain at Plants	Silt Curtain at Water Sensitive Receivers	Other Measures	Implementation Status
<b>LPS Pipeline (under FEP-02/558/2018)</b>						
Pipeline shore approach at LPS (KP17.4-18.2)	1 Grab Dredger	1,600m <sup>3</sup> day <sup>-1</sup> for 24 hours each day	Yes	Not required		N/A
West Lamma Channel (KP14.5-17.4)	1 Jetting Machine	1,000m day <sup>-1</sup> for 24 hours each day	Yes	Not required		N/A
South of Shek Kwu Chau to West Lamma Channel (KP5.0-14.5)	1 Jetting Machine	7,000m day <sup>-1</sup> for 24 hours each day	Yes	Not required		N/A
Double Berth Jetty to South of Shek Kwu Chau (KP0.1-5.0)	1 Jetting Machine	720m day <sup>-1</sup> for 24 hours each day	Yes	Two layers at Eastern Boundary of the Proposed South Lantau Marine Park (KP0.1-5.0)	Daily maximum of 12 hours with daylight (0700 – 1900)	N/A
<b>Pipeline Riser Sections at Double Berth Jetty (under FEP-02/558/2018 and FEP-03/558/2018)</b>						
Pipeline Riser (KP0.0-0.1 for both pipelines)	1 Grab Dredger	8,000m <sup>3</sup> day <sup>-1</sup> for 24 hours each day	Yes	Not required	Daily maximum of 12 hours with daylight (0700 – 1900)	N/A
<b>BPPS Pipeline (under FEP-03/558/2018)</b>						
Jetty Approach (KP0.1-5.0), excluding Subsea Cable Sterile Corridors	1 Jetting Machine	1,000m day <sup>-1</sup> for 24 hours each day	Yes	Not required for grab dredging; Two layers at Southern Boundary of the Proposed South Lantau Marine Park (KP0.1-8.9) for jetting	Daily maximum of 12 hours with daylight (0700 – 1900)	N/A
Subsea Cable Sterile Corridors (KP1.49-2.75 and KP3.55-4.43)	2 Grab Dredgers, followed by 1 Jetting Machine	8,000m <sup>3</sup> day <sup>-1</sup> for 24 hours each day for each dredger 720m day <sup>-1</sup> for 24 hours each day jetting machine	Yes			N/A
South of Soko Islands (KP5.0-8.9)	1 Jetting Machine	1,000m day <sup>-1</sup> for 24 hours each day	Yes			N/A

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Work Location	Plants Involved	Allowed Maximum Work Rate	Silt Curtain at Plants	Silt Curtain at Water Sensitive Receivers	Other Measures	Implementation Status
Southwest of Soko Islands (KP8.9-12.1)	1 Jetting Machine	1,000m day <sup>-1</sup> for 24 hours each day	Yes	Not required		N/A
Adamasta Channel (KP12.1-15.6)	1 Jetting Machine	1,000m day <sup>-1</sup> for 24 hours each day	Yes	Not required		N/A
Southwest Lantau (KP15.6-21.3)	1 Jetting Machine	1,500 m day <sup>-1</sup> for 24 hours each day	Yes	Not required	Avoid the peak months of Chinese White Dolphin (CWD) calving (May and June)	N/A
West of Tai O to West of HKIA (KP21.3-31.5)	1 Jetting Machine	1,500m day <sup>-1</sup> for 24 hours each day from KP KP26.2 to 21.3 720m day <sup>-1</sup> for 24 hours each day from KP31.5 to 26.2	Yes	Not required		N/A
Sha Chau to Lung Kwu Chau (KP31.5-36.0)	1 Jetting Machine	720m day <sup>-1</sup> for 24 hours each day	Yes	Two layers at Western Boundary of the Sha Chau and Lung Kwu Chau Marine Park (KP31.5-36.0)		N/A
Sha Chau to Lung Kwu Chau (KP36.0-37.5)	1 Jetting Machine	720m day <sup>-1</sup> for 24 hours each day	Yes	Two layers at Western Boundary of the Sha Chau and Lung Kwu Chau Marine Park (KP36.0-37.5)		N/A
Lung Kwu Chau to Urmston Anchorage (KP37.5-41.1)	1 Jetting Machine	1,000m day <sup>-1</sup> for 24 hours each day	Yes	Two layers at Northwestern corner of Sha Chau and Lung Kwu Chau Marine Park (KP37.5-41.1)		N/A
Urmston Road (KP41.1-42.9)	1 Grab Dredger	8,000m <sup>3</sup> day <sup>-1</sup> for 24 hours each day	Yes	Not required		N/A

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<b>Work Location</b>	<b>Plants Involved</b>	<b>Allowed Maximum Work Rate</b>	<b>Silt Curtain at Plants</b>	<b>Silt Curtain at Water Sensitive Receivers</b>	<b>Other Measures</b>	<b>Implementation Status</b>
West of BPPS (KP42.9-44.9)	1 Jetting Machine	1,000m day <sup>-1</sup> for 24 hours each day	Yes	Two layers at CR1, CR2 (Note 1)		N/A
Pipeline shore approach at BPPS (KP44.9-45.0)	1 Grab Dredger	1,500m <sup>3</sup> day <sup>-1</sup> for 24 hours each day	Yes	Two layers at CR1, CR2 (Note 1)		N/A

Note: (1) CR1 and CR2 denote the coral colonies identified at the artificial seawall at BPPS.

## **ANNEX D**

### **STATUS OF STATUTORY ENVIRONMENTAL REQUIREMENTS**

**TABLE D.1 STATUS OF STATUTORY ENVIRONMENTAL REQUIREMENTS FOR WHOLE PROJECT (FEP-01/558/2018/A, FEP-02/558/2018 AND FEP-03/558/2018)**

Item	Description	Ref. No.	Date of Expiry	Status
1	Notification Pursuant to Section 3(1) of <i>Air Pollution Control (Construction Dust) Regulation</i>	454879	N/A	Valid
2	Billing Account under <i>Waste Disposal (Charges for Disposal of Construction Waste) Regulation</i>	7037035	N/A	Valid
3	Registration as Chemical Waste Producer under <i>Waste Disposal (Chemical Waste) (General) Regulation</i>	WPN 5213-912-C4445-01	N/A	Registration completed on 12 May 2020
4	Construction Noise Permit (for construction site for the Hong Kong Offshore LNG Terminal Project) under <i>Noise Control Ordinance</i>	GW-RS0743-20 (Note 1)	19 Mar 2021	Validity from 2 Oct 2020 to 19 Mar 2021
5	Construction Noise Permit (for construction site for the Hong Kong Offshore LNG Terminal Project) under <i>Noise Control Ordinance</i>	GW-RS0911-20	3 Jun 2021	Validity from 4 Dec 2020 to 3 Jun 2021

Note: (1) Construction Noise Permit GW-RS0743-20 has been withdrawn and replaced by GW-RS0911-20.

**TABLE D.2 STATUS OF STATUTORY ENVIRONMENTAL REQUIREMENTS FOR FEP-01/558/2018/A**

Item	Description	Ref. No.	Date of Expiry	Status
1	Further Environmental Permit under <i>EIA Ordinance</i>	FEP-01/558/2018	N/A	Issued on 17 Jan 2020
2	Further Environmental Permit under <i>EIA Ordinance</i>	FEP-01/558/2018/A	N/A	Issued on 6 Nov 2020
3	Construction Noise Permit (for construction site of the water space between South of Shek Kwu Chau and East of Soko Islands, offshore area near boundary of Hong Kong) under <i>Noise Control Ordinance</i>	PP-RS0013-20	31 Dec 2020	Validity from 9 Oct to 31 Dec 2020

**TABLE D.3 STATUS OF STATUTORY ENVIRONMENTAL REQUIREMENTS FOR  
FEP-02/558/2018**

Item	Description	Ref. No.	Date of Expiry	Status
1	Further Environmental Permit under <i>EIA Ordinance</i>	FEP-02/558/2018	N/A	Issued on 17 Jan 2020

**TABLE D.4 STATUS OF STATUTORY ENVIRONMENTAL REQUIREMENTS FOR  
FEP-03/558/2018**

Item	Description	Ref. No.	Date of Expiry	Status
1	Further Environmental Permit under <i>EIA Ordinance</i>	FEP-03/558/2018	N/A	Issued on 17 Jan 2020
2	Construction Noise Permit (for offshore construction site near Urmston Road, Tuen Mun) under <i>Noise Control Ordinance</i>	GW-RW0389-20	14 Feb 2021	Validity from 28 Aug 2020 to 14 Feb 2021
3	Construction Noise Permit (for construction site near Eastern Road, BPPS, Yung Long Road, Tuen Mun) under <i>Noise Control Ordinance</i>	GW-RW0407-20	6 Mar 2021	Validity from 11 Sept 2020 to 6 Mar 2021

## **ANNEX E**

### **WASTE MANAGEMENT CHECKLIST**

**TABLE E.1 WASTE MANAGEMENT CHECKLIST**

Activities	Timing	Checking Frequency	Works Area(s)	Compliance (✓) / Non-compliance (x)
Necessary waste disposal permits or licences have been obtained.	Before the commencement of works	Once	FEP-01/558/2018/A FEP-02/558/2018 FEP-03/558/2018	✓
Dredged sediments are managed and disposed in accordance with <i>PNAP ADV-21: Management Framework for Disposal of Dredged/ Excavated Sediment and Dumping at Sea Ordinance (DASO)</i> .	Throughout the dredging works	Each Month	FEP-02/558/2018 FEP-03/558/2018	To be checked upon commencement of dredging operations
Waste are collected by licensed waste hauliers and disposed of at licensed sites.	Throughout the works	Each Week	FEP-01/558/2018/A FEP-03/558/2018	(1) ✓
Records of quantities of wastes generated, recycled and disposed of and the disposal sites are properly kept.	Throughout the works	Each Month	FEP-01/558/2018/A FEP-03/558/2018	(1) ✓
Sufficient waste disposal points are provided. Wastes are collected and removed from site in a timely manner. General refuse is collected on a regular basis.	Throughout the works	Each Week	FEP-01/558/2018/A FEP-03/558/2018	(1) ✓
Waste storage areas are properly cleaned and do not cause windblown litter and dust nuisance. Appropriate measures to reduce windblown litter and dust nuisance of waste will be adopted, e.g. by either covering trucks or by transporting wastes in enclosed containers.	Throughout the works	Each Week	FEP-01/558/2018/A FEP-03/558/2018	(1) ✓
Different types of waste are segregated in different containers or skip to enhance reuse and recycling of material and proper disposal of waste.	Throughout the works	Each Week	FEP-01/558/2018/A FEP-03/558/2018	(1) ✓

Activities	Timing	Checking Frequency	Works Area(s)	Compliance (✓) / Non-compliance (x)
Chemical wastes are stored, handled and disposed of in accordance with the <i>Code of Practice on the Packaging, Handling and Storage of Chemical Wastes</i> , published by the EPD. Chemical wastes are separated for special handling and appropriate treatment at the Chemical Waste Treatment Centre at Tsing Yi.	Throughout the works	Each Week	FEP-01/558/2018/A FEP-03/558/2018	<sup>(1)</sup> No chemical waste was produced in the reporting period.

Remark: (1) The piling installation vessel for construction of the jetty was under quarantine from 19 November 2020 to 2 December 2020 in Hong Kong waters. Therefore, no marine-based works for FEP-01/558/2018/A was undertaken in November 2020. Marine-based works for FEP-01/558/2018/A are expected to commence in December 2020.

## **ANNEX F**

### **WASTE FLOW TABLE**

Monthly Summary Waste Flow Table for 2020 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rock and Large Broken Concrete ^1	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper / Cardboard Packaging	Plastics ^2	Chemical Waste		Others (e.g. general refuse) ^3
	(in '000m3)						(in '000kg3)			(in '000kg <sup>3</sup> )	(in '000L)	(in '000m3)
Jan	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-	-	-	-	-
<b>SUB-TOTAL</b>	-	-	-	-	-	-	-	-	-	-	-	-
Jul	-	-	-	-	-	-	-	-	-	-	-	-
Aug	-	-	-	-	-	-	-	-	-	-	-	-
Sep	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Oct	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dec												
<b>TOTAL</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

- Notes :
- (1) Broken concrete for recycling into aggregates;
  - (2) Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging materials;
  - (3) 1 full loaded dumping truck is assumed to be equivalent to 6.5m<sup>3</sup> by volume; and
  - (4) This waste flow table include C&D materials arising from Package A (FEP01/558/2018/A).

Project Name: Hong Kong Offshore LNG Terminal Project

Monthly Summary Waste Flow Table for 2020 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Monthly Quantities of Marine Sediment Generated					Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rock and Large Broken Concrete ^1	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Total Quantity of Type L Generated	Total Quantity of Type M Generated	Reused in the Contract	Reused in other Projects	Open Sea Disposed	Metals	Paper / Cardboard Packaging	Plastics ^2	Chemical Waste		Others (e.g. general refuse) ^3
	(in '000m3)						(in '000m3)					(in '000kg3)			(in '000kg <sup>3</sup> )	(in '000L)	(in '000m3)
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUB-TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sep	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Oct	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dec																	
TOTAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

- Notes :
- (1) Broken concrete for recycling into aggregates;
  - (2) Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging materials;
  - (3) 1 full loaded dumping truck is assumed to be equivalent to 6.5m<sup>3</sup> by volume; and
  - (4) This waste flow table include C&D materials arising from Package B (FEP-03/558/2018).

## **ANNEX G**

### **CUMULATIVE STATISTICS ON EXCEEDANCES, ENVIRONMENTAL COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTION**

**TABLE G.1 CUMULATIVE STATISTICS ON EXCEEDANCES FOR FEP-01/558/2018/A**

Monitoring Parameter	Level of Exceedance	Total no. recorded in this reporting period <sup>(1)</sup>	Total no. recorded since project commencement
Marine Mammal (STG & ANI) (running quarterly)	Action	N/A	N/A
	Limit	N/A	N/A

**TABLE G.2 CUMULATIVE STATISTICS ON ENVIRONMENTAL COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS FOR FEP-01/558/2018/A**

Reporting Period	Cumulative Statistics		
	Environmental Complaints	Notification of Summons	Successful Prosecutions
This Reporting Period (1 to 30 Nov 2020)	0	0	0
Total no. recorded since project commencement	0	0	0

<sup>(1)</sup> Exceedances, which are non-project related, are not shown in this table.

**TABLE G.3 CUMULATIVE STATISTICS ON EXCEEDANCES FOR FEP-02/558/2018**

Monitoring Parameter	Level of Exceedance	Total no. recorded in this reporting period <sup>(1)</sup>	Total no. recorded since project commencement
Marine Water Quality (DO) (surface & middle)	Action Limit	N/A N/A	N/A N/A
Marine Water Quality (DO) (bottom)	Action Limit	N/A N/A	N/A N/A
Marine Water Quality (Turbidity) (depth-averaged)	Action Limit	N/A N/A	N/A N/A
Marine Water Quality (SS) (depth-averaged)	Action Limit	N/A N/A	N/A N/A

**TABLE G.4 CUMULATIVE STATISTICS ON ENVIRONMENTAL COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS FOR FEP-02/558/2018**

Reporting Period	Cumulative Statistics		
	Environmental Complaints	Notification of Summons	Successful Prosecutions
This Reporting Period (1 to 30 Nov 2020)	0	0	0
Total no. recorded since project commencement	0	0	0

<sup>(1)</sup> Exceedances, which are non-project related, are not shown in this table.

**TABLE G.5 CUMULATIVE STATISTICS ON EXCEEDANCES FOR FEP-03/558/2018**

Monitoring Parameter	Level of Exceedance	Total no. recorded in this reporting period <sup>(1)</sup>	Total no. recorded since project commencement
Marine Water Quality (DO) (surface & middle)	Action Limit	N/A N/A	N/A N/A
Marine Water Quality (DO) (bottom)	Action Limit	N/A N/A	N/A N/A
Marine Water Quality (Turbidity) (depth-averaged)	Action Limit	N/A N/A	N/A N/A
Marine Water Quality (SS) (depth-averaged)	Action Limit	N/A N/A	N/A N/A

**TABLE G.6 CUMULATIVE STATISTICS ON ENVIRONMENTAL COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS FOR FEP-03/558/2018**

Reporting Period	Cumulative Statistics		
	Environmental Complaints	Notification of Summons	Successful Prosecutions
This Reporting Period (1 to 30 Nov 2020)	0	0	0
Total no. recorded since project commencement	0	0	0

<sup>(1)</sup> Exceedances, which are non-project related, are not shown in this table.

## **ANNEX H**

### **TENTATIVE SCHEDULE FOR THE NEXT REPORTING PERIOD**

**Environmental Team Consultancy Services for the Hong Kong Offshore LNG Terminal Project  
Tentative Marine Mammal Monitoring Schedule (December 2020)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1/Dec	2/Dec	3/Dec	4/Dec	5/Dec
6/Dec	7/Dec	8/Dec	9/Dec	10/Dec	11/Dec	12/Dec
13/Dec	14/Dec	15/Dec	16/Dec	17/Dec	18/Dec	19/Dec
			Vessel Survey (SEL/SWL/Lamma)	Vessel Survey (SEL/SWL/Lamma)		
20/Dec	21/Dec	22/Dec	23/Dec	24/Dec	25/Dec	26/Dec
		Vessel Survey (SEL/SWL/Lamma)	Vessel Survey (SEL/SWL/Lamma)			
27/Dec	28/Dec	29/Dec	30/Dec	31/Dec		
	Vessel Survey (SEL/SWL/Lamma)	Vessel Survey (SEL/SWL/Lamma)				

Remarks: C-PODs (Cetacean-Propoise Detectors) have been deployed and will be serviced in accordance with the frequency as stipulated in the Updated EM&A Manual.  
 Each survey area is proposed to be surveyed twice per month.  
 SEL: Southeast Lantau; SWL: Southwest Lantau; Lamma: Lamma Island