

FORM 5
ENVIRONMENTAL IMPACT ASSESSMENT ORDINANCE
(CHAPTER 499)
SECTION 13(1)

Application for Variation of an Environmental Permit

PART A PREVIOUS APPLICATIONS

☒ No previous application for variation of an environmental permit.

☐ The environmental permit was previously amended.

Application No. :

PART B DETAILS OF APPLICANT

B1. Name : (person or company)

Castle Peak Power Company Limited

[Note : In accordance with section 13(1) of the Ordinance, the person holding an environmental permit or a person who assumes responsibility for the designated project may apply for variation of the environmental permit.]

B2. Business Registration No. :

(if applicable)

B3. Correspondence Address :

B4. Name of Contact Person :

B5. Position of Contact Person :

B6. Telephone No. :

B7. Fax No. :

B8. E-mail Address : (if any)

PART C DETAILS OF CURRENT ENVIRONMENTAL PERMIT

C1. Name of the Current Environmental Permit Holder :

Castle Peak Power Company Limited

C2. Application No. of the Current Environmental Permit : FEP-196/2019

C3. The Current Environmental Permit was Issued in : month / year

01 / 2020

Important Notes : Please submit the application together with
(a) 3 copies of this completed form; and
(b) appropriate fee as stipulated in the Environmental Impact Assessment (Fees) Regulation
to the Environmental Protection Department at the following address :

The EIA Ordinance Register Office,
27th floor, Southorn Centre, 130 Hennessy Road,
Wan Chai, Hong Kong.

☐ Tick (✓) the appropriate box



PART D PROPOSED VARIATIONS TO THE CONDITIONS IN CURRENT ENVIRONMENTAL PERMIT

D1. Condition(s) in the Current Environmental Permit :	D2. Proposed Variation(s) :	D3. Reason for Variation(s) :	D4. Describe the environmental changes arising from the proposed variation(s) :	D5. Describe how the environment and the community might be affected by the proposed variation(s) :	D6. Describe how and to what extent the environmental performance requirements set out in the EIA report previously approved or project profile previously submitted for this project may be affected :	D7. Describe any additional measures proposed to eliminate, reduce or control any adverse environmental impact arising from the proposed variation(s) and to meet the requirements in the Technical Memorandum on Environmental Impact Assessment Process :
<p>Condition 3.7</p> <p>No construction works for the section of subsea gas pipeline between South of Soko Islands and the jetty shall be carried out from 1900 hours to 0700 hours of the following day. Construction works for the subsea gas pipeline shall be carried out in accordance with the construction programme described in the pipeline construction plan approved under Condition 2.8.</p>	<p>Condition 3.7</p> <p>No dredging and jetting works for the section of subsea gas pipeline between South of Soko Islands and the jetty shall be carried out from 1900 hours to 0700 hours of the following day. Construction works for the subsea gas pipeline shall be carried out in accordance with the construction programme described in the pipeline construction plan approved under Condition 2.8.</p>	<p>According to the pipeline construction practice and analysis, suspension of pipelaying works may cause fatigue of the pipeline. This is an unsafe factor for the pipeline and laybarge.</p> <p>The touch down point, sagbend and overbend of pipeline shall be laid continuously and the position shall be replaced by subsequent pipes within a short period to prevent the pipes from metal fatigue damage.</p> <p>Meanwhile, rock armour is also recommended to be placed immediately after post-trenching. Any delay in rock placement will put the laid pipe at risk from potential anchor drop and drag damages by third parties.</p>	<p>Potential environmental impacts associated with the proposed changes to the working hours of construction work have been reviewed and no adverse environmental impacts are anticipated. No environmental changes are expected to arise from the proposed variation. Please refer to the attached materials for details.</p>	<p>Potential environmental impacts associated with the proposed changes to the working hours of construction work have been reviewed and no adverse environmental impacts are anticipated. No unacceptable impacts to the environment and the community resulting from the proposed variation are expected. Please refer to the attached materials for details.</p>	<p>The environmental performance requirements set out in the approved EIA Report will not be exceeded or violated. Please refer to the attached materials for details.</p>	<p>No additional measures are required.</p>

PART D PROPOSED VARIATIONS TO THE CONDITIONS IN CURRENT ENVIRONMENTAL PERMIT

D1. Condition(s) in the Current Environmental Permit :	D2. Proposed Variation(s) :	D3. Reason for Variation(s) :	D4. Describe the environmental changes arising from the proposed variation(s) :	D5. Describe how the environment and the community might be affected by the proposed variation(s) :	D6. Describe how and to what extent the environmental performance requirements set out in the EIA report previously approved or project profile previously submitted for this project may be affected :	D7. Describe any additional measures proposed to eliminate, reduce or control any adverse environmental impact arising from the proposed variation(s) and to meet the requirements in the Technical Memorandum on Environmental Impact Assessment Process :
		<p>It should be noted that the existing cables, marine park and shipping channel are concentrated in the restricted area, minimizing the work duration in these areas is considered best for all stakeholders.</p> <p>In addition, shortening the construction period would facilitate timely project completion which is important in securing adequate competitive gas supply capacity to support increased use of natural gas for electricity generation in Hong Kong to reduce carbon intensity.</p>				

PART E DECLARATION BY APPLICANT

E1. I hereby certify that the particulars given above are correct and true to the best of my knowledge and belief. I understand the environmental permit may be suspended, varied or cancelled if any information given above is false, misleading, wrong or incomplete.



Signature of Applicant



Full Name in Block Letters



Position

on behalf of Castle Peak Power Company Limited

Company Name and Chop (as appropriate)

29 DEC 2020

Date

NOTES :

1. A person who constructs or operates a designated project in Part I of Schedule 2 of the Ordinance or decommissions a designated project listed in Part II of Schedule 2 of the Ordinance without an environmental permit or contrary to the permit conditions commits an offence under the Ordinance and is liable to a maximum fine of \$5,000,000 and to a maximum imprisonment for 2 years.
2. A person for whom a designated project is constructed, operated or decommissioned and who permits the carrying out of the designated project in contravention of the Ordinance commits an offence and is liable to a maximum fine of \$5,000,000 and to a maximum imprisonment for 2 years.



Hong Kong Offshore LNG Terminal Project

Proposal of BPPS Pipelaying and Rock Armour Placement at Night
At the Restricted Area

EP Requirement

Condition 3.7 in the existing FEP-03/558/2018 stated that:

*“**No construction works** for the section of subsea gas pipeline between South of Soko Islands and the jetty shall be carried out from 1900 hours to 0700 hours of the following day. Construction works for the subsea gas pipeline shall be carried out in accordance with the construction programme described in the pipeline construction plan approved under Condition 2.8.”*

We would like to propose:

- Only **dredging and jetting works** for the section of subsea gas pipelines between South of Soko Islands and the jetty shall be restricted to be carried out from 1900 hours to 0700 hours of the following day.
- Such restriction is not required for pipelaying and rock armour placement works.

Reasons:

According to the pipeline construction practice and analysis, suspension of pipelaying works, especially in such frequency, may cause fatigue of the pipeline. This is an unsafe factor for the pipeline and laybarge.

To prevent the pipes from metal fatigue damage, the touch down point, sagbend and overbend of pipeline shall be laid continuously and the position shall be replaced by subsequent pipes within a short period.

Rock armour is also recommended to be placed immediately after post-trenching. Any delay in rock placement will put the laid pipe at risk from potential anchor drop and drag damages by third parties.

As existing cables, marine park and shipping channel are concentrated in the restricted area, minimizing the work duration in these areas is considered best for all stakeholders. The duration comparison is listed below:

Condition/Duration	BPPS Pipeline
Restricted pipelaying	~30 days
Normal pipelaying	~15 days
Restricted Rock Armor	~60 days
Normal Rock Armor	~30 days

The current proposal has been duly reviewed by an engineering consultant – Bureau Veritas who is a qualified professional body in the related discipline while the adoption of the current proposed method is chosen because other alternatives are found not viable.

Shortening the construction period would facilitate timely project completion which is important in securing adequate competitive gas supply capacity to support increased use of natural gas for electricity generation in Hong Kong to reduce carbon intensity.

The anchor model barge and DP model barge are two options for pipelaying, there will be only anchor model lay barge used at the restricted area and it will be used in the restricted area all the time without change.

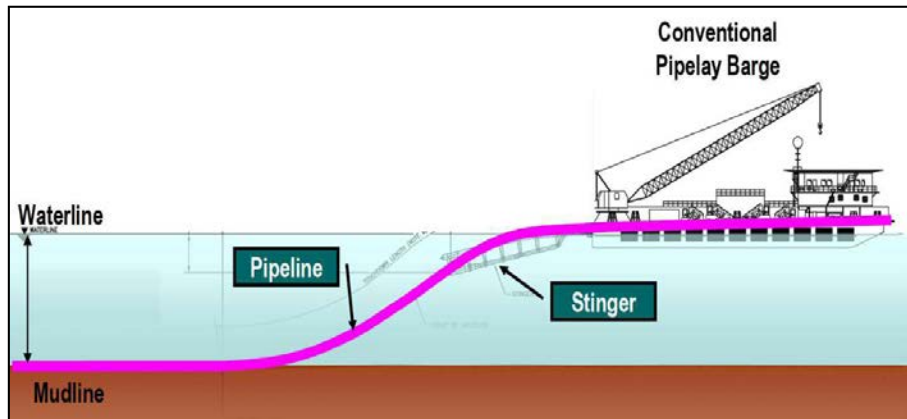
For Anchor Model Lay Barge (Option 1)

All anchoring works will be suspended from 1900 hours to 0700 hours of the following day and just carry out the simple pipelaying at night.

Laybarge will carry out normal pipelaying deck works which include lifting pipes to transition roller; preparation works include welding, moving barge as described in justification.

For Dynamic Positioning (DP) Model Lay Barge (Option 2)

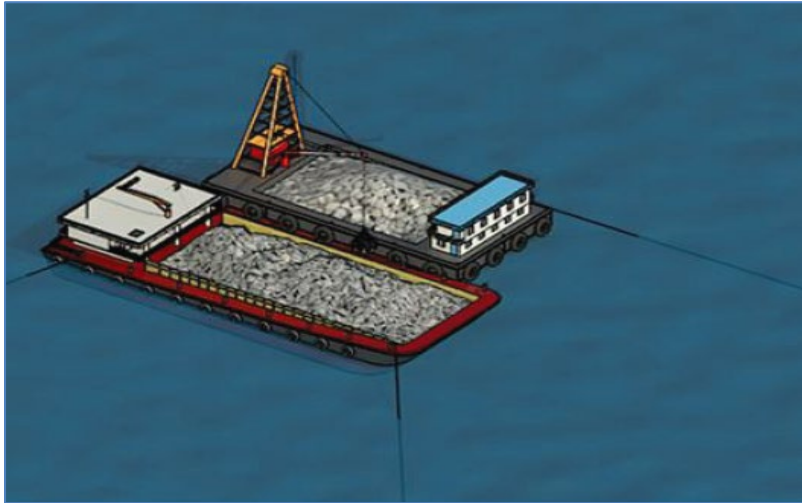
Laybarge will carry out normal pipelaying deck works which include lifting pipes to transition roller; preparation work include welding; moving barge as described in justification.



Marine warranty surveyor – DNVGL who is a qualified professional body in the related discipline has been engaged to review the pipelay barge model.

Rock Armour Placement Works

- Derrick barge will carry out normal rock armour placement works which include material transfer; barge positioning, and rock armour placement.



Comprehensive Review of Environmental Impact Associated with the Proposed Pipelaying and Rock Armour Placement at Night at the Restricted Area:

Potential Impacts	Associated with the Proposed Variation
Air Quality	x
Hazard to Life	x
Noise	x
Water Quality	x
Waste Management Implication	x
Ecology	✓
Fisheries	x
Visual	x
Cultural Heritage	x

Air Quality

- Refer to the approved EIA Report (AEIAR-218/2018) Section 4.5.1, “*Armour rock will be used for protection of the two subsea pipelines. Typically a derrick lighter or flat top barge will carry the armour rock stockpile and will move along the routes of the BPPS Pipeline and the LPS Pipeline. The stockpiling and handling of armour rocks has low potential to give rise to fugitive dust emissions.*” Hence, the proposed night-time rock armour placement works would not result in air quality impact.

Hazard to life

- Refer to EIA Report (AEIAR-218/2018) Section 5.3.1, “*It should be noted that during the construction of the Jetty and both subsea pipelines, LNG, natural gas and other dangerous goods will not be present other than for commissioning purposes. Therefore, construction phase associated risk has not been further assessed.*” and
- The proposed variation is only extending the day-time pipelaying and rock armour placement works to night-time period. No additional impact on hazard to life will be expected.

Noise

- Approved EIA Report (AEIAR-218/2018) - Noise (Section 6.6.1, p.6-9): “As no NSRs were identified within the 300m Assessment Area and the nearest representative NSRs are located approximately 1.3km away from the Project’s construction works sites, adverse noise impacts due to the construction activities are not anticipated.”
- Noise sensitive receivers (NSRs) identified in the EIA is over 1000m from the works area, noise impact from the pipelaying and rock armour is considered negligible. Moreover, a Construction Noise Permit will be applied for the machines and vessels to be used for the proposed night-time works.

Water Quality

- Refer to the approved EIA Report (AEIAR-218/2018) Section 7.7.1, table 7.12, “*Rock would be placed above the pipelines for protection for all section of pipelines. It should be noted that the placement of rock armour will be controlled to ensure the rock is placed at the right location for appropriate level of protection. Therefore, the level of disturbance to seabed from the placement works would be limited. Furthermore, rock armour contains negligible amount of fine contents and is not expected to result in notable change in water quality which exceeds the level predicted for pipeline trenching works.*”
- Impact of rock armour placement works was identified as above-mentioned and the proposed variation only involves extension of the day-time works to night-time period, hence no invalidation of the finding in the approved EIA Report (AEIAR-218/2018).

Waste Management Implication

- Refer to the approved EIA Report (AEIAR-218/2018) Section 8.3.2, “*About 0.84Mm³ and 0.26Mm³ of rock is required to be imported as pipeline protection material (rock armour) for the BPPS Pipeline and the LPS Pipeline, respectively. Based on the construction programme, approximately 10 and 4 barge trips per day are required to deliver the rock to the floating storage barge along the BPPS Pipeline and the LPS Pipeline, respectively, during the pipeline construction period*”
- No additional impact was predicted as the proposed works only extended the day-time works to night-time period. Hence the proposed rock armour placement works will not invalidate the finding in the approved EIA Report (AEIAR-218/2018).

Ecology

- It has been stated in Section 2.8.1 in the approved EIA Report for the Project (Register No. AEIAR-218/2018) that:
 - Pipeline construction activities may need to operate on a 24 hours basis wherever practicable to shorten the overall duration of construction.
 - Night-time works are expected for pipeline construction for safety reasons, as it is important to minimise the duration of works in these areas to also prevent risk to vessels and high speed ferries in these busy channels.
 - To mitigate potential disturbance to Finless Porpoise (FP), pipeline dredging/ jetting works are recommended to take place for 12 hours during daytime period (0700-1900) for South of Soko Islands to LNG Terminal along the BPPS Pipeline and LNG Terminal to South of Shek Kwu Chau along the LPS Pipeline.
- Relevant text in approved EIA Report:
 - Section 2.8.1 Pipeline Construction Sequencing (p.2-63)
 - *“Dredgers and jetting machines may need to operate on a 24 hours basis wherever practicable to shorten the overall duration of the pipeline construction works. This scheduling measure has been considered for jetting and dredging of the BPPS Pipeline and the LPS Pipeline routes where appropriate. To address environmental impacts, measures such as working time on a 12 hours basis only have also been considered where appropriate for pipeline jetting and dredging works.”*
 - *“For other activities associated with the pipeline construction, i.e. **pipe-laying and the placement of armour rock protection** may also operate on a 24 hour basis if appropriate and needed. Neither of these works activities is anticipated to cause adverse impacts to the marine environment.”*

Ecology

- Relevant text in approved EIA Report:
 - Section 9.6.1 Potential Impacts & Impact Assessment on Marine Mammals – Construction Phase (p.9-89):
 - “BPPS Pipeline construction works (with the exception described below considering impact on FP) will be carried out 24 hours a day to minimize the total works duration. This is especially necessary for the BPPS Pipeline sections that crosses the Urmston Road Channel and Adamasta Channel and adjacent to the Lantau Channel Traffic Separation Scheme for safety reasons, as it is important to minimise the duration of works in these areas to also prevent risk to vessels and high speed ferries in these busy channels. It is not expected that night time works will have any significant impact on CWD. As a mitigation measure, considering the moderate to high ecological value of the waters from North of Tai O to Fan Lau to CWD, pipeline dredging/ jetting will avoid the peak months of dolphin calving (May and June).”
 - “Findings from the EIA showed that FP exhibited the tendency for greater activity in late hours at night and very early hours at surveyed locations compared to daylight hours. Consequently to mitigate potential disturbance to FP especially in waters of moderate ecological importance, i.e. South of Soko Islands to LNG Terminal along the BPPS Pipeline, and LNG Terminal to South of Shek Kwu Chau along the LPS Pipeline, pipeline dredging/ jetting works are recommended to be scheduled to take place for 12 hours during daytime period (0700-1900) with marine mammal exclusion zone monitoring. Pipeline dredging/ jetting works for the remainder of the LPS Pipeline would proceed with marine mammal exclusion zone monitoring for 24 hours a day to minimize the total works duration. No unacceptable impact to FP is expected given the low ecological importance of these waters to the species and the effective implementation of 24-hour marine mammal exclusion zone monitoring.”

Ecology

- Section 9.11.3 Specific Measures for Marine Mammals/Marine Parks (Table 9.47, p.9-133):

Impact	Mitigation Measures
Construction Phase	
Temporary habitat loss and disturbance for the construction of BPPS Pipeline	<ul style="list-style-type: none">Pipeline dredging/ jetting works between North of Tai O and Fan Lau will avoid the peak months of CWD calving (May and June).Pipeline dredging / jetting works between South of Soko Islands and the LNG Terminal will be restricted to a daily maximum of 12 hours with daytime (0700 – 1900) operations.
Temporary habitat loss and disturbance for the construction of LPS Pipeline	<ul style="list-style-type: none">Pipeline dredging/ jetting from LNG Terminal to South of Shek Kwu Chau will be restricted to a daily maximum of 12 hours with daytime (0700 – 1900) operations.

- Based on above, **only dredging and jetting works** should be restricted to be conducted during the daytime period (0700-1900), pipelaying and rock armour placement works are not required to be included.
- As work barge is slow-moving and the pipelaying/rock armour placement activity would not generate underwater sound that acoustically interfere significantly with porpoises, unacceptable impacts are not expected.

Fisheries

- The following impacts were identified in Sections 10.5.1 of the approved EIA Report (AEIAR-218/2018).
 - *Direct disturbances of fisheries habitat and fishing ground;*
 - *Underwater sound generated from marine construction activities;*
 - *Perturbations to key water quality parameters from marine construction activities; and*
 - *Changes in water quality from discharges and runoff from land-based and jetty topside construction activities, and pipeline hydrotesting.*

With respect to inland fish culture activities, construction activities of the Project will not have any direct impacts, such as drawdown of water table, disturbance or restriction, on these activities. Considering the large separation distance, indirect impacts from construction activities, including perturbation to water quality and underwater sound, will be negligible. Consequently, no unacceptable impacts to inland culture fisheries are expected.

- No additional impact was predicted as the proposed works only extended the day-time works to night-time period. Hence the proposed rock armour placement works will not invalidate the finding in the approved EIA Report (AEIAR-218/2018).

Visual

- The proposed pipelaying and rock dumping activities are underwater activities, hence no impact on visual will be expected.

Cultural Heritage

- The rock armour placement works only aligned on the proposed subsea pipeline, no impact on cultural heritage will be expected.

- No dredging and jetting works shall be carried out from 1900 hours to 0700 hours of the following day.
- Existing relevant mitigation measures as recommended in the approved EIA Report will be maintained, which include but not limited to:
 - 250m Marine Mammal Exclusion Zone during dredging and jetting works
 - All vessels will comply with speed restriction of 10 knots in the construction work areas and in areas with high CWD and FP usage.
 - The working vessels will be equipped with tracking devices to record their operating speeds and marine travel routes during construction of the Project.

Nighttime Pipelaying & Rock Armour Placement

- The proposed changes have been evaluated to consider whether the change in construction methods may constitute a material change to a designated project or to an environmental impact (Section 6 of the EIAO-TM refers).
- The evaluation results are summarised below:

Item	Requirement	Evaluation	Material Change?
6.1(a)	A change to physical alignment, layout or design of the project causing an environmental impact likely to affect existing or planned community, ecologically important areas or sites of cultural heritage.	The proposed variation is only extending the day-time pipelaying and rock armour placement works to night-time period, it will not result in a change to physical alignment, layout or design of the project.	No
6.1(b)	A physical change resulting in an increase in the extent of reclamation or dredging affecting water flow or quality likely to affect ecologically important areas, or disrupting sites of cultural heritage.	The proposed change will not result in an increase in dredging extent.	No

Nighttime Pipelaying & Rock Armour Placement

Item	Requirement	Evaluation	Material Change?
6.1(c)	An increase in pollution emissions or discharges or waste generation likely to violate guidelines or criteria in this technical memorandum without mitigation measures in place.	Emissions (e.g. SS elevation, release of sediment-bounded contaminants) due to the proposed nighttime pipelaying and armour placement works are same as daytime operation. No impacts beyond those predicted in approved EIA report are anticipated.	No
6.1(d)	An increase in throughput or scale of the project leading to physical additions or alterations that are likely to violate the guidelines or criteria in this technical memorandum without mitigation measures in place.	The proposed nighttime works will not result in a change to the throughput and scale of the Project.	No

Nighttime Pipelaying & Rock Armour Placement

Item	Requirement	Evaluation	Material Change?
6.1(e)	A change resulting in physical works that are likely to affect a rare, endangered or protected species, or an important ecological habitat, or a site of cultural heritage.	No impacts beyond those predicted in the approved EIA Report are anticipated to occur on rare, endangered or protected species, or an important ecological habitat, or site of cultural heritage due to proposed nighttime works.	No

Nighttime Pipelaying & Rock Armour Placement

Item	Requirement	Evaluation	Material Change?
6.2	The environmental impact of a designated project, for which an environmental permit has been issued, is considered to be materially changed if the environmental performance requirements set out in the EIA report for this project may be exceeded or violated, even with the mitigation measures in place.	Impact of pipelaying and rock armour placement works was reviewed as above-mentioned in slide 6-13, the proposed variation only involves extension of the day-time pipelaying and rock armour placement works to night-time period, environmental performance requirements set out in the EIA report are not anticipated to be exceeded or violated, hence there is no material changes is expected.	No

Conclusion:

It is considered that the proposed changes will not lead to a material change to the designated project, or an environmental impact in accordance with Sections 6.1 and 6.2 of the EIAO-TM, respectively. As such, the proposed changes are considered as conforming to the information and requirements set out in the approved EIA Report.

Proposed variation to the respective FEP for works during construction

Condition 3.7 of FEP-03/558/2018 :

~~“No construction works~~ No dredging and jetting works for the section of subsea gas pipeline between South of Soko Islands and the jetty shall be carried out from 1900 hours to 0700 hours of the following day. Construction works for the subsea gas pipeline shall be carried out in accordance with the construction programme described in the pipeline construction plan approved under Condition 2.8.”