



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

Additional Gas-fired Generation Units Project – Installation of One Additional Gas-fired Generation Unit (CCGT Unit No.1) at the Black Point Power Station

Priority Plant Report for the First Year of
Additional CCGT Commissioning

18 August 2022

Project No.: 0368878

Document details	
Document title	Additional Gas-fired Generation Units Project – Installation of One Additional Gas-fired Generation Unit (CCGT Unit No.1) at the Black Point Power Station
Document subtitle	Priority Plant Report for the First Year of Additional CCGT Commissioning
Project No.	0368878
Date	18 August 2022
Version	1
Author	RC
Client Name	Castle Peak Power Company Limited

Document history

Version	Revision	Author	Reviewed by	ERM approval to issue		Comments
				Name	Date	
Draft	1	RC	JN	JN	18.8.2022	-

**Installation of One Additional Gas-fired Generation Unit (CCGT Unit No. 1)
at the Black Point Power Station
Environmental Certification Sheet
EP-507/2016/D**

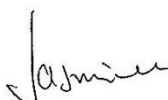
Reference Document/Plan

Document/Plan to be Certified/ Verified:	Priority Plant Report for the First Year of Additional CCGT Commissioning
Date of Report:	18 August 2022
Date prepared by ET:	18 August 2022
Date received by IEC:	


Reference EM&A Manual/ EP Requirement

EP Condition:	Condition No. 2.6
Content:	<i>Priority Plant Report for the First Year of Additional CCGT Commissioning</i>
<p>After the commencement of the operation of each of Unit No.1 and Unit No.2, the Permit Holder shall report to the Director on twelve months basis for the first three years of operation with the information to demonstrate that the CCGT Units have been operated as a priority plant during the reporting period. The reporting shall be made within three months of the end of each reporting period.</p>	

ET Certification

I hereby certify that the above referenced document / plan complies with the above referenced condition of EP-507/2016/D.	
Dr Jasmine Ng, Environmental Team Leader:	Date: 18 August 2022
	

IEC Verification

I hereby verify that the above referenced document / plan complies with the above referenced condition of EP-507/2016/D.	
Mr Thomas Chan, Independent Environmental Checker:	Date: 25 August 2022
	

Signature Page

18 August 2022

Additional Gas-fired Generation Units Project – Installation of One Additional Gas- fired Generation Unit (CCGT Unit No.1) at the Black Point Power Station

Priority Plant Report for the First Year of Additional CCGT
Commissioning



Dr Jasmine Ng
Office Managing Partner

ERM-Hong Kong, Limited
2509, 25/F One Harbourfront,
18 Tak Fung Street,
Hung Hom, Kowloon
Hong Kong

© Copyright 2022 by ERM Worldwide Group Ltd and / or its affiliates ("ERM").
All rights reserved. No part of this work may be reproduced or transmitted in any form,
or by any means, without the prior written permission of ERM

CONTENTS

1. INTRODUCTION	1
1.1 Background.....	1
1.2 Purpose of this Report	1
2. PRIORITY PLANT	3
2.1 Definition	3
2.2 D1 Operation.....	3
3. CONCLUSIONS	4

List of Figures

Figure 1.1 Indicative Location of Additional CCGT Units

List of Tables

Table 2.1 Operating Hours of Major CLP Generation Units in Hong Kong from 1 June 2021 to 31 May 2022 3

1. INTRODUCTION

1.1 Background

The Castle Peak Power Company Limited (CAPCO) is a joint venture between CLP Power Hong Kong Limited (CLP) and China Southern Power Grid Company Limited with CLP as the operator. ERM-Hong Kong, Limited (ERM) and Mott MacDonald Hong Kong Limited were appointed by CAPCO as the Environmental Team (ET) and the Independent Environmental Checker (IEC), respectively, to undertake the Environmental Monitoring and Audit (EM&A) activities for the installation of CCGT Units No.1 and No. 2 of the Additional Gas-fired Generation Units Project at the Black Point Power Station (BPPS) (“the Project”).

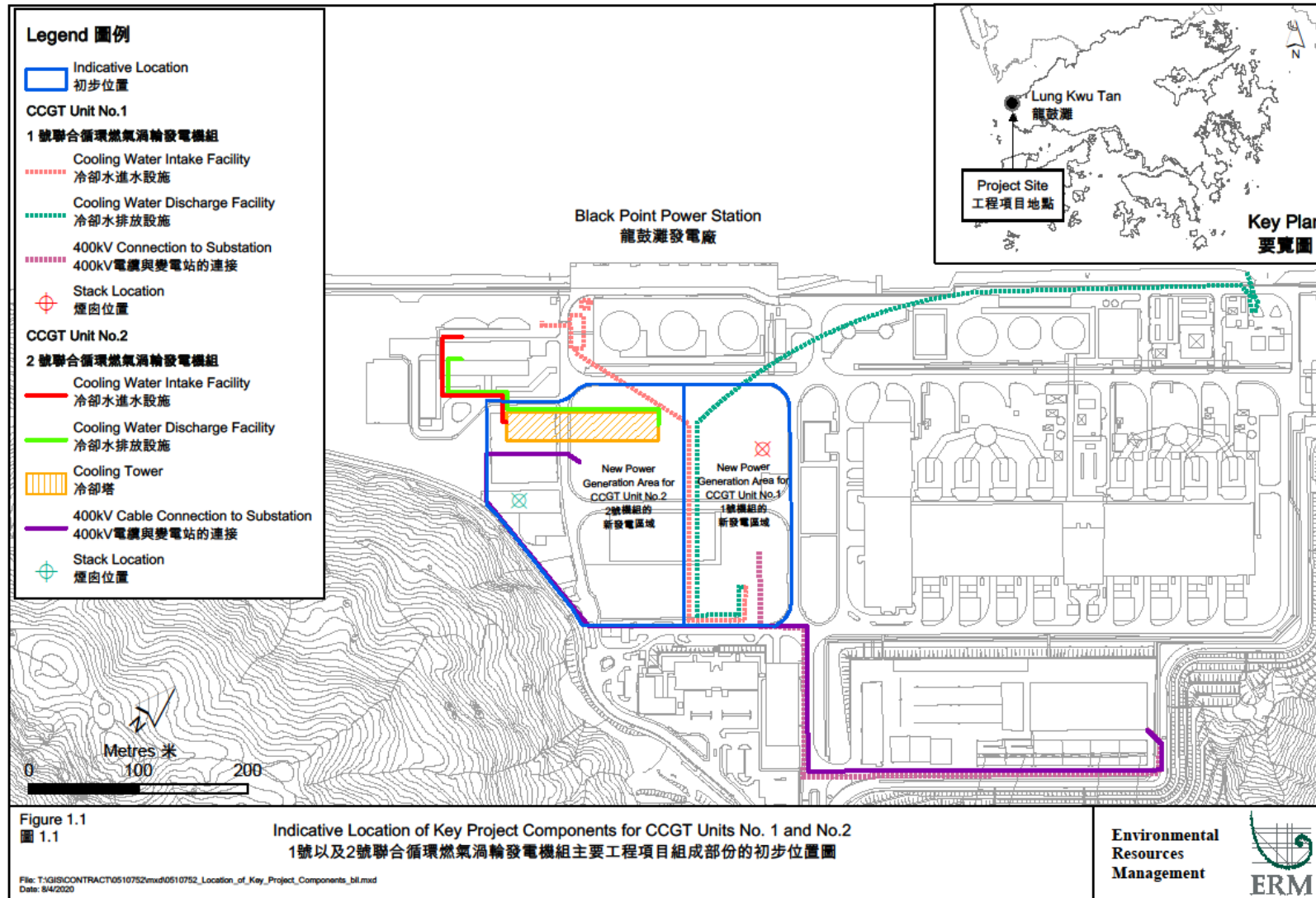
The scope of the Project involves the phased construction and operation of up to two additional combined cycle gas turbine (CCGT) units (with an installed capacity of up to 1,200 MW) at the BPPS. The additional generation units will be of CCGT configuration using natural gas as the primary fuel. It is a Designated Project under the *Environmental Impact Assessment Ordinance* (Cap. 499) (EIAO). The current EM&A Programme includes both the CCGT Units No. 1 (D1) and No. 2 (D2). The location plan of key Project components for CCGT Units No. 1 and No. 2 is shown in **Figure 1.1**.

An Environmental Impact Assessment (EIA) Report of the Additional Gas-fired Generation Units Project (Register No. AEIAR-197/2016) was approved in June 2016. An Environmental Permit (EP-507/2016) (EP) for CCGT Unit No. 1 was issued in June 2016. The EP had been varied and the latest varied EP (EP-507/2016/D) was issued on 21 December 2021.

1.2 Purpose of this Report

As per Condition 2.6 of the EP, the Permit Holder (CAPCO) is required to report to the Director of Environmental Protection (DEP) on twelve months basis for the first three years of operation with information to demonstrate that the CCGT Units have been operated as a priority plant. The purpose of this *Priority Plant Report for the First Year of Additional CCGT Commissioning* is to demonstrate that the CCGT Units have been operated as a priority plant during the first year of operation (i.e. 1 June 2021 to 31 May 2022).

Priority Plant Report for the First Year of Additional CCGT Commissioning



2. PRIORITY PLANT

2.1 Definition

A generation unit is considered a priority plant if it is dispatched in priority of other available generation units. A priority plant, under normal situations, will be dispatched as far as practicable and topped up by other available generation units to meet the required electricity generation demand. A priority plant will therefore be put into operation for a longer period of time compared with other available generation units. Operating hours of a generation unit in a year is thus a good indicator of whether it is a priority plant or not.

2.2 D1 Operation

In the approved EIA Report, the operation phase air quality impact assessment was conducted based on the assumption that the additional CCGT unit(s) would be operated as a priority plant over all available generation units in BPPS and Castle Peak Power Station (CPPS). Under normal situation, D1 is operated as priority plant for dispatch and topped up by other available generation units to meet the required electricity generation demand.

Operating hours of different generation units are reported to the government on annual basis. As discussed in **Section 2.1**, a priority plant will be utilised for longer hours in a year compared with other units, and thus its operating hours would be higher than that of other units in a year. There were 8760 hours within the reporting period (i.e. 1 June 2021 to 31 May 2022). The total operating hours of major CLP generation units in Hong Kong are shown in **Table 2.1** in descending order below. D1 has the highest operating hours among all major CLP generation units, having operated 84% of the time during the reporting period.

D1 has therefore been operating as a priority plant among all major CLP generation units during the reporting period.

Table 2.1 Operating Hours of Major CLP Generation Units in Hong Kong from 1 June 2021 to 31 May 2022

Major Generation Unit	Operating Hours
D1	7,323 (84%)
C8	6,520 (74%)
C3	6,344 (72%)
C5	6,109 (70%)
C4	6,044 (69%)
C6	5,589 (64%)
C1	5,351 (61%)
C7	5,069 (58%)
C2	4,896 (56%)
B4	4,561 (52%)
B3	4,268 (49%)
B1	3,731 (43%)
B2	2,408 (27%)
CPA ⁽¹⁾	734 (8%)

Note:

(1) The data for CPA units were grouped to report due to the low utilisation of each unit.

3. CONCLUSIONS

This *Priority Plant Report for the First Year of Additional CCGT Commissioning* presents the operating hours of major CLP generation units recorded from 1 June 2021 to 31 May 2022.

The information provided has demonstrated that D1 has been operating as a priority plant during the first year of operation, in accordance with Condition 2.6 of the EP of the Project.

ERM has over 160 offices across the following countries and territories worldwide

Argentina	New Zealand
Australia	Norway
Belgium	Panama
Brazil	Peru
Canada	Poland
China	Portugal
Colombia	Puerto Rico
France	Romania
Germany	Russia
Hong Kong	Singapore
Hungary	South Africa
India	South Korea
Indonesia	Spain
Ireland	Sweden
Italy	Switzerland
Japan	Taiwan
Kazakhstan	Thailand
Kenya	UAE
Malaysia	UK
Mexico	US
Myanmar	Vietnam
The Netherlands	

ERM-Hong Kong, Limited

2509, 25/F One Harbourfront
18 Tak Fung Street
Hunghom
Kowloon
Hong Kong

T: +852 2271 3000

F: +852 3015 8052

www.erm.com