



Summary of Carbon Footprint for Listed Companies 上市公司碳足跡摘要

Part 1 Reporting Entity Information 第一部分 報告機構資料	
1.1 Company information 公司資料	
Name of reporting entity: 報告機構名稱:	Eng: The Hong Kong and China Gas Company Limited 中文: 香港中華煤氣有限公司
Stock code: 股份代號:	00003
Hang Seng Industry Classification 恆生行業分類 (HSIC) (Please see Appendix / 請參考 附件):	
(i) Industry: (e.g. Financials – 50) 行業: (例如: 金融業 – 50)	40
(ii) Sector: (e.g. Banks – 501) 業務類別: (例如: 銀行 – 501)	400
1.2 Basis of information reported in this form (e.g. weblink(s) to the carbon audit report, GHG accounting report, Environmental, Social and Governance report (ESG report) or sustainability report (GHG emission-related chapter) of the reporting entity, etc) 報告內容的基礎 (例如: 報告機構的碳審計報告、溫室氣體排放核算報告、「環境、社會及管治報告」或可持續發展報告(與溫室氣體排放有關的章節)之網絡連結等):	
1. The Hong Kong and China Gas Company Limited Annual Report 2016 (Link: https://www.towngas.com/getmedia/866bcd86-b8ea-441d-8c60-04d265a12481/AR2016-Eng_Full.pdf.aspx?ext=.pdf) 2. The Hong Kong and China Gas Company Limited Sustainability Report 2016 (Link: https://www.towngas.com/getmedia/9bc8b39f-2517-4842-862a-1fb2a82de91e/TGSD_FullReport_2016_en.pdf.aspx?ext=.pdf) 一. 香港中華煤氣有限公司年報2016 (連結: https://www.towngas.com/getmedia/3b88399d-1483-4510-943d-ef5d1286f114/AR2016-Chi_Full.pdf.aspx?ext=.pdf) 二. 香港中華煤氣有限公司可持續發展報告2016 (連結: https://www.towngas.com/getmedia/985e2b44-6a00-4386-87f7-d761bdc2ea84/TGSD_FullReport_2016_tc.pdf.aspx?ext=.pdf)	

Part 2 Greenhouse Gas (GHG) Emissions 第二部分 溫室氣體排放		
2.1 GHG Emission Data 溫室氣體排放數據		
Reporting period (yyyy/m/d): 報告期(年/月/日):	2016/1/1 to/至 2016/12/31	
GHG Accounting Standard / Guideline: 溫室氣體核算標準 / 指引:	<input checked="" type="checkbox"/> EPD/ EMSD Guidelines 環境保護署/ 機電工程署指引 <input checked="" type="checkbox"/> GHG Protocol 溫室氣體議定書 <input checked="" type="checkbox"/> International Organization for Standardization (ISO) 14064 國際標準化組織 (ISO) 14064 <input type="checkbox"/> Others, please specify: (其他, 請說明:)	
Operational boundary 營運邊界 ¹ :	Brief description on emission sources 排放來源簡述	Emission data 排放數據
Scope 1 範圍 1:	Fuel consumption of production plants, vehicle fleets and etc. 生產廠房及車隊的燃料使用	~ 859,000 tonnes CO ₂ -e 公噸二氧化碳當量
Scope 2 範圍 2:	Electricity consumption of production plants, offices, customer centres, gas filling stations and datacenters etc. 生產廠房、辦公室、客戶中心、加氣站及數據中心等地方的電力使用	~ 399,000 tonnes CO ₂ -e 公噸二氧化碳當量
Scope 3 範圍 3:		tonnes CO ₂ -e 公噸二氧化碳當量
Reported GHG emissions in total: 所報告的溫室氣體排放總和:	~ 1,258,000 tonnes CO ₂ -e / 公噸二氧化碳當量	
2.2 Company related information 與公司有關的資料		
Total number of full-time-equivalent employees of the entity(s) covered in the reported GHG emission data during the reporting period: 報告期內溫室氣體排放數據所涵蓋機構的相等於全職僱員總人數:		<u>n/a</u>
Total gross floor area owned/controlled by the entity(s) covered in the reported GHG emission data during the reporting period (m ²): 報告期內溫室氣體排放數據所涵蓋機構擁有/ 控制的總樓面面積(平方米):		<u>n/a</u>
Total revenue of the entity(s) covered in the reported GHG emission data during the reporting period (HK\$ million): 報告期內溫室氣體排放數據所涵蓋機構的總收入(百萬港元):		<u>n/a</u>
Other information which is relevant to the entity's business operations covered in the reported GHG emissions during the reporting period, please specify (e.g., total no. of passengers, total no. of customers, total unit of goods produced, total no. of hotel rooms occupied, total kWh electricity generated, or total measures of freight load, etc.): 報告期內溫室氣體排放數據所涵蓋機構的其他有關營運資料, 請說明 (例如: 乘客總人數、顧客總人數、製成產品總數量、酒店入住房間總數、總發電量(千瓦/小時)或貨運總量等):		<u>n/a</u>
2.3. Geographical coverage of reported GHG emission data 所報告的溫室氣體排放數據地域範圍:		
<input checked="" type="checkbox"/> Operations within Hong Kong 香港以內的營運 <input checked="" type="checkbox"/> Operations outside Hong Kong (Please specify city(ies)/country(ies)): <u>China, Thailand</u> 香港以外的營運 (請說明城市/國家名稱): <u>中國, 泰國</u> Please also specify the percentage of GHG emissions arising from Hong Kong operations: 請同時說明由香港營運所產生的溫室氣體百分比: <u>~ 30%</u>		
<input checked="" type="checkbox"/> Subsidiaries 附屬公司	Please list out the subsidiaries covered in the GHG emission data during the reporting period: 請列出報告期內溫室氣體排放數據所涵蓋的附屬公司: Please refer to the annual report 2016. Subsidiaries of 1083 are also covered in 0003 GHG emission data, and the equity share of 1083 by 0003 is applied for calculation.	

Additional information on physical boundary in relation to GHG emission reported (if applicable):
與所報告的溫室氣體排放數據相關之建築物邊界的附加資料(如適用):

Part 3 GHG Emission Reduction Measures, Future Initiatives and Targets
第三部分 減少溫室氣體排放的措施、未來計劃及目標

3.1 GHG emission reduction measures implemented during the Reporting Period*
在報告期內減少溫室氣體排放的措施*

No. 列序	GHG Emission Reduction Measures 減少溫室氣體排放的措施
1.	<p>The treated syngas from the NENT landfill site fuels the combined heat and power generating system installed in Alice Ho Miu Ling Nethersole Hospital. The system not only supplied electricity, but also generated thermal byproducts that will produce steam and hot water for use in the hospital.</p> <p>It is expected that gas consumption in the Hospital can be decreased by about 25% with the application of the CHP Generating System, and the annual carbon emissions also reduced by about 2,000 tons, equivalent to 86,620 trees' CO2 absorption per year, which accounts for 12% of the Hospital's total emissions.</p> <p>雅麗氏何妙齡那打素醫院應用新界東北堆填區經處理的合成氣，作為熱電聯供系統的燃料。該系統不但可供應電力，產生的餘熱也可轉為蒸汽和熱水供醫院使用。</p> <p>使用熱電聯供系統後，醫院內的煤氣使用量預計可下降大約四份之一；而每年二氧化碳排放量亦能減少約2,000噸，相當於種植86,620棵樹的每年吸碳量，佔醫院整體排放量的12%。</p>
2.	<p>Adjusted the chilled water supply temperature and replaced lighting in lift lobbies, pantries and warehouses with LED lights at headquarters.</p> <p>在總部大樓調節水冷式機組的溫度，以及在大堂、茶水間和貨倉改用 LED 照明設備。</p>
3.	<p>Carbon Reduction Competition is one of our major initiatives for improving the Company's environmental performance in mainland China. In 2016, we broadened the scope of the competition to include carbon reduction projects from our Hong Kong operations. We welcomed a total of 27 entrants, which resulted in annual savings of 64,500 tonnes of carbon emissions.</p> <p>One of our projects came from Suzhou Industrial Park Qingyuan Hong Kong & China Water Company Limited (Qingyuan Hua Yan). The business owns two water treatment plants and provides fresh water for the surrounding area. Qingyuan Hua Yan utilised Big Data Platform to develop a mathematical model which maximises the water supply energy efficiency at two plants. By comparing the individual water supply quantity and the respective power consumption under different water supply levels, Qingyuan Hua Yan was able to determine the plants' optimum output profiles with the lowest possible power consumption</p> <p>內地項目減碳比賽是煤氣公司在內地每年推行的主要環保項目之一，旨在提升公司的環保表現。我們於2016年將比賽範圍擴展至香港，共收到27個減碳方案，減碳量達64,500噸。</p> <p>其中一個項目由蘇州工業園區清源華衍水務有限公司(簡稱「清源華衍」)提出及實行。該公司設有兩座污水處理廠，並為區內供水。清源華衍利用「智慧水務大數據平台」，進行數據分析，設法提高兩座廠房供水的能源效益。清源華衍比較兩座廠房在不同供水情況下個別供水量以及相應所消耗的能源，藉此為廠房釐定最適切的產量組合，將能源消耗減至最低。</p>

3.2 GHG emission reduction measures for future initiatives and targets*
為未來計劃及目標而制訂的減少溫室氣體排放措施*

No. 列序	Future Initiatives 未來計劃	Target GHG Reduction (Qualitative/ Quantitative) 減排目標 (性質/ 數量)
1.	<p>To optimise the operation of the lift system at Towngas Headquarters.</p> <p>提高總部大樓升降機的能源效益。</p>	<p>To improve energy efficiency at headquarters.</p> <p>減低總部大樓的耗電量。</p>

2.	<p>The construction of Tseung Kwan O South East New Territories (SENT) Landfill Gas Utilisation Project completed and will be commissioned in 2017 .</p> <p>Landfill gas will be treated and transported to a regulating station in Tseng Lan Shue, where it will be subsequently added to the town gas supply network.</p> <p>位於將軍澳的新界東南堆填區沼氣應用項目的設施興建完成，預計在2017年投產。經處理的堆填區沼氣將輸送至井欄樹調壓站，然後注入煤氣供應網絡。</p>	<p>This project will be one of the largest energy conservation and emission reduction environmental projects in Hong Kong. It is expected that 56,000 tonnes CO2 would be reduced each year; equivalent to 2.4 million trees' CO2 absorption per year.</p> <p>此項目將會是香港大型的環保項目之一。預計每年可減少排放 56,000 噸二氧化碳，相當於種植240萬棵樹的每年吸碳量。</p>
3.	<p>To replace existing hand dryers with more energy efficient models.</p> <p>將現有乾手機更換為更節能的型號。</p>	<p>To reduce paper towel usage and save energy</p> <p>減少抹手紙用量並節省能源。</p>

**Please use separate sheet(s) where the space provided in the form is not sufficient 如表格內提供的空位不足夠, 請另加紙張填寫*

Part 4 Verification
第四部分 核證

4.1 Verification information 核證資料

<p>Has verification² been conducted? 是否曾經進行核證？</p>	<p><input type="checkbox"/> Yes – please fill in the blanks below 是 – 請填寫以下空格 <input checked="" type="checkbox"/> No 否</p>
<p>Verification body 核證機構:</p>	
<p>Verification standard: 核證標準:</p>	<p><input type="checkbox"/> International Organization for Standardization (ISO) 14064-3:2006 - Greenhouse gases - Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions 國際標準化組織 (ISO) 14064-3:2006 – 溫室氣體 - 第3部分：溫室氣體確定的證實和驗證的規範與指南</p> <p><input type="checkbox"/> Others, please specify: 其他 (請說明):</p>
<p>Date of verification (yyyy/m/d): 核證日期 (年/月/日):</p>	
<p>Remarks (e.g. various verification status for different subsidiaries): 備註(例如: 各附屬公司的核證情況):</p>	

¹ GHG emissions (direct and indirect) and removals in relation to the buildings can be broadly classified into three separate scopes as below –

- Scope 1 – direct emissions and removals;
- Scope 2 – energy indirect emissions; and
- Scope 3 – other indirect emissions.

The definitions of Scopes 1, 2 and 3 emissions can be found in the “Guidelines to Account for and Report on Greenhouse Gas Emissions and Removals for Buildings (Commercial, Residential or Institutional Purposes) in Hong Kong (2010 Edition)”

與建築物有關的溫室氣體排放 (直接或間接) 及減除，可概括分為以下三個不同的範圍 –

- 範圍 1 -- 直接溫室氣體排放及減除；
- 範圍 2 -- 使用能源間接引致的溫室氣體排放；以及
- 範圍 3 -- 其他間接溫室氣體排放。

有關溫室氣體排放範圍 1、2及3的定義，可參照《香港建築物 (商業、住宅或公共用途) 的溫室氣體排放及減除的核算和報告指引》(2010年版)

² The reporting entity is encouraged to carry out verification of the GHG emissions by an independent verifier. Independent verification of GHG emissions can facilitate the management to have better understanding of the carbon footprint of the company’s operation and identify areas for improvement, provide credibility and quality assurance on the disclosure of carbon footprint, and enhance the corporate image in respect of transparency and accountability. In December 2012, the Hong Kong Accreditation Service (HKAS) introduced accreditation service for ISO 14064 GHG validation and verification for validation/verification bodies’ voluntary application. Accredited validation/verification bodies’ technical competence is rigorously assessed by HKAS, so that the reliability of their results can be assured. Relevant HKAS-accredited validation/verification bodies, once available, will be announced at HKAS’s website at:

<http://www.itc.gov.hk/en/quality/hkas/hkcas/about.htm>.

我們鼓勵報告機構聘請獨立核證人核證溫室氣體排放，溫室氣體排放的獨立核證能促使管理層對公司營運引致的碳足跡有更佳的了解，並找出可作改善的地方；此舉亦為所披露的碳足跡資料提供可信性和質量保證，在透明度和問責層面提升企業形象。2012年12月香港認可處就 ISO 14064 審定和核推推出認可服務，供審定/核查機構自願申請。獲認可審定/核查機構的技術能力由香港認可處進行嚴格評審，因此能確保其審定/核查結果更為可靠。當有獲香港認可處認可的相關審定/核查機構，將在香港認可處網站公布：<http://www.itc.gov.hk/ch/quality/hkas/hkcas/about.htm>。

Hang Seng Industry Classification 恒生行業分類**Industry 行業**

Energy 能源業 – 00
Materials 原材料業 – 05
Industrials 工業 – 10
Consumer Goods 消費品製造業 – 20
Consumer Services 消費者服務業 – 30
Telecommunications 電訊業 – 35
Utilities 公用事業 – 40
Financials 金融業 – 50
Properties & Construction 地產建築業 – 60
Information Technology 資訊科技業 – 70
Conglomerates 綜合企業 – 80

Sector 業務類別

Oil & Gas 石油及天然氣 – 001
Coal 煤炭 – 002
Gold & Precious Metals 黃金及貴金屬 – 051
Diversified Metals & Minerals 一般金屬及礦石 – 052
Basic Materials 原材料 – 053
Industrial Engineering 工業工程 – 101
Industrial Transportation 工用運輸 – 102
Commercial & Professional Services 工用支援 – 103
Automobiles 汽車 – 201
Household Goods & Electronics 家庭電器及用品 – 202
Textiles, Clothing & Personal Care 紡織、服飾及個人護理 – 203
Food & Beverages 食物飲品 – 204
Healthcare 醫療保健 – 205
Agricultural Products 農業產品 – 206
Retailers 零售 – 301
Hotels, Casinos & Leisure Facilities 酒店、賭場及消閒設施 – 302
Media & Entertainment 媒體及娛樂 – 303
Transportation 運輸 – 304
Support Services 支援服務 – 305
Telecommunications 電訊 – 350
Utilities 公用事業 – 400
Banks 銀行 – 501
Insurance 保險 – 502
Other Financials 其他金融 – 503
Properties 地產 – 601
Construction 建築 – 602
IT Hardware 資訊科技器材 – 701
Software & Services 軟件服務 – 702
Semiconductors 半導體 – 703
Conglomerates 綜合企業 – 800

Source: Hang Seng Indexes (<http://www.hsi.com.hk/HSI-Net/HSI-Net>)

來源: 恆生指數 (<http://www.hsi.com.hk/HSI-Net/HSI-Net>)