



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: POWER ASSETS HOLDINGS LIMITED 中文: 電能實業有限公司
Stock code: 股份代號:	6
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 – 5010) 業務類別: (例如: 銀行 – 5010)	4000
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):	
PAH's Sustainability Report 2020: https://www.powerassets.com/en/sustainability/sustainability-reports/year-2020	

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):	2020/01/01 to/至 2020/12/31	
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 checked="" type="checkbox"/> Others, please specify: (其他, 請說明:), IEA's Energy Statistics Manual, US EPA's Emission Factors for Greenhouse Gas Inventories	
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:	Electricity Generation, Transmission and Distribution. Gas Transmission & Distribution. Energy-from-waste facilities. Oil pipelines & storage facilities.	6,771,988 tonnes CO ₂ -e 公噸二氧化碳當量
Scope 2 範圍 2:	Scope 2 emissions includes the emissions from purchased electricity of our businesses for its own use. It also includes the emissions from energy losses from distribution grid and the electricity system transmission grid ("network losses") for our electricity distribution companies, including UKPN, SAPN, VPN, Wellington Electricity and United Energy.	1,232,683 tonnes CO ₂ -e 公噸二氧化碳當量
Scope 3 範圍 3:	Not reported.	N/A 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:	8,004,671 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:		16,614 <u>exclude contract staff</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>1,270</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>Total energy consumption: 27,072,650 MWh</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)): 香港以外的營運 (請說明城市/國家名稱):		
Canada, Unites States of America, United Kingdom, Netherlandm, Mainland China, Thailand, Australia, New Zealand		

Please also specify the percentage of GHG emissions arising from Hong Kong operations: $(7.19 \times 10^6) \times 0.3337 / 8,004,671 =$
請同時說明由香港營運所產生的溫室氣體百分比: 29.97%

<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: The Hongkong Electric Co., Ltd. UK Power Networks Nothrn Gas Networks Wales & West Utilities Seabank Power SA Power Networks Victoria Power Networks Australian Gas Networks CK William Australian Energy Operations Jinwan Power Dali Wind Power Laoting Wind Power Ratchaburi Power Company Canadian Power Holdings Husky Midstream Limited Partnership Dutch Enviro Energy Holdings B.V. Wellington Electricity Lines
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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>Power Assets is on track with its decarbonisation plan and has reduced 2,485 MW of its coal-fired power generation capacity compared with that of June 2017. The following projects have been completed or are ongoing:</p> <ol style="list-style-type: none"> 1. HK Electric's new highly-efficient combined-cycle gas-fired generating unit equipped with a selective catalytic reduction (SCR) system, known as L10, was commissioned in February 2020. Compared with 2019, the carbon emission from electricity generation in 2020 was reduced by about 16% with L10 in operation. 2. Canadian Power is converting its 2x400 MW Sheerness power plant from coal to natural gas firing. The conversion of the first unit was completed in 2020 and the second unit is due to be completed in 2021.
2.	<p>Power Assets is working actively with industry peers along the entire product chain and policymakers to demonstrate and promote hydrogen as a reliable, clean and safe fuel for achieving the net zero targets set by various jurisdictions. The following hydrogen projects are being carried out by our gas distribution businesses:</p> <p>H21, a collaborative gas industry programme led by NGN, entered its 2nd phase in 2020. The project is now focused on delivering two key pieces of evidence, the ability to maintain a hydrogen network safely and the successful conversion of a small part of the live network to use 100% Hydrogen. This work is being undertaken at Spadeadam, with the construction of a micro-network, where an isolated section of the live network is to be converted. Testing is due to commence in early 2021. Ultimately, this work aims to provide the assurances required by UK Government that a decarbonised heating network converting from natural gas to 100% hydrogen is safe and cost-effective.</p> <p>HyDeploy – a 16-month live demonstration of up to a 20% blend of hydrogen into the natural gas network is taking place on Keele University's private gas network. This project is due to finish in March 2021 and will be succeeded by a 2nd trial, HyDeploy2. This trial will see up to a 20% blend of hydrogen provided to 670 properties connected to NGN's gas network. The project is due to commence blending in April 2021 running for 10 months in total. HyDeploy will provide evidence that the gas networks and existing domestic appliances can be used safely with a blend of hydrogen, with little or no cost or disruption implications to the customer. The ultimate goal is to replace natural gas by 100% hydrogen to achieve zero emission in our heating network.</p>
3.	

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.	The Group is committed to reducing emissions of GHG and other air pollutants within its operations and supporting the move to a low-carbon future through innovation and adoption of the latest technology and processes alongside environmentally-friendly energy sources.	Our target is to reduce our coal-fired generation installed capacity from about 50% of our total generation portfolio in July 2017 to about 22% post 2023.
2.	HK Electric is building two more new gas-fired units (L11 and L12) with schedule to be commissioned in 2022 and 2023 respectively.	Increase natural gas fuel mix to 70% by 2023

3.		
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**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 Renewable Energy 第四部分 可再生能源		
4.1 Feed-in Tariff (FiT) Scheme 上網電價計劃		
Has your company joined the FiT Scheme? 是否已參與上網電價計劃?	<input type="checkbox"/> Yes – please fill in the blanks below 是 – 請填寫以下空格 <input checked="" type="checkbox"/> No 否	
Renewable Technology (Generation Capacity) 可再生能源技術 (發電容量)	<input checked="" type="checkbox"/> Solar 太陽能 (1,730 kW 千瓦) <input checked="" type="checkbox"/> Wind 風能 (56,940 kW 千瓦) <input checked="" type="checkbox"/> Others (Please Specify) 其他(請註明) Energy from waste (incineration) and Landfill gas (176,800 kW 千瓦)	
4.2 Renewable Energy (RE) Certificate 可再生能源證書		
Has/Have RE Certificate(s) been purchased? 有否購買可再生能源證書?	<input type="checkbox"/> Yes – please fill in the blanks below 有 – 請填寫以下空格 <input checked="" type="checkbox"/> No 沒有	
Purchased from 購自	The Hongkong Electric Co., Ltd 香港電燈有限公司 <input type="checkbox"/>	CLP Power Hong Kong Ltd 中華電力有限公司 <input type="checkbox"/>
Amount of Electricity Purchased 購買的電量	kWh 千瓦時	kWh 千瓦時

Part 5 Verification 第五部分 核證	
5.1 Verification information 核證資料	
Has verification² been conducted? 是否曾經進行核證？	<input checked="" type="checkbox"/> Yes – please fill in the blanks below 是 – 請填寫以下空格 <input type="checkbox"/> No 否
Verification body 核證機構:	Hong Kong Quality Assurance Agency (HKQAA)
Verification standard: 核證標準:	<input checked="" 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
	<input type="checkbox"/> Others, please specify: 其他 (請說明):
Date of verification (yyyy/m/d): 核證日期 (年/月/日):	2021/2/19
Remarks (e.g. various verification status for different subsidiaries): 備註(例如: 各附屬公司的核證情況):	Only GHG emissions inventory of The Hongkong Electric Co., Ltd. was verified by HKQAA

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:

https://www.itc.gov.hk/en/quality/hkas/conformity_assessment_bodies/hkcas.html.

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好的了解, 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

查推出認可服務，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：
https://www.itc.gov.hk/en/quality/hkas/conformity_assessment_bodies/hkcas.html。

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 Discretionary 非必需性消費 – 23
Consumer Staples 消費者服務業 – 25
Healthcare 醫療保健業 – 28
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 – 0010
Coal 煤炭 – 0020
Gold & Precious Metals 黃金及貴金屬 – 0510
Diversified Metals & Minerals 一般金屬及礦石 – 0520
Basic Materials 原材料 – 0530
Industrial Engineering 工業工程 – 1010
Industrial Transportation 工用運輸 – 1020
Commercial & Professional Services 工用支援 – 1030
Automobiles 汽車 – 2310
Household Goods & Electronics 家庭電器及用品 – 2320
Textiles, Clothing 紡織及服飾 – 2330
Travel & Leisure 旅遊及消閒設施 – 2340
Media & Entertainment 媒體及娛樂 – 2350
Support Services 支援服務 – 2360
Specialty Retail 專業零售 – 2370
Food & Beverages 食物飲品 – 2510
Agricultural Products 農業產品 – 2520
Consumer Staple Retailers 消費者主要零售商 – 2530
Pharmaceuticals & Biotechnology 藥品及生物科技 – 2810
Healthcare Equipment & Services 醫療保健設備和服務 – 2820
Telecommunications 電訊 – 3500
Utilities 公用事業 – 4000
Banks 銀行 – 5010
Insurance 保險 – 5020
Other Financials 其他金融 – 5030
Properties 地產 – 6010
Construction 建築 – 6020
IT Hardware 資訊科技器材 – 7010
Software & Services 軟件服務 – 7020
Semiconductors 半導體 – 7030
Conglomerates 綜合企業 – 8000

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>)