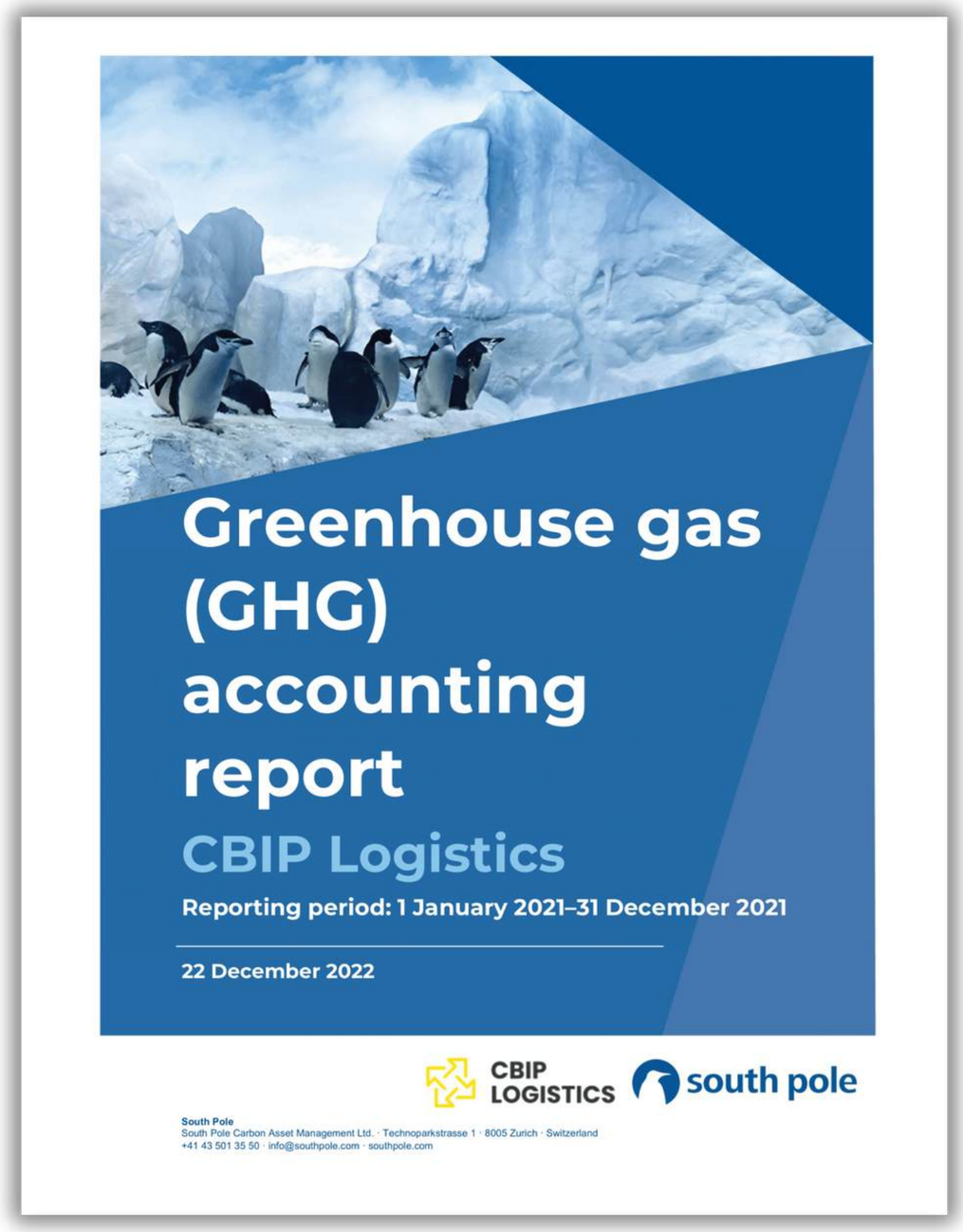
You may notice a mismatch in our branding on this report:

We recently rebranded from **CBIP Logistics** to **Wayfindr**.

This report was published before we rebranded.

To find out more about our brand, go over ot wayfindr.io



wayfindr™

Next Page for Report

Greenhouse gas (GHG) accounting report

CBIP Logistics

Reporting period: 1 January 2021–31 December 2021

22 December 2022

CBIP LOGISTICS

south pole

South Pole
South Pole Carbon Asset Management Ltd. · Technoparkstrasse 1 · 8005 Zurich · Switzerland
+41 43 501 35 50 · info@southpole.com · southpole.com

Details

Prepared for:

Chris Crutchley, Director of Finance
CBIP Logistics
Hong Kong
chris.crutchley@cbiplogistics.com · www.cbiplogistics.com

Prepared by:

South Pole Carbon Asset Management Ltd. (South Pole)
Technoparkstrasse 1 · 8005 Zurich · Switzerland
southpole.com

Project Manager:

Dwi Nurseptian, Associate Consultant
d.nurseptian@southpole.com

Project Leader:

Pinandito Wisambudi, Consultant
p.wisambudi@southpole.com

Collaborator:

Tiara Irianti, Analyst
t.irianti@southpole.com

Contact person:

Chris Wei, Senior Business Development Associate
z.wei@southpole.com ·

Table of contents

List of tables

Table of figures

Acronyms and abbreviations

4PL	fourth-party logistics
AC	air conditioner
AR4	Fourth Assessment Report
BEIS	Department for Business, Energy and Industrial Strategy
CBIP	CBIP Logistics
CH_4	methane
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
dayWFH	days working from home
FTE	full-time equivalent
g	gram
GHG	greenhouse gas
GJ	gigajoule
GRI	Global Reporting Initiative
GWP	global warming potential
HFCs	hydrofluorocarbons
IATA	International Air Transport Association
IEA	International Energy Agency
IPCC	Intergovernmental Panel on Climate Change
KPI	key performance indicator
kWh	kilowatt-hour
km	kilometre
N_2O	nitrous oxide
PFCs	perfluorocarbons
pkm	passenger-kilometre
SF_6	sulphur hexafluoride
t	tonne
tkm	tonne kilometre
T&D	transmission and distribution
WTT	well-to-tank

Executive summary

This report compiles the results of the first full greenhouse gas (GHG) accounting undertaken for CBIP Logistics (CBIP) for the calendar year 2021. Calculations were based on data provided by CBIP in 2021.

Table 1 shows the key performance indicators (KPIs), expressed as the total emissions for each KPI in metric tonnes of carbon dioxide equivalent (tCO_2e). All facilities operated in Hong Kong, Vietnam, the Philippines, the United States, Taiwan, Singapore, Australia, China, the United Kingdom and the Netherlands are included within the scope of this report.

Table 1: Summary of key performance indicators

Number of full-time equivalent (FTE) employees	9.92	**tCO_2e/FTE**	558.44
Weight covered (t)	11,169.19	**tCO_2e/t**	0.50
Freight distance travelled (kilometres [km])	5,003,717.14	**tCO_2e/km**	0.001
Number of orders delivered*	245,601.00	**tCO_2e/order**	0.02

(Source: South Pole, based on CBIP, 2022)

* Excludes the Catherine vendor as this data was unavailable.

In 2021, CBIP's GHG emissions amounted to **5,539.77** tCO_2e, with scope 2 emissions comprising 1.10 tCO_2e of this figure and scope 3 totalling 5,538.67 tCO_2e. There was no activity from CBIP that could contribute to direct scope 1 emissions.

Table 2: Greenhouse gas emissions by emission source

Scope	Emissions (tCO_2e)	% of total
Scope 1: direct GHG emissions	0.00	0.00
Scope 2: indirect GHG emissions from purchased electricity, heating and cooling	1.10	0.02
Gross emissions without contractual instruments	1.10	0.02
Avoided emissions from contractual instruments[1]	0.00	0.00
Scope 3: other indirect GHG emissions	5,538.67	99.98
Total GHG emissions	**5,539.77**	**100.00**

(Source: South Pole, based on CBIP, 2022)

[1] 'Contractual instruments' refers to renewable energy purchase instruments and contracts such as Renewable Energy Certificates, renewable power contracts, power purchase agreements and GoldPower offsets.

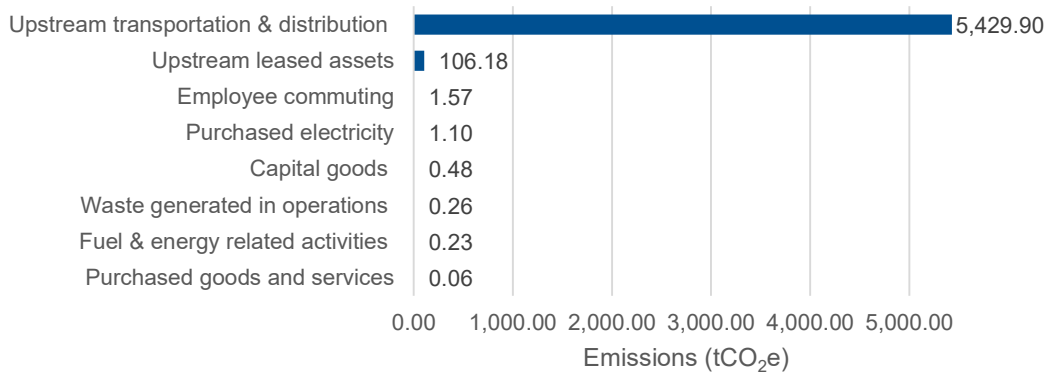


Figure 1: Greenhouse gas emission sources in 2021

(Source: South Pole, based on CBIP, 2022)

Analysis of the footprint results highlights the following key points:

- CBIP's operational GHG footprint is mainly driven by upstream transportation and distribution (98.02%);
- sea freight is the biggest contributor to emissions from upstream transportation and distribution (44.45%), followed by air freight (28.42%) and land freight (27.13%);
- in terms of suppliers, Catherine's sea freight contributes the most emissions at 44.38%, followed by Kerry's air freight (25.77%) and NTL's road freight (22.36%); and
- based on CBIP's clients, R&F's activities in the UK and Europe contribute the most freight emissions at 27.57%, with Noissue as the second most at 26.11% and CGI Vietnam in third at 22.36%.

1 Introduction

This report provides a summary of the GHG emissions from CBIP's operations from 1 January–31 December 2021.

CBIP is a fourth-party logistics provider, offering freight and third-party warehousing services to suppliers and manufacturers with worldwide operations in 10 countries. CBIP's objective is to identify major emission sources and GHG reduction opportunities within its business operations. For this purpose, South Pole is supporting CBIP with developing a GHG inventory and by providing a high-level analysis of its major GHG hotspots.

Company information and the reporting period are presented in Table 3.

Table 3: Company information

Company information	
Website	www.cbiplogistics.com
Business area	Logistics
Reporting period	1 January 2021–31 December 2021

(Source: South Pole, based on CBIP, 2022)

1.1 Methodology

The GHG accounting and reporting procedure is based on the 'Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard – Revised Edition' ('GHG Protocol') and the complementary 'Corporate Value Chain (Scope 3) Accounting and Reporting Standard', the most widely used international accounting tools for government and business leaders to understand, quantify and manage GHG emissions. The standards were developed in partnership between the World Resources Institute and the World Business Council for Sustainable Development.

The accounting was based on the following principles of the 'GHG Protocol':

- **Relevance:** an appropriate inventory boundary that reflects the GHG emissions of the company and serves the decision-making needs of users;
- **Completeness:** accounting that includes all emission sources within the chosen inventory boundary. Any specific exclusion is disclosed and specified;
- **Consistency:** meaningful comparison of information over time and transparent documentation of any changes to the data;
- **Transparency:** data inventory sufficiency and clarity where relevant issues are addressed in a coherent manner; and
- **Accuracy:** minimised uncertainty and avoided systematic over- or under-quantification of GHG emissions.

1.2 System boundaries

1.2.1 Organisational boundaries

System boundaries were defined by the operational control approach, i.e. covering all entities where CBIP has operational control. Table 4 shows the offices and warehouses that were included in the GHG accounting.

Table 4: Offices and warehouses included in the 2021 greenhouse gas accounting

Country	Office/warehouse
Hong Kong	Office
Vietnam	Office
Philippines	Virtual office
Hong Kong	Warehouse
Vietnam	Warehouse
China	Warehouse
Taiwan	Warehouse
Australia	Warehouse
Singapore	Warehouse
US	Warehouse
Netherlands	Warehouse
UK	Warehouse

(Source: South Pole, based on CBIP, 2022)

1.2.2 Operational boundaries

Under the 'GHG Protocol', emissions are divided into 'direct' and 'indirect' emissions. Direct emissions are those originating from sources either owned or controlled by the reporting entity, whereas indirect emissions are generated as a consequence of the reporting entity's activities, yet occur at sources owned or controlled by another entity.

Direct and indirect emissions are divided into three scopes, as found below.

1.2.2.1 Scope 1

Scope 1 includes all carbon emissions that can be directly managed by the organisation (i.e. direct GHG emissions). This includes emissions from the combustion of fossil fuels in mobile and stationary sources (e.g. owned or controlled boilers, power generators and vehicles), carbon emissions generated by chemical and physical processes and fugitive emissions from the use of cooling and air conditioning (AC) equipment. CBIP did not have emission sources that could produce scope 1 emissions in the year 2021. Further details of this are reflected in Table 5.

Table 5: Overview of scope 1 emission sources for 2021

Category	Emission source	Boundary
Stationary combustion	Generation of electricity and heat	Not applicable
Mobile combustion	Company-owned or leased vehicles	Not applicable
Physical or chemical processing	Manufacture or processing of chemicals and materials	Not applicable
Fugitive emissions	Emissions from the use of cooling systems and AC equipment and leakage from CO_2 tanks or methane (CH_4) tubes	Not applicable

(Source: Name, Year)

1.2.2.2 Scope 2

Scope 2 includes indirect GHG emissions from the generation of electricity, steam, heat or cooling purchased by the organisation from external energy providers. Table 6 gives an overview of the emission sources considered in scope 2.

Table 6: Overview of scope 2 emission sources for 2021

Category	Emission source	Boundary
Electricity	Purchased electricity	Included
Steam	Purchased steam	Not applicable
District heating	Purchased district heating	Not applicable
District cooling	Purchased district cooling	Not applicable

(Source: Name, Year)

1.2.2.3 Scope 3

Scope 3 includes other indirect emissions, such as emissions from the extraction and production of purchased materials and services, vehicles not owned or controlled by the reporting entity, outsourced activities and waste disposal, among others.

According to the 'GHG Protocol', companies shall separately account for and report on emissions from scopes 1 and 2. Scope 3 accounting is optional but doing so is considered best practice and is a requirement when, for example, setting science-based targets, 'Climate Neutral' labels or declarations.

Table 7 gives an overview of the emission sources considered in scope 3.

Table 7: Overview of scope 3 emission sources for 2021

Category	Emission source	Boundary
Purchased goods and services	Purchased goods (i.e. raw materials) and services	Included
Capital goods	Production of capital goods (e.g. machinery and IT equipment)	Included

Category	Emission source	Boundary
Fuel- and energy-related activities	Upstream life cycle emissions from fuel and electricity generation, including transmission and distribution (T&D) losses	Included
Upstream transportation and distribution	Transportation and distribution of goods and services to the company	Included
Waste generated in operations	Waste management of operational waste (e.g. landfilling and recycling)	Included
Business travel	Travel and accommodation of employees/contractors	Not applicable
Employee commuting	Employee travel between home and work	Included
Upstream leased assets	Operation of assets leased by the organisation (the lessee) in the reporting year and not included in scopes 1 or 2	Included
Downstream transportation and distribution	Transportation and distribution of products sold by the organisation	Not applicable
Processing of sold products	Processing of intermediate products sold by the organisation	Not applicable
Use of sold products	Use of sold goods that require energy to operate	Not applicable
End-of-life treatment of sold products	Waste disposal and treatment of sold products	Not applicable
Downstream leased assets	Operation of assets owned by the company (the lessor), leased to other entities and not included in scopes 1 or 2	Not applicable
Franchises	Operation of franchises not included in scopes 1 or 2	Not applicable
Investments	Operation of investments not included in scopes 1 or 2	Not applicable

(Source: Name, Year)

1.3 Data inventory and assumptions

Table 8 summarises all data provided by CBIP, including additional notes as to whether assumptions are needed to calculate emissions and recommendations for future data collection activity.

Table 8: Data inventory summary

Category	Activity data provided	Recommendations for data quality improvement
Purchased electricity	Leased and total site area; base building electricity consumption	N/A
Purchased goods and services	Physical data of paper consumption and cloud services	Capture all purchased goods and services data. If the consumption is paid by CBIP, then it should be included in CBIP's GHG inventory.
Capital goods	Physical data (two laptops)	N/A
Fuel- and energy-related activities	Primary data on CBIP's share of purchased electricity	N/A
Upstream transportation and distribution	Weight of cargo; origin and destination city and/or country; type of vehicle; vehicle capacity; partial fuel type data; number of deliveries; month; client/supplier information for all freights	• Collect the exact address of origin and destination city, providing postal code information at a minimum. • Include laden information. • Collect International Air Transport Association (IATA) code information for air freight. • Sea freight emissions can be broken down further into monthly data for a more granular data analysis.
Waste generated in operations	An assumption was used to estimate the waste generated	Provide actual waste generation data, which can be collected from the landlord or waste management company. Include more granular information on the type of waste, e.g. paper, metal or food waste.
Employee commuting	Employee commuting survey with details on office locations, the distance from home to the office, the mode of transportation and days spent working from home	N/A
Upstream leased assets	• List of leased assets, with details on the warehouse country, site name, total site area and the leased area. • Base building district cooling for some facilities and monthly electricity consumption. • Client and supplier information.	N/A

(Source: South Pole, based on CBIP, 2022)

Overall, the data inventory, emission factors and assumptions used are based on the 'GHG Protocol'. The choice of assumptions and emission factors followed a conservative approach. Unless otherwise specified, all emission values in this report are given in tCO_2e.

Where inventory activity data was lacking, extrapolations and estimations were made. A complete overview of activity data, extrapolations and estimations can be found in (Source: Name, Year)

Annex II.

1.4 Global warming potential

Global warming potential (GWP) is a measure of the climate impact of a GHG compared to CO_2 over a time horizon. GHG emissions have different GWP values depending on their efficiency at absorbing longwave radiation and the atmospheric lifetime of the gas. The GWP values used in GHG accounting include the six GHGs covered by the United Nations Framework Convention on Climate Change and the Kyoto Protocol and blends of these, as presented in Table 9. These are the GWP used by the Department for Business, Energy and Industrial Strategy (BEIS) and are based on the Intergovernmental Panel on Climate Change (IPCC) 'Fourth Assessment Report' (AR4). Although the 'Fifth Assessment Report' is more recent, it has not been implemented internationally by all stakeholders.

Table 9: Applied global warming potentials

GHG	GWP (100 years)
Carbon dioxide (CO_2)	1
Methane (CH_4)	25
Nitrous oxide (N_2O)	298
Hydrofluorocarbons (HFCs)	See IPCC AR4 – Table 2.14
Perfluorocarbons (PFCs)	See IPCC AR4 – Table 2.14
Sulphur hexafluoride (SF_6)	22,800

(Source: IPCC AR4, 2007)

2 Results

2.1 Overall results

Based on the information provided by CBIP, the GHG emissions total for 2021 was 5,539.77 tCO_2e. A summary breakdown of emission sources is available in Table 11, while a summary of GHG emissions according to the Global Reporting Initiative (GRI) is provided in Table 10. A visual summary of emission hotspots can be seen in Figure 2.

'Total emissions' in this report refers to the emissions sources covered, as described in Section 1. Please note that, due to the rounding of numbers, figures may not add up exactly to the total provided.

Table 10: Key figures according to the Global Reporting Initiative

GRI G4	GRI Standards	Topic	Quantity	Unit
G4-EN3	302-1	Direct energy consumption by primary source	0	GJ
G4-EN3	302-1	Indirect energy consumption by primary source: grid electricity	9.77	GJ
G4-EN15	305-1	Direct GHG emissions (scope 1)	0.00	tCO_2e
G4-EN16	305-2	Energy indirect GHG emissions (scope 2)	1.10	tCO_2e
G4-EN17	305-3	Other indirect GHG emissions (scope 3)	5,538.67	tCO_2e
G4-EN18	305-4	GHG emissions per employee	558.45	tCO_2e per employee

(Source: South Pole, based on CBIP, 2022)

Table 11: Greenhouse gas emissions by scope and activity for 2021

Activity	Consumption	Unit	Emissions (tCO_2e)	Percentage of total (%)
Scope 1: direct GHG emissions			**0.00**	**0.00**
Scope 2: indirect GHG emissions from purchased electricity, heating and cooling			**1.10**	**0.02**
Electricity		**kWh**	**1.10**	**0.02**
Grid (market-based)	1,356.50	kWh	1.10	0.02
Grid (location-based)	1,356.50	kWh	1.10	0.02
Scope 3: other indirect GHG emissions			**5,538.67**	**99.98**
Purchased goods and services			**0.06**	**<0.01**
Paper	500.00	g	<0.01	<0.01
Unspecified	500.00	g	<0.01	<0.01
Cloud services	30.75	users	0.06	<0.01

Activity	Consumption	Unit	Emissions (tCO_2e)	Percentage of total (%)
Capital goods			**0.48**	**0.01**
IT equipment	2.00	no. of devices	0.48	0.01
Laptops	2.00	no. of devices	0.48	0.01
Employee commuting			**1.57**	**0.03**
Walk	1,131.30	km	0.00	0.00
Train	135.40	pkm	0.01	<0.01
Motorbike	2,188.27	km	0.32	0.01
Ferry	384.66	pkm	0.05	<0.01
Car	769.32	km	0.17	<0.01
Bus	135.40	pkm	0.02	<0.01
Teleworking	1,284.00	dayWFH	1.00	0.2
Upstream transportation and distribution			**5,429.90**	**98.02**
Sea freight	54,711,016.14	tkm	2,413.85	43.57
Road freight			1,472.96	26.59
Scooter delivery	9,268,626.60	km	1,342.51	24.23
In-person delivery	11,664.00	pkm	0.89	0.02
Truck delivery	1,017,420.80	tkm	129.56	2.39
Air freight	1,355,590.05	tkm	1,543.09	27.85
Waste generated in operations	**0.73**	**t**	**0.26**	**<0.01**
General waste	0.73	t	0.26	<0.01
Upstream leased assets	**148,473.50**	**kWh**	**106.18**	**1.92**
Renewable electricity	22,828.94	kWh	0.57	0.01
Grid electricity	115,571.54	kWh	95.60	1.73
District cooling	10,073.00	kWh	10.02	0.18
Fuel and energy-related activities			**0.23**	**<0.01**
Well-to-tank (WTT) and T&D	1,356.50	kWh	0.23	<0.01
Electricity	1,356.50	kWh	0.23	<0.01
Total GHG emissions			**5,539.77**	**100.00**

(Source: South Pole, based on CBIP, 2022)

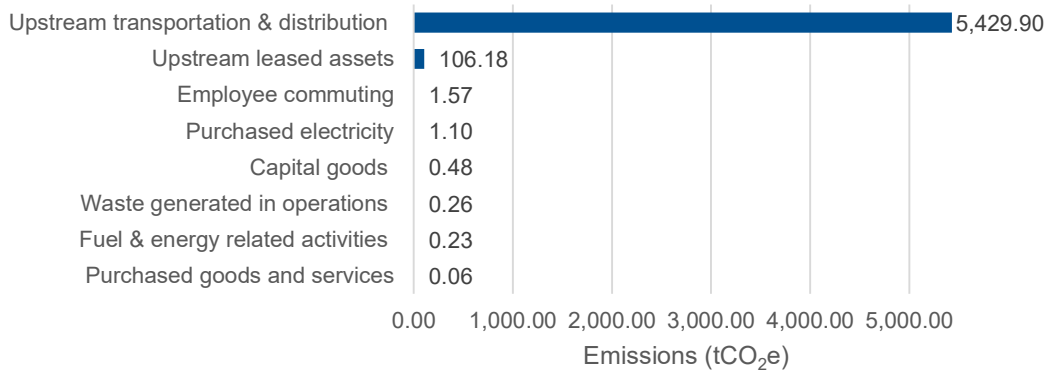


Figure 2: Greenhouse gas emissions for 2021 by source

(Source: South Pole, based on CBIP, 2022)

2.2 Key hotspots analysis

2.2.1 Freight analysis

Based on the information provided by CBIP, upstream transportation and distribution accounted for around 98% of CBIP's total GHG emissions in 2021, contributing **5,429.90 tCO_2e**. In this section, this category is broken down further to understand the different activities contributing to CBIP's emissions.

Sea freight accounts for most of CBIP's emissions, producing 2,413.85 tCO_2e in 2021 or 44.45% of the total freight emissions for the year. This is followed by air freight at 28.42% and road freight at 27.13%. The breakdown of each mode of freight by month is provided in

Table 12 and Figure 3 and Figure 4. Freight emissions between August and December 2021 were higher than previous months due to the increased number of deliveries within those months.

Table 12: CBIP's monthly freight emissions in 2021 by freight mode

Month	Emissions (tCO_2e)			
	Air freight	Road freight	Sea freight	Total
January	30.74	79.32	-	110.06
February	0.77	47.25	-	48.02
March	14.17	131.66	-	145.83
April	2.59	120.94	-	123.53
May	11.91	109.78	-	121.69
June	33.73	128.95	-	162.68
July	58.12	104.10	-	162.23
August	273.19	54.70	-	327.89

Month	Emissions (tCO_2e)			
	Air freight	Road freight	Sea freight	Total
September	312.84	46.51	-	359.35
October	456.66	148.18	-	604.84
November	282.13	224.02	-	506.14
December	66.24	277.54	-	343.78
Jan–Dec	-	-	2,413.85	2,413.85
Total	**1,543.09**	**1,472.96**	**2,413.85**	**5,429.90**

(Source: South Pole, based on CBIP, 2022)

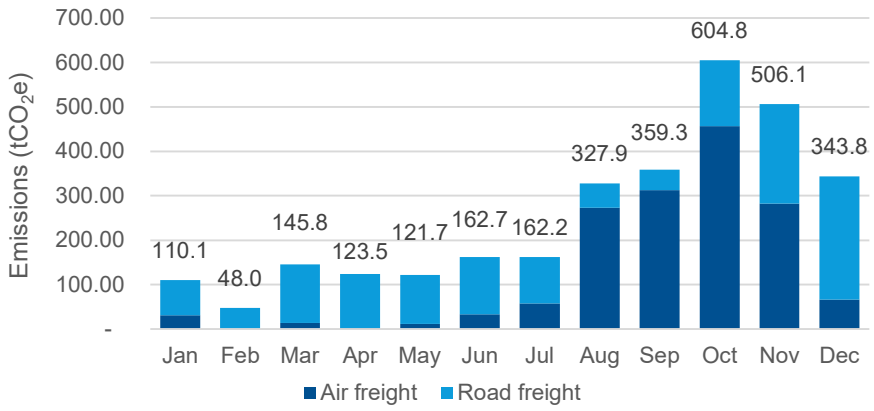


Figure 3: Breakdown of CBIP's air and road freight per month in 2021

(Source: South Pole, based on CBIP, 2022)

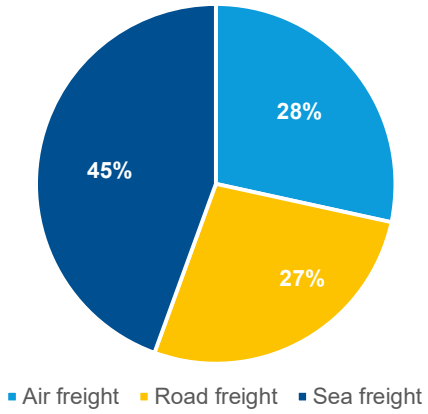


Figure 4: Proportion of CBIP's freight emissions from each freight mode

(Source: South Pole, based on CBIP, 2022)

2.2.1.1 Freight analysis by supplier

The majority of sea freight is transported using Catherine as the vendor, which contributes 44.38% of the total freight emissions. Catherine mainly represents sea transport from China to

the UK, the US and Europe. This is followed by Kerry (26.11%) in air transport and road freight. The greatest emissions for ground transport are produced by NTL, with scooter transport providing 22.36% of the total freight emissions. The detail of freight emissions by supplier is provided in Figure 3 and Figure 4, while a breakdown of CBIP's emissions by suppliers per month can be observed in Figure 5, with further details available in Annex III.

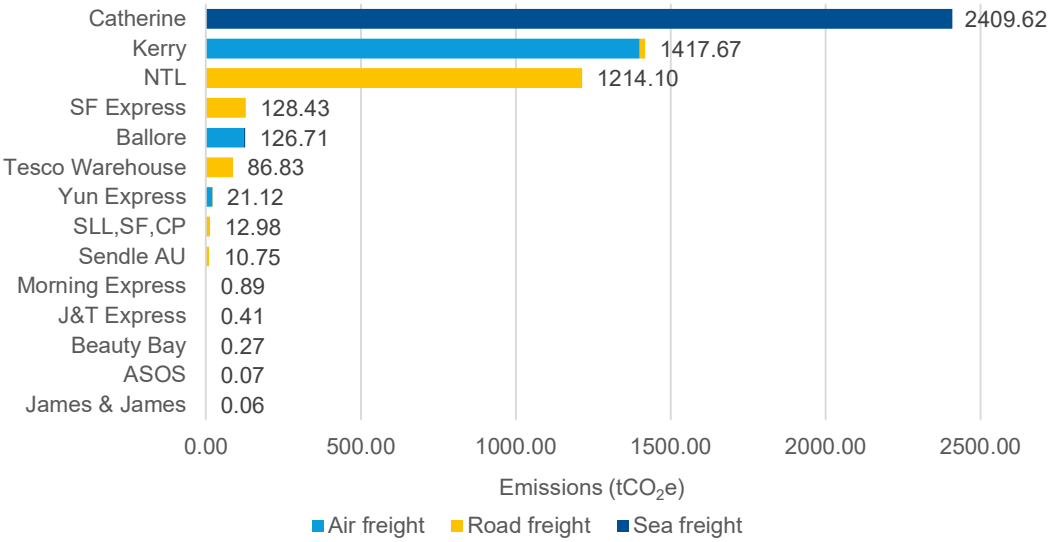


Figure 5: Breakdown of CBIP's freight emissions by supplier and freight mode in 2021

(Source: South Pole, based on CBIP, 2022)

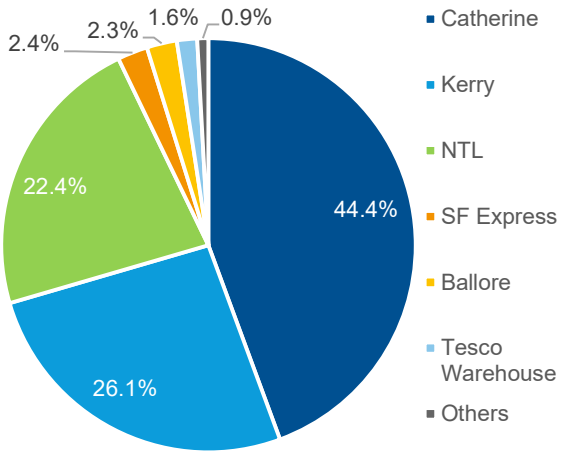


Figure 6: Proportion of CBIP's emissions from suppliers

(Source: South Pole, based on CBIP, 2022)

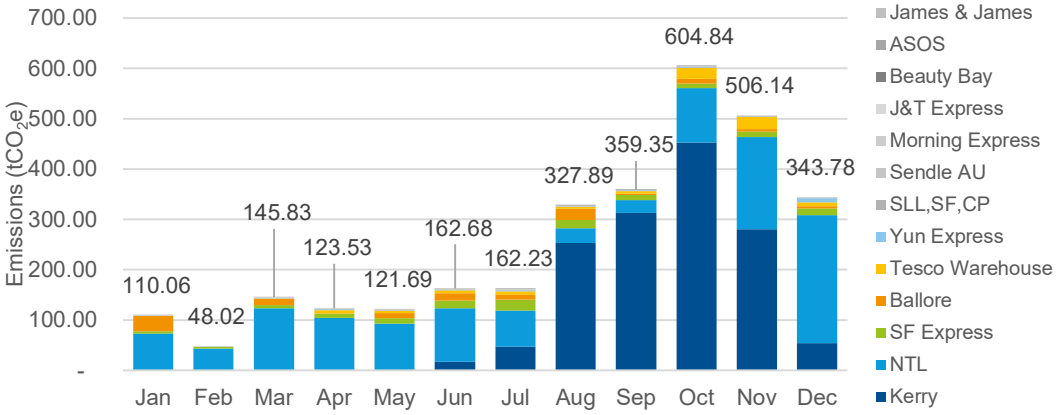


Figure 7: Breakdown of CBIP's emissions by supplier per month in 2021*

(Source: South Pole, based on CBIP, 2022)

* Does not include sea freight emissions from Catherine (2,409.62 tCO_2e) and Ballore (4.23 tCO_2e) as these vendors do not have monthly information.

2.2.1.2 Freight analysis by client

In terms of clients, R&F UK contributes the largest amount of freight emissions at 27.57%, with sea freight being the mode of transport receiving the greatest use. R&F UK is a client based in the UK which sources their supply from China. The second-largest quantity of emissions is provided by Noissue at 26.11% of total freight emissions, mainly deriving from air freight. Most of Noissue's cargo comes from Hong Kong and is then delivered to various countries throughout the world via aircraft. CGI Vietnam contributes the third-largest emissions quantity at 22.36%, mainly coming from road freight. CGI Vietnam's cargo comes from and is delivered within Vietnam by scooter. The details for freight emissions by client are provided in Figure 8 and Figure 9, while a breakdown of CBIP's emissions by clients per month can be observed in Figure 10, with further details available in Annex III.

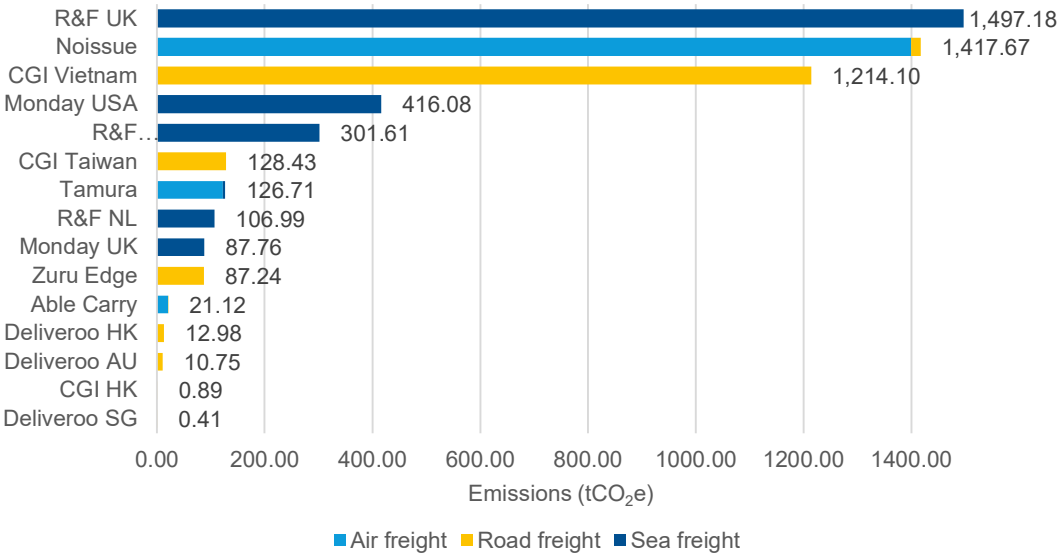


Figure 8: Breakdown of CBIP's freight emissions by client and freight mode

(Source: South Pole, based on CBIP, 2022)

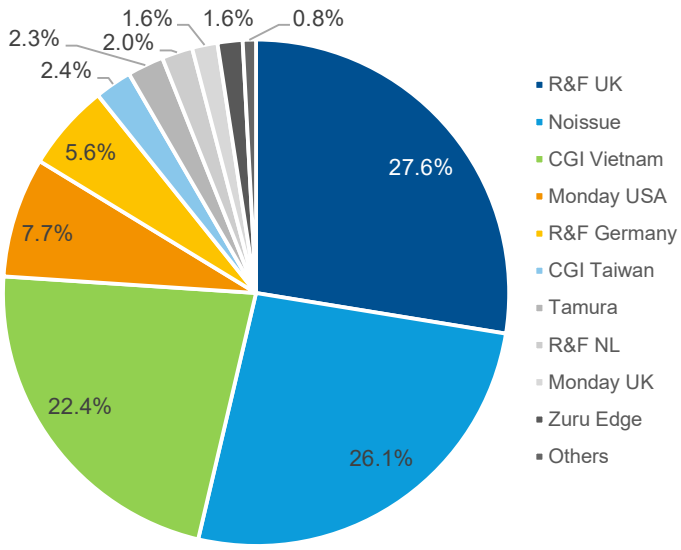


Figure 9: Proportion of CBIP's emissions from clients

(Source: South Pole, based on CBIP, 2022)

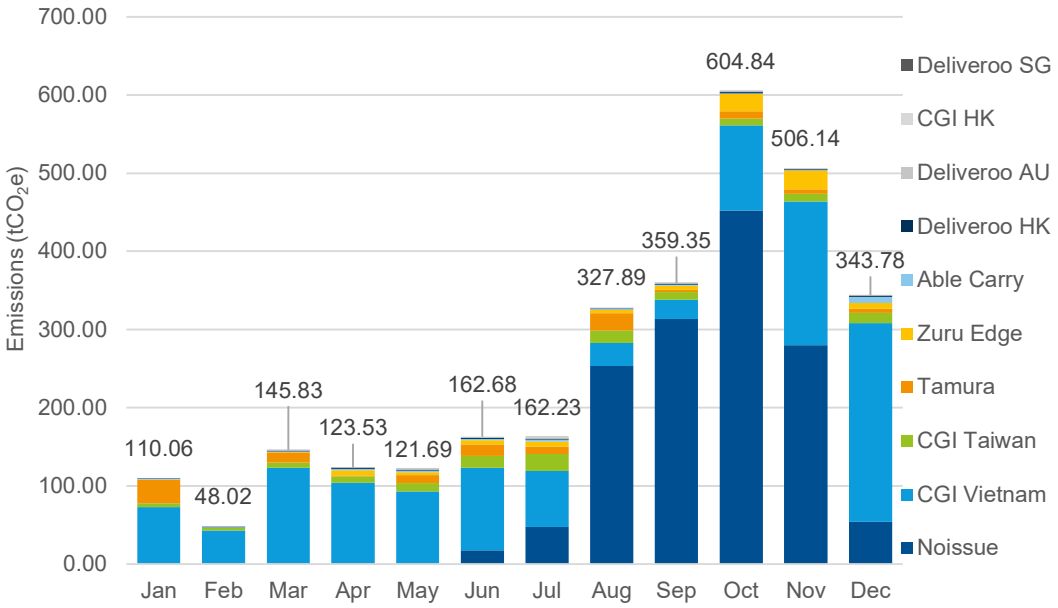


Figure 10: Breakdown of CBIP's emissions by client* per month in 2021

(Source: South Pole, based on CBIP, 2022)

* Does not include sea freight emissions from R&F UK (1,905.78 tCO_2e), Monday (503.84 tCO_2e) and Tamura (4.83 tCO_2e) as these vendors do not have monthly information.

2.2.2 Warehouse analysis

The second-highest emissions contributor is upstream leased assets (warehouse), accounting for 1.92% of CBIP's 2021 footprint at 106.18 tCO_2e. This category consists of emissions from purchased electricity (both grid and renewable) and district cooling. Of these sub-categories, purchased electricity from the grid was responsible for the greatest emissions at 95.60 tCO_2e, attributed to 90.03% of the total emissions from upstream leased assets.

A breakdown of each emission source by month is provided in Table 13 and Figure 11 and Figure 12. Warehouse emissions increased significantly due to increases in the leased area. The supplier NTL VN provided services to a new client, Miniso, while the supplier WFL SG doubled its leased area Deliveroo SG as its client. Hence, energy consumption was higher compared to the previous months.

Table 13: CBIP's monthly warehouse emissions by source

Month	Emissions (tCO_2e)			
	Grid electricity	Renewable electricity	District cooling	Total
January	4.82	-	0.40	5.22
February	5.21	-	0.48	5.68
March	5.75	0.07	0.48	6.30
April	6.35	0.08	0.73	7.16
May	6.85	0.05	1.10	8.00
June	7.43	0.06	1.09	8.58
July	7.16	0.03	1.39	8.58
August	7.17	0.03	1.35	8.55
September	7.60	0.06	1.32	8.98
October	12.74	0.05	0.76	13.55
November	12.42	0.06	0.44	12.92
December	12.11	0.07	0.48	12.66
Total	**95.60**	**0.57**	**10.02**	**106.18**

(Source: South Pole, based on CBIP, 2022)

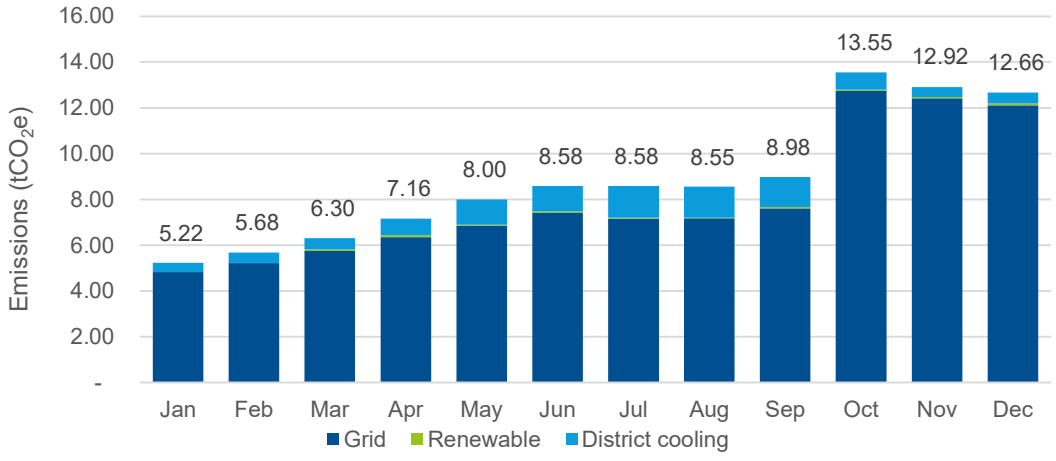


Figure 11: Breakdown of CBIP's warehouse emissions per month in 2021

(Source: South Pole, based on CBIP, 2022)

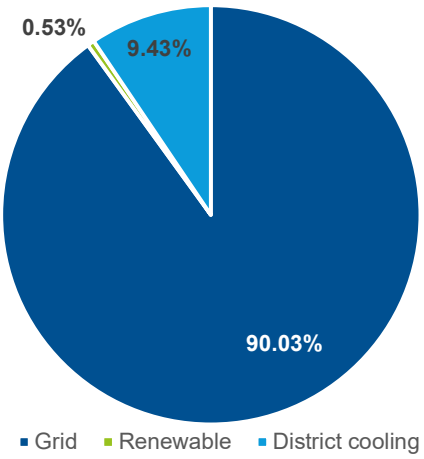


Figure 12: Proportion of CBIP's warehouse emissions from each sub-category

(Source: South Pole, based on CBIP, 2022)

2.2.2.1 Warehouse analysis by supplier

This section breaks down emissions from warehouse vendors. Similar to the distribution of CBIP's emissions overall, grid electricity is the major source of emissions for vendors at roughly 90% of the total, followed by district cooling and renewable electricity.

As can be seen in Figure 13, WFL HK is the top emitter, producing 39.96% of the total emissions from suppliers at 42.43 tCO_2e. This is despite WFL HK's emissions consisting only of purchased grid electricity and its services being offered mainly to just Deliveroo HK, DiPulse, Pastiche and TAG USA. The second-biggest emissions contributor is NTL VN, which only offered its services to Miniso and CGI Vietnam. Further detail on warehouse emissions by supplier is provided in Figure 13 and Figure 14, while a monthly emissions breakdown can be observed in Figure 15, with more information available in Annex III.

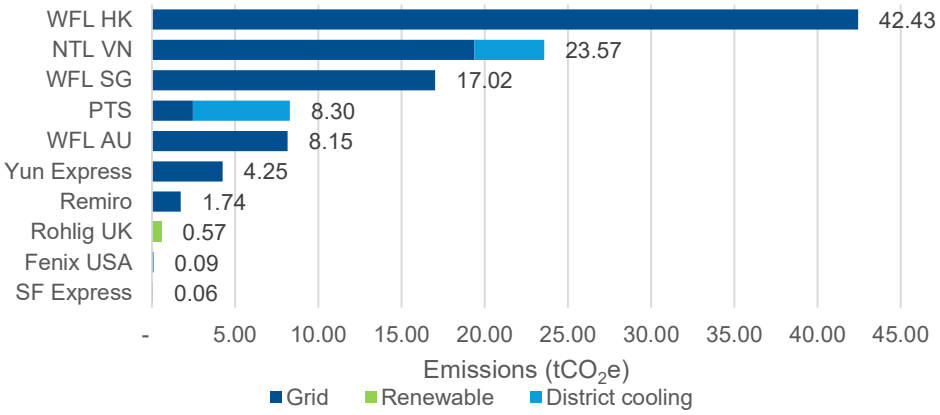


Figure 13: Breakdown of CBIP's warehouse emissions by supplier and emission source

(Source: South Pole, based on CBIP, 2022)

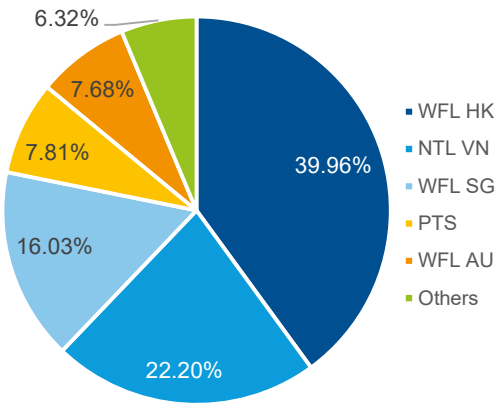


Figure 14: Proportion of CBIP's emissions from warehouse suppliers

(Source: South Pole, based on CBIP, 2022)

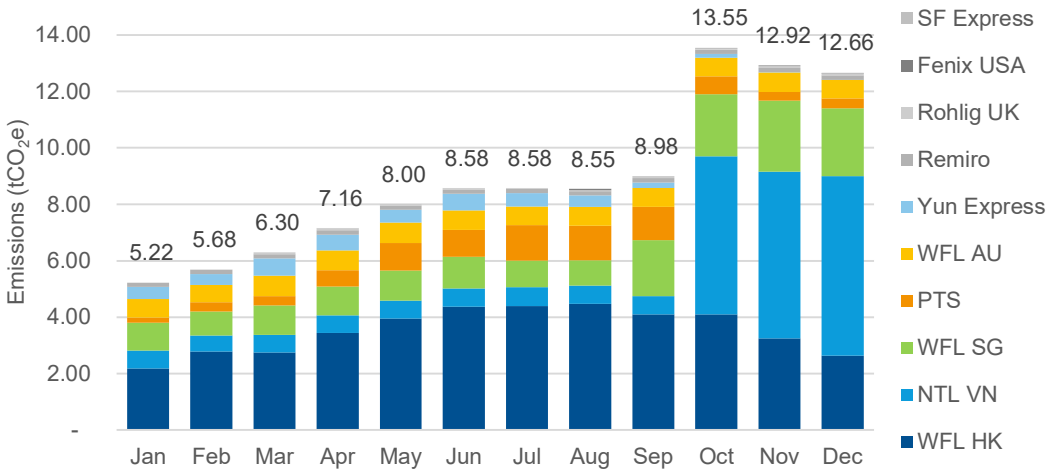


Figure 15: Breakdown of CBIP's emissions by warehouse supplier per month in 2021*

(Source: South Pole, based on CBIP, 2022)

* Emissions from SF Express in Taiwan were reported bimonthly based on CBIP's data. Emissions have therefore been allocated to the later month (e.g. if energy consumption occurred in January–February 2021, it will be included as consumption for February 2021).

2.2.2.2 Warehouse analysis by client

In terms of clients, Deliveroo HK, DiPulse, Pastiche and TAG USA were responsible for the largest warehouse emissions at 39.96% of total client emissions, with the single greatest emission source being grid electricity. These clients used warehouses in Hong Kong from the WFL HK vendor. The second-biggest contributor to client emissions is Miniso, which only used NTL as its vendor in Vietnam. Further detail on warehouse emissions by client is provided in Figure 16 and Figure 17, while a monthly emissions breakdown can be observed in Figure 18, with more information available in Annex III.

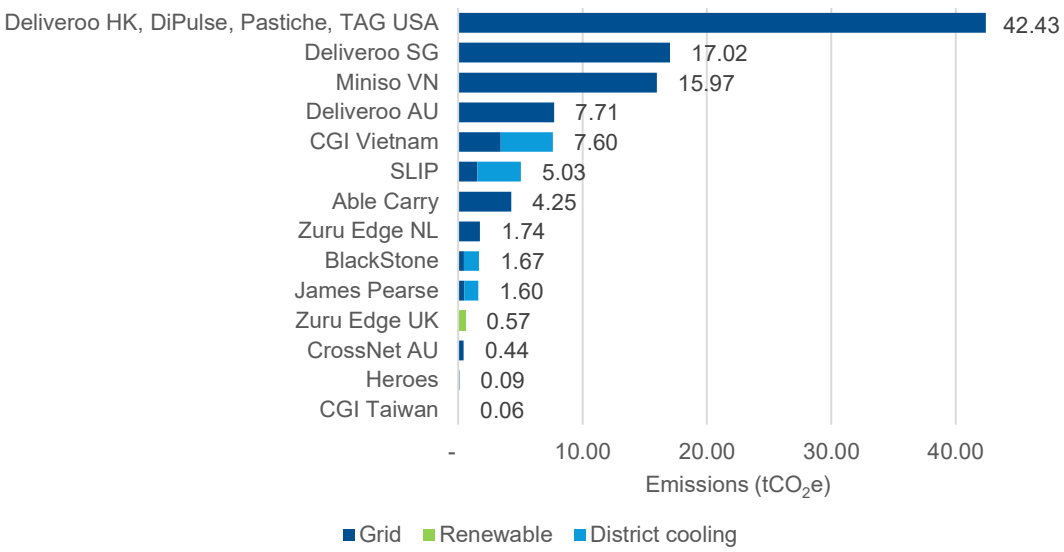


Figure 16: Breakdown of CBIP's warehouse emissions by client and emission source

(Source: South Pole, based on CBIP, 2022)

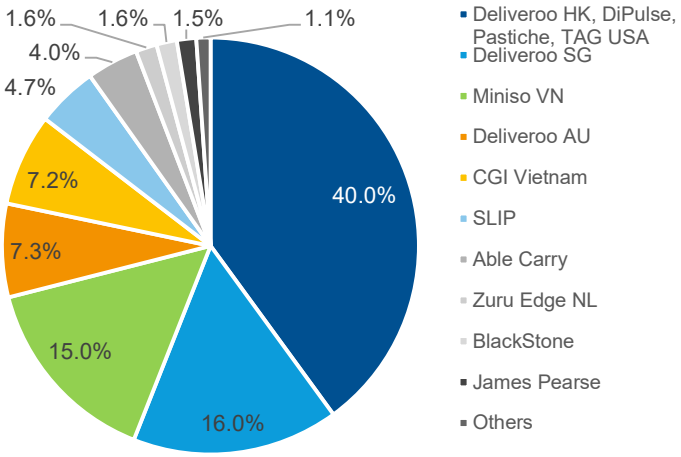


Figure 17: Proportion of CBIP's emissions from warehouse clients

(Source: South Pole, based on CBIP, 2022)

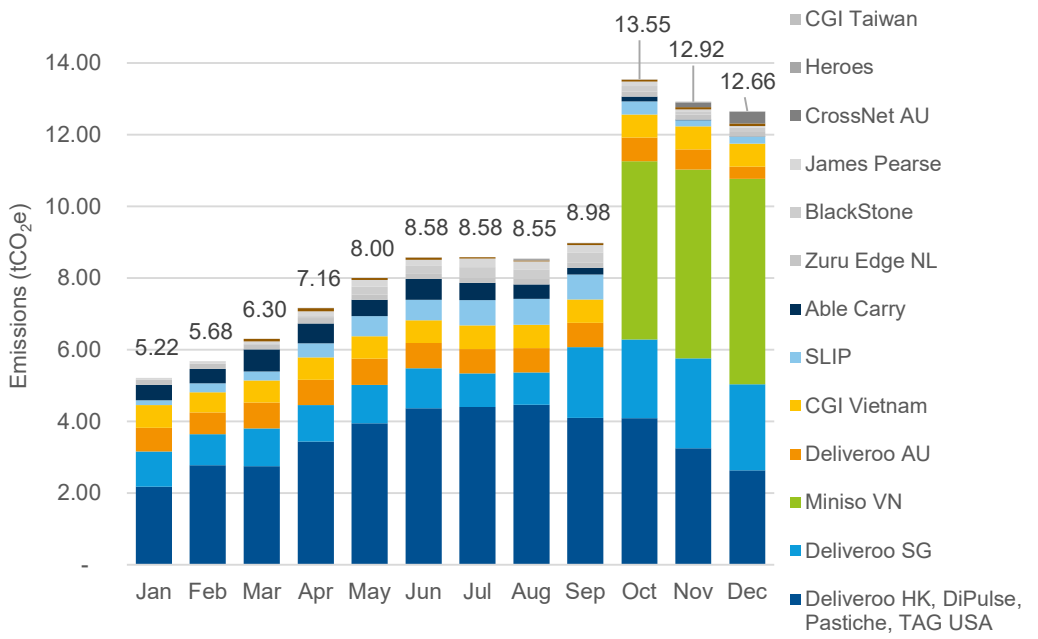


Figure 18: Breakdown of CBIP's warehouse emissions by client per month in 2021*

(Source: South Pole, based on CBIP, 2022)

* Emissions from SF Express in Taiwan were reported bimonthly based on CBIP's data. Emissions have therefore been allocated to the later month (e.g. if energy consumption occurred in January–February 2021, it will be included as consumption for February 2021).

Annex I

Emission factors

Table 14: Emission factors

Activity	Emission factor reference[2]
Electricity	Vietnam Department of Climate Change, 2020; International Energy Agency (IEA), 2021
Commuter travel	IEA, 2021; BEIS, 2021; Anthesis, 2020; Swiss Federal Railways, 2011; electricity emission factors (calculated internally by South Pole), 2021
Freight	BEIS, 2021; IEA, 2021; Swedish Transport Administration, 2017; Swiss Federal Railways, 2011
Paper	BEIS, 2021
Cloud services	Google, 2012; Amazon, 2021; IPCC, 2014
Waste	World Bank waste statistics; BEIS, 2021; ecoinvent v3.8
IT equipment	HP, 2022; Dell, 2021
T&D and WTT	IEA, 2021; ecoinvent v3.8

(Source: Name, Year)

[2] South Pole derives its emission factors from reliable and credible sources. South Pole is not responsible for inaccuracies in emission factors provided by third parties.

Annex II

Data assumptions and extrapolations

Energy consumption

Purchased electricity

CBIP provided the total office building electricity consumption and area together with the proportion of its leased area. These values were then multiplied to calculate CBIP's share of electricity.

Energy-related activities

No additional assumptions or extrapolations.

Purchased goods and services

Paper

Consumed papers was assumed to be virgin papers.

Cloud services

No additional assumptions or extrapolations.

IT equipment

No additional assumptions or extrapolations.

Freight

Road freight

CBIP provided the cargo weight, vehicle type and capacity, origin and destination countries and/or cities and fuel type data. EcoTransIT and Google Maps feature were used to calculate the distance, with several assumptions made if the activity occurred in the same country and/or city. These assumptions included the typical road freight distance within the country for Vietnam,[3] Singapore[4] and Australia[5] and the longest distance within the country or city. All multiple destination and overseas freights were confirmed to be domestic freights by CBIP.

Some freights were listed as public transport, which were then assumed to be via train. Since the distance for this type of freight was combined with walk distance, these journeys were assumed to comprise 80% train travel and 20% walking, as confirmed with CBIP. For the calculation, vans laden were assumed as an average while the articulated laden were confirmed as 100% laden. The unknown fuel type was assumed to be diesel.

Sea freight

Sea freights were calculated using EcoTransIT. Road freights from port to port were not calculated as all road freight data had already been captured.

---

[3] Huu, D. N., & Ngoc, V. N. (2021). *Analysis Study of Current Transportation Status in Vietnam's Urban Traffic and the Transition to Electric Two-Wheelers Mobility. Sustainability, 13*(10), 5577. https://doi.org/10.3390/su13105577

[4] Olszewski, P., Wong, Y., & Luk, J. (2003, May 18-23). *Freight transport in Singapore - Current status and future research* [Conference session]. Australian Road Research Board and Regional Aviation Association of Australia Conference, Cairns, Australia. https://www.researchgate.net/publication/289658304_Freight_transport_in_Singapore_-_Current_status_and_future_research

[5] L.E.K. Consulting Australia Pty Ltd. (2021). *General Goods – Supply Chain Benchmarking. Report for the Department of Infrastructure, Transport, Regional Development and Communications*. 17. https://www.freightaustralia.gov.au/sites/default/files/documents/commodity-report--general-goods.pdf

Air freight

CBIP provided the weight of cargo, the IATA code for some freights and the country of origin and destination. For freights without an IATA code, the location of the airport was determined by assuming the warehouse city as the destination city. If the data of the warehouse city is not available, then the busiest airport in that country was selected. For destinations with multiple IATA codes, CBIP has confirmed that they were international freights. Hence, the IATA code of overseas countries was selected for the calculation. Lastly, CBIP also provided several vans data in the air freight, which then were calculated as road freight instead.

Waste

CBIP did not provide waste data. Waste generation was estimated using the number of employees in the Hong Kong and Vietnam offices, 2020 Hong Kong waste statistics,[6] 2021 working days in Hong Kong and World Bank waste statistics for Vietnam.[7]

Employee commuting

Employee commuting and teleworking data was collected using a survey, which had an overall response rate of 100%. The number of working days in 2021 per employee was extrapolated based on the respondent's answers, such as weekly commute, teleworking days and public holidays.

Upstream leased assets

CBIP provided the total warehouse building electricity consumption and area together with the proportion of its leased area. These values were then multiplied to calculate CBIP's share of electricity. This method was also applied to the district cooling calculation.

[6] Environmental Protection Department of Hong Kong. (2021). *Monitoring of Solid Waste in Hong Kong: Waste Statistics for 2020*. 9. https://www.wastereduction.gov.hk/sites/default/files/msw2020.pdf

[7] World Bank. (2019). *What a Waste Global Database*. https://doi.org/10.3390/su13105577 https://datacatalog.worldbank.org/search/dataset/0039597

Annex III

Additional tables and charts

Table 15: CBIP's freight emissions broken down by freight mode and supplier in 2021

Freight type	Supplier name	Emissions in 2021 (tCO_2e)													
		Jan–Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Air freight	Kerry	-	-	-	-	-	-	17.32	46.68	250.09	309.32	446.39	276.34	53.38	1,399.53
	Yun Express	-	0.88	0.77	1.24	1.51	1.65	1.76	2.12	1.00	1.09	1.02	0.29	7.76	21.09
	Ballore	-	29.86	-	12.93	1.08	10.27	14.64	9.32	22.10	2.43	9.24	5.50	5.10	122.47
Road freight	ASOS	-	-	-	-	-	-	-	-	0.01	0.06	-	-	-	0.07
	Beauty Bay	-	-	-	-	-	-	-	0.02	0.06	0.04	0.15	-	-	0.27
	J&T Express	-	0.01	0.01	0.05	0.04	0.06	0.02	0.06	0.04	0.01	0.03	0.04	0.04	0.41
	James & James	-	-	-	-	-	<0.01	0.04	-	0.01	-	0.01	-	-	0.06
	Kerry	-	-	-	-	-	-	0.21	0.58	3.19	3.97	5.88	3.63	0.67	18.14
	Morning Express	-	0.07	0.05	0.08	0.07	0.07	0.08	0.08	0.08	0.07	0.07	0.08	0.08	0.89
	NTL	-	72.74	42.96	123.19	104.16	92.86	105.59	72.04	29.49	24.83	108.71	183.58	253.94	1,214.10
	SF Express	-	5.17	3.22	6.46	8.13	10.62	15.19	21.54	15.76	10.10	8.76	10.21	13.26	128.43
	SLL, SF, CP	-	0.98	0.50	0.80	1.01	1.16	1.06	1.29	1.10	1.16	1.33	1.17	1.41	12.98
	Tesco Warehouse	-	-	-	0.48	6.60	3.93	5.38	6.87	4.22	5.55	22.01	24.18	7.61	86.83
	Yun Express	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03
	Sendle AU	-	0.35	0.50	0.60	0.93	1.05	1.38	1.63	0.74	0.71	1.22	1.12	0.53	10.75
Sea freight	Catherine	2,409.62	-	-	-	-	-	-	-	-	-	-	-	-	2,409.62
	Ballore	4.23	-	-	-	-	-	-	-	-	-	-	-	-	4.23
Total		**2,413.85**	**110.06**	**48.02**	**145.83**	**123.53**	**121.69**	**162.68**	**162.23**	**327.89**	**359.35**	**604.84**	**506.14**	**343.78**	**5,429.90**

(Source: Name, Year)

Table 16: CBIP's freight emissions broken down by freight mode and client in 2021

Freight type	Client name	Emissions in 2021 (tCO_2e)													
		Jan–Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Air	Noissue	-	-	-	-	-	-	17.32	46.68	250.09	309.32	446.39	276.34	53.38	1,399.53
	Able Carry	-	0.88	0.77	1.24	1.51	1.65	1.76	2.12	1.00	1.09	1.02	0.29	7.76	21.09
	Tamura	-	29.86	-	12.93	1.08	10.27	14.64	9.32	22.10	2.43	9.24	5.50	5.10	122.47
Road	Able Carry	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03
	Noissue	-	-	-	-	-	-	0.21	0.58	3.19	3.97	5.88	3.63	0.67	18.14
	Zuru Edge	-	-	-	0.48	6.60	3.94	5.42	6.89	4.30	5.65	22.18	24.18	7.61	87.24
	CGI Taiwan	-	5.17	3.22	6.46	8.13	10.62	15.19	21.54	15.76	10.10	8.76	10.21	13.26	128.43
	Deliveroo AU	-	0.35	0.50	0.60	0.93	1.05	1.38	1.63	0.74	0.71	1.22	1.12	0.53	10.75
	Deliveroo HK	-	0.98	0.50	0.80	1.01	1.16	1.06	1.29	1.10	1.16	1.33	1.17	1.41	12.98
	Deliveroo SG	-	0.01	0.01	0.05	0.04	0.06	0.02	0.06	0.04	0.01	0.03	0.04	0.04	0.41
	CGI HK	-	0.07	0.05	0.08	0.07	0.07	0.08	0.08	0.08	0.07	0.07	0.08	0.08	0.89
	CGI Vietnam	-	72.74	42.96	123.19	104.16	92.86	105.59	72.04	29.49	24.83	108.71	183.58	253.94	1,214.10
Sea	Monday UK	87.76	-	-	-	-	-	-	-	-	-	-	-	-	87.76
	Monday USA	416.08	-	-	-	-	-	-	-	-	-	-	-	-	416.08
	R&F Germany	301.61	-	-	-	-	-	-	-	-	-	-	-	-	301.61
	R&F NL	106.99	-	-	-	-	-	-	-	-	-	-	-	-	106.99
	R&F UK	1,497.18	-	-	-	-	-	-	-	-	-	-	-	-	1,497.18
	Tamura	4.23	-	-	-	-	-	-	-	-	-	-	-	-	4.23
Total		**2,413.85**	**110.06**	**48.02**	**145.83**	**123.53**	**121.69**	**162.68**	**162.23**	**327.89**	**358.35**	**604.84**	**506.14**	**343.78**	**5,429.90**

(Source: Name, Year)

Table 17: CBIP's warehouse emissions broken down by emission source and supplier in 2021

Emission source	Supplier name	Emissions in 2021 (tCO_2e)												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
District cooling	PTS	0.05	0.16	0.15	0.38	0.75	0.74	1.03	0.98	0.96	0.41	0.09	0.13	5.84
	NTL VN	0.34	0.32	0.34	0.35	0.35	0.35	0.36	0.36	0.36	0.35	0.34	0.34	4.18
Grid electricity	SF Express	-	0.01	-	0.01	-	0.01	-	0.01	-	0.01	-	0.02	0.06
	Yun Express	0.43	0.39	0.62	0.56	0.45	0.58	0.48	0.41	0.19	0.13	0.01	<0.01	4.25
	PTS	0.13	0.17	0.18	0.19	0.22	0.22	0.22	0.23	0.23	0.23	0.22	0.21	2.46
	Remiro	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	1.74
	NTL VN	0.29	0.24	0.28	0.28	0.29	0.29	0.30	0.29	0.29	5.27	5.56	6.02	19.39
	WFL AU	0.66	0.61	0.73	0.70	0.73	0.69	0.67	0.68	0.68	0.66	0.69	0.66	8.15
	WFL HK	2.19	2.78	2.75	3.44	3.95	4.37	4.40	4.47	4.10	4.09	3.26	2.63	42.43
	WFL SG	0.98	0.86	1.05	1.02	1.06	1.12	0.95	0.90	1.97	2.19	2.51	2.40	17.02
	Fenix USA	-	-	-	-	-	-	-	0.04	<0.01	0.01	0.02	0.01	0.09
Renewable electricity	Rohlig UK	-	-	0.07	0.08	0.05	0.06	0.03	0.03	0.06	0.05	0.06	0.07	0.57
Total		**5.22**	**5.68**	**6.30**	**7.16**	**8.00**	**8.58**	**8.58**	**8.55**	**8.98**	**13.55**	**12.92**	**12.66**	**106.18**

(Source: Name, Year)

Table 18: CBIP's warehouse emissions broken down by emission source and client in 2021

Emission source	Client name	Emissions (tCO_2e) in 2021												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
District cooling	James Pearse	0.02	0.03	0.03	0.09	0.15	0.13	0.20	0.18	0.17	0.08	0.02	0.02	1.12
	SLIP	0.04	0.12	0.11	0.26	0.43	0.44	0.59	0.58	0.57	0.23	0.05	0.08	3.50
	Black Stone	-	-	0.00	0.04	0.17	0.17	0.24	0.22	0.22	0.10	0.02	0.04	1.22
	CGI Vietnam	0.34	0.32	0.34	0.35	0.35	0.35	0.36	0.36	0.36	0.35	0.34	0.34	4.18
Grid electricity	Able Carry	0.43	0.39	0.62	0.56	0.45	0.58	0.48	0.41	0.19	0.13	0.01	<0.01	4.25
	BlackStone	-	-	0.00	0.02	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.45
	CGI Taiwan	-	0.01	-	0.01	-	0.01	-	0.01	-	0.01	-	0.02	0.06
	CGI Vietnam	0.29	0.24	0.28	0.28	0.29	0.29	0.30	0.29	0.29	0.29	0.30	0.29	3.42
	Heroes	-	-	-	-	-	-	-	0.04	0.00	0.01	0.02	0.01	0.09
	James Pearse	0.04	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.48
	SLIP	0.09	0.14	0.14	0.13	0.13	0.13	0.13	0.14	0.14	0.13	0.13	0.12	1.53
	Deliveroo HK, DiPulse, Pastiche and TAG USA	2.19	2.78	2.75	3.44	3.95	4.37	4.40	4.47	4.10	4.09	3.26	2.63	42.43
	CrossNet AU	-	-	-	-	-	-	-	-	-	-	0.12	0.32	0.44
	Deliveroo AU	0.66	0.61	0.73	0.70	0.73	0.69	0.67	0.68	0.68	0.66	0.56	0.34	7.71
	Deliveroo SG	0.98	0.86	1.05	1.02	1.06	1.12	0.95	0.90	1.97	2.19	2.51	2.40	17.02
	Miniso VN	-	-	-	-	-	-	-	-	-	4.98	5.26	5.73	15.97
	Zuru Edge NL	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	1.74
Renewable electricity	Zuru Edge UK	-	-	0.07	0.08	0.05	0.06	0.03	0.03	0.06	0.05	0.06	0.07	0.57
Total		**5.22**	**5.68**	**6.30**	**7.16**	**8.00**	**8.58**	**8.58**	**8.55**	**8.98**	**13.55**	**12.92**	**12.66**	**106.18**

(Source: Name, Year)


south pole