Supply Chain Climate Action SCTI Index

IPE
Institute of Public & Environmental Affairs
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Address

“Scope 3 emissions are over 4 times the amount of normal emissions. Companies in the USA and Europe are setting Science Based Targets (SBTs), 90% of them have a Scope 3 element because many of them require suppliers’ action. There is a growing recognition that they will not meet these targets without the support of Chinese suppliers. There are many examples of leaders such as Walmart, HP and BT Group. But they are not enough, because big Chinese brands have an active role to play in this issue.”

Sonya Bhonsle，Head of Supply Chain，CDP

Overview

To achieve the Paris Agreement target of keeping global warming below 2℃ and striving to stay below 1.5℃ , there must be more hard work from the bottom up. Global brands and companies in particular should take bold action and bear the primary responsibility of reducing global emissions.

According to industry average estimates, in most industrial sectors, 75% of greenhouse gas (GHG) emissions come from supply chains. In today’s globalized world, supply chain emissions are currently “transferred” to other countries. Research conducted by the Carbon Trust on international carbon flows in the apparel sector found that China is the world’s largest emitter in the apparel sector, and 72% of China’s apparel sector emissions are transferred to other countries.[1]

This report examines the GHG emissions management of 118 IT and textile industry brands from the green supply chain Corporate Information Transparency Index (CITI)[2], concluding that among the 72 brands that released GHG information, only 23 brands published complete value chain emissions information. Most brands did not take supply chain carbon footprints into consideration at all.

[1]https://www.carbontrust.com/media/38358/ctc793-international-carbon-flows-clothing.pdf

[2]The green supply chain Corporate Information Transparency Index (CITI) is the world's first quantitative evaluation system for the environmental management performance of brands' supply chains in China, jointly developed by the Institute of Public and Environmental Affairs (IPE) and the Natural Resources Defense Council (NRDC). The CITI index uses public data such as government compliance data, online monitoring data, confirmed public complaint records, corporate disclosures, and third-party environmental audits to dynamically assess the environmental management performance of brands' supply chains in China.

http://www.ipe.org.cn/GreenSupplyChain/Main.aspx

Setting GHG targets is essential to reducing emissions. According to relevant research, more than 80% of the world’s Fortune 500 Companies have set emissions reduction targets. This report finds that within the two industries investigated, approximately half of the brands published GHG emissions targets, but among this group, only 17 brands also set supply chain emissions reduction targets. The targets of the evaluated brands therefore often do not cover carbon hotspots within their value chain, and emissions reduction actions are either incomplete or inefficient.

Increasingly, brands have started to realize that if they do not push for supply chain energy-saving emissions reductions, it will be extremely difficult to reach the targets they must achieve. Even so, less than a quarter of brands have cooperated with their suppliers to reduce emissions, and the brands that genuinely drive their suppliers to quantify and publish emissions values number at only 16.

The Supply Chain Climate Action SCTI Index uses four indicators, including emissions information, targets and performance, climate actions, and strategy and governance to evaluate efforts by brands in the field of GHG emissions reduction. The criteria system is based on present initiatives and disclosure frameworks; an extension of the CITI assessment, this specialized system is used to evaluate brands’ supply chain GHG emissions management, and as with CITI, provides the guiding role of a roadmap. SCTI aims to promote brands’ action toward supply chain GHG reduction as well as their in-depth participation in global climate change governance.

In the evaluation’s Top 30, Apple and Nike tied for first place, and placed first among the IT and textile industries, respectively. Walmart, Cisco, Hummer, IKEA, Dell, H&M, HP Inc., Levi’s and Marks & Spencer all reached 60 points, scoring in the top eight. Lenovo and Huawei are the two Chinese brands that also squeezed into the Top 30.

This report recommends that more brands start by promoting the quantification and disclosure of supply chain GHG emissions data. At the same time, appeal to the government to accelerate the monitoring, reporting and verification of enterprises’ GHG emissions data, which would create favorable conditions for brands and companies to push their suppliers in China to quantify their GHG emissions and set emissions reduction targets. With continuous disclosure, companies will then be able to verify the values and credibility of emissions reductions.

The disclosure of enterprise-level GHG emissions data will furthermore provide a key prerequisite for green finance and the establishment of China’s carbon trading market to realize a major step toward achieving the goals of the Paris Agreement.

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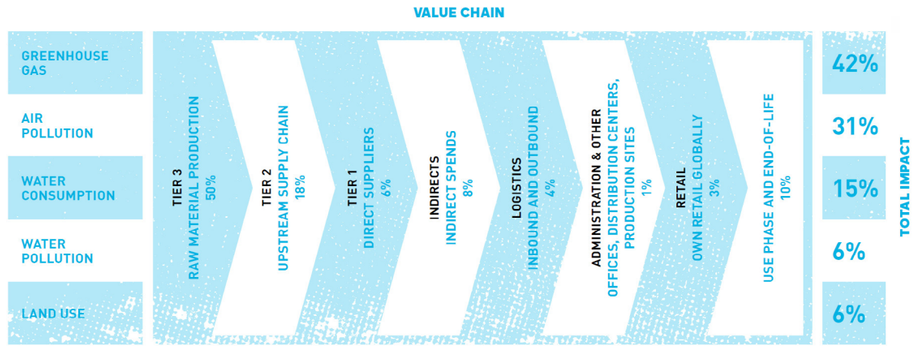
Foreward: Supply Chain Carbon Footprints

As the anthropogenic greenhouse gas (GHG) emissions that contribute to global warming continue to rise, companies play a critical role in supporting national governments' achievement of their climate targets by leading and committing to GHG emissions management. All companies understand the benefits of carbon emissions management, but they often do not include supply chain emissions in their mitigation policies. The majority of companies are only concerned with their direct emissions, yet supply chain emissions are in fact a substantial portion of a company's carbon footprint, and cannot be ignored simply because they fall outside direct operational control.

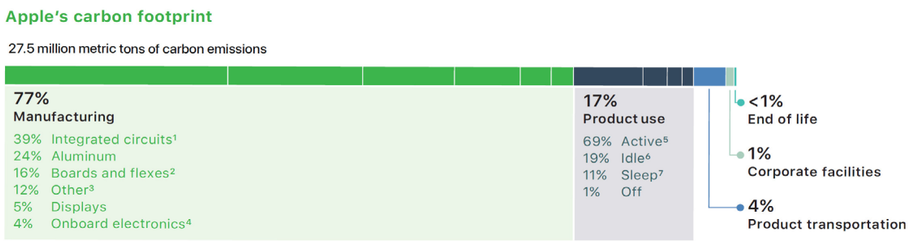
Ever more companies have begun to recognize the importance of sustainable supply chains, however, supply chain carbon footprints do not have the adequate attention of most companies. The 2018 CDP Supply Chain Project global report found that most supply chains are still not included in coordinated emissions reduction actions[3]. Carbon emissions are one of the most significant indicators of a sustainable supply chain; without understanding their complete carbon footprints, especially supply chain carbon footprints, companies will have greater difficulty adopting the most cost-effective emissions reduction strategies. Even if they have already formulated and developed a series of mitigation actions, the distance to realizing truly sustainable supply chains will still be very far.

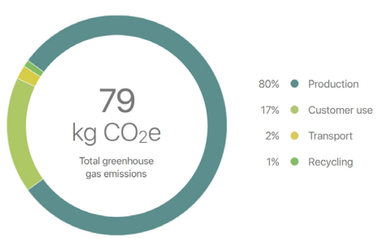
Carbon footprints serve as a quantifiable concept to measure the GHG emissions of product life cycles, and currently receive the attention and application of an increasing number of brands. Carbon footprints not only help brands identify the greatest sources of emissions within production life-cycles—also known as "carbon hotspots"—to determine links in the value chain most susceptible to risks and impacts from laws and regulations related to energy and carbon emissions, thereby allowing brands to commit to the most cost-effective mitigation actions, but they can also motivate brands to cooperate with stakeholders on joint goals and efforts to reduce life-cycle greenhouse gases.

For a greater understanding of the primary environmental impacts of its value chain, Adidas conducted an assessment of its environmental footprint. The evaluation found that the greatest impacts came from factories further upstream than Tier 1 direct suppliers, and that GHG emissions accounted for 42% of the overall environmental impact, more than half of which were generated by the upstream supply chain outside their direct suppliers, such as the processing procedure for leather and other raw materials.



[3] https://www.cdp.net/en/research/global-reports/global-supply-chain-report-2018





Apple not only disclosed the calculated carbon footprints of every product's entire life cycle, but also that of their overall carbon emissions (including suppliers, users and equipment). The carbon footprint of the iPhone X shows that manufacturing emissions account for 80%, while Apple's carbon footprint confirms that product manufacturing is similarly 77% of its total, in which aluminum manufacturing accounts for one fourth of emissions. Apple, in accordance with its carbon footprint analysis and design project, then sought to reduce carbon emissions relevant to its aluminum metal casings.

According to industry average estimates, in most industrial sectors, 75% of GHG emissions come from supply chains[4]. In today's globalized world, supply chain emissions are currently "transferred" to other countries. The United Kingdom Committee on Climate Change has noted that U.K.'s overall contribution to climate change is actually increasing, despite the fact that its emissions are continuously decreasing. That is to say, England is at once reducing its national emissions reductions and "importing" the emissions of other countries, thereby producing an increase in "transfer emissions." [5]

The Carbon Trust conducted research on international carbon flows in the apparel sector (as shown below), which revealed that within the apparel sector, China is the both world's greatest emitter and one of the greatest exporters of emissions (72% of China's apparel sector emissions are exported other countries). Over the past year, increasing numbers of multinational companies have begun to recognize that they also need to bear the responsibility of their supply chain emissions, but the management of GHG emissions in supply chains in China is still far from enough.[6]

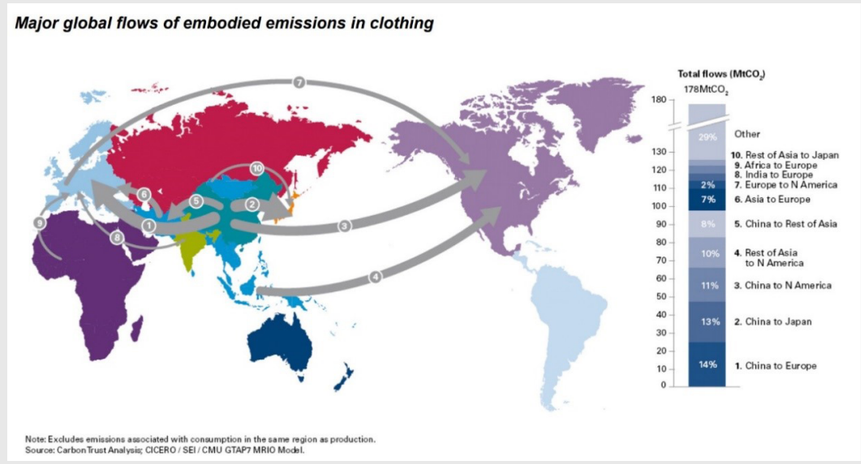


Figure 1. Major carbon flows of the international apparel sector[7]

As every country strengthens subsidies toward low-carbon technology and expands the coverage of carbon trading or carbon taxes, companies that rely on carbon-intensive assets or service models are most susceptible to shock. In order to assess the climate change risk in their portfolios, large institutional investors must develop models with the help of carbon emissions information disclosed by companies, and evaluate the carbon footprint of their overall portfolios as well as risk exposure from carbon-intensive companies[8]. Because many multinational companies use global procurement and outsource their manufacturing, institutional investors will pay special attention to their supply chain emissions while estimating companies' overall carbon risk exposure, in order to compare them with companies with vertical integration.

Supply chain emissions also provide an important indicator for evaluating how companies can improve their supply chain adaptability/resilience. Institutional investors wish to see how companies work in tandem and cooperation with suppliers to respond to environmental challenges in the supply chain, decreasing supplier carbon intensity step by step and improving their resource efficiency. This factor not only drives suppliers' abilities to address climate risks, but can further help companies build green supply chains and maintain the brand reputation of the company.

[4] Y. Anny Huang, Christopher L. Weber, and H. Scott Matthews, "Categorization of Scope 3 Emissions for Streamlined Enterprise Carbon Footprinting," Environmental Science & Technology, Vol. 43: No. 22 (2009): 8509. http://pubs.acs.org/doi/full/10.1021/ es901643a.

[5] http://www.bbc.com/news/business-22267231

[6] http://www.adas.uk/News/reducing-supply-chain-ghg-emissions

[7] https://www.carbontrust.com/media/38358/ctc793-international-carbon-flows-clothing.pdf

[8] The Carbon Scorecard, Trucost by S&P Dow Jones Indices, May 2018.

Supply Chain Climate Action SCTI Index[9]

Based on information disclosed by brands, brands' efforts toward GHG emissions reduction are evaluated using four indicators: emissions information, targets and performance, climate actions, and strategy and governance. The criteria system was established on the basis of present initiatives and disclosure frameworks, such as the Task Force on Climate-related Financial Disclosures (TCFD). An extension of the CITI assessment, this specialized system is used to evaluate brands' supply chain GHG emissions management, and as with CITI, provides the guiding role of a roadmap. SCTI aims to promote brands' action toward supply chain GHG reduction as well as their in-depth participation in global climate change governance.

Criteria		Weight
Emissions Information	1. GHG emissions data	12
	2. Emissions methodology	16
Targets and Performance	3. Emissions reduction targets	16
	4. Performance against targets	12
Climate Actions	5. Emissions reduction initiatives	16
	6. Pushed supply chain in China to reduce emissions	16
Strategy and Governance	7. Climate strategy and governance	12

Emissions reduction targets are a quantitative indicator of brands' commitment to mitigation and have key significance with regard to brands' practical emissions reduction, therefore targets are weighted relatively high within the indicator system. Emissions information is the foundation for target-setting, whereas emissions reduction actions are specific pathways toward achieving those targets and simultaneously promote mitigation action for supply chains in China. Brands' climate strategies only support their commitment if they are consistent with their emissions reduction targets, therefore strategies and governance are an integrated assessment of the target-setting process and the development of emissions reduction actions.

[9] Supply Chain Climate Transparency Index

[10] See Appendix II. Evaluation Basis

[11] See Appedix III. Connections to Other Frameworks

Top 30

01 Apple 67(score)	01 Nike 67	03 Walmart 64	04 Cisco 63	04 Puma 63
06 IKEA 62	07 Dell 61	08 H&M 60	08 HP 60	08 Levi's 60
08 M&S EST. 1884 60	12 ASICS 59	13 Fujitsu 58	14 adidas 56	14 BT 56
14 Samsung 56	17 Burberry London England 55	17 Nokia 55	19 Gap Inc. 53	20 Hewlett Packard Enterprise 52
21 Panasonic 51	22 Canon 47	22 Intel 47	22 Tesco 47	22 Uniqlo 47
26 Inditex 46	27 Lenovo 联想 45	27 Vodafone 45	29 Microsoft 44	30 Huawei 42

Industry Rankings

IT			Emissions Information		Targets and Performance		Climate Actions		Strategy & Governance
			GHG Emissions Data	Emissions Methodology	Emissions Reduction Targets	Performance against Targets	Emissions Reduction Initiatives	Pushed Supply Chain in China to Reduce Emissions	Climate strategy & governance
No.	Brand	**100**	**12**	**16**	**16**	**12**	**16**	**16**	**12**
1	Apple	67	12	8	12	9	12	8	6
2	Cisco	63	12	8	12	9	12	4	6
3	Dell	61	6	8	12	9	12	8	6
4	HP Inc	60	12	4	16	3	12	4	9
5	Fujitsu	58	12	4	16	9	4	4	9
6	BT	56	12	8	16	3	8	0	9
6	Samsung	56	12	12	4	3	12	4	9
8	Nokia	55	12	8	8	6	12	0	9
9	HPE	52	12	4	16	3	8	0	9
10	Panasonic	51	12	8	8	6	4	4	9
11	Canon	47	12	4	8	6	4	4	9
11	Intel	47	12	0	8	6	8	4	9
13	Lenovo	45	9	12	4	3	4	4	9
13	Vodafone	45	9	12	4	3	8	0	9
15	Microsoft	44	12	0	4	3	12	4	9
16	Huawei	42	6	4	4	3	8	8	9
17	Seiko Epson	40	9	4	8	6	4	0	9
18	Sony	36	12	4	4	3	4	0	9
18	Ericsson	36	12	4	4	3	4	0	9
18	Sharp	36	12	4	4	3	4	0	9

IT			Emissions Information		Targets and Performance		Climate Actions		Strategy & Governance
			GHG Emissions Data	Emissions Methodology	Emissions Reduction Targets	Performance against Targets	Emissions Reduction Initiatives	Pushed Supply Chain in China to Reduce Emissions	Climate strategy & governance
No.	Brand	**100**	**12**	**16**	**16**	**12**	**16**	**16**	**12**
21	Foxconn	34	0	0	12	0	12	4	6
22	LG	32	12	0	4	3	4	0	9
23	Singtel	26	6	0	4	3	4	0	9
23	IBM	26	9	0	4	3	4	0	6
25	Motorola	23	6	4	0	0	4	0	9
25	Google	23	6	0	4	3	4	0	6
27	Facebook	20	6	0	4	3	4	0	3
28	HTC	17	6	0	4	0	4	0	3
29	ZTE	7	3	0	0	0	4	0	0
29	Haier	7	0	0	0	0	4	0	3
29	TCL	7	3	0	0	0	4	0	0
32	Gree	4	0	0	0	0	4	0	0
32	Amazon	4	0	0	0	0	4	0	0
34	Hisense	3	3	0	0	0	0	0	0
35	Midea	0	0	0	0	0	0	0	0
35	Meizu	0	0	0	0	0	0	0	0
35	Xiaomi	0	0	0	0	0	0	0	0
35	OPPO	0	0	0	0	0	0	0	0
35	Vivo	0	0	0	0	0	0	0	0

Textiles			Emissions Information		Targets and Performance		Climate Actions		Strategy & Governance
			GHG Emissions Data	Emissions Methodology	Emissions Reduction Targets	Performance against Targets	Emissions Reduction Initiatives	Pushed Supply Chain in China to Reduce Emissions	Climate strategy & governance
No.	Brand	**100**	**12**	**16**	**16**	**12**	**16**	**16**	**12**
1	Nike	67	9	12	12	9	12	4	9
2	Walmart	64	9	12	8	6	12	8	9
3	Puma	63	9	12	12	9	8	4	9
4	Ikea	62	12	8	16	9	4	4	9
5	M&S	60	12	8	8	3	12	8	9
5	H&M	60	12	8	12	3	12	4	9
5	Levi's	60	12	4	16	3	12	4	9
8	ASICS	59	12	8	16	6	4	4	9
9	Adidas	56	6	4	12	9	12	4	9
10	Burberry	55	9	8	12	9	8	0	9
11	Gap	53	9	12	4	3	8	8	9
12	Tesco	47	12	8	8	6	4	0	9
12	Uniqlo	47	9	8	12	3	8	4	3
14	Inditex	46	6	8	4	3	12	4	9
15	C&A	35	9	4	4	3	12	0	3
16	Carrefour	33	6	0	8	6	4	0	9
17	Tommy Hilfiger	26	6	0	4	3	4	0	9
17	Calvin Klein	26	6	0	4	3	4	0	9
17	Lee Jeans	26	6	0	4	3	4	0	9
17	Timberland	26	6	0	4	3	4	0	9

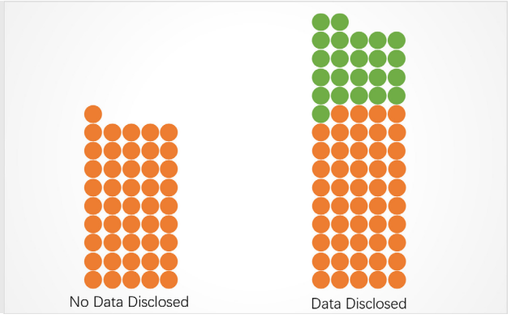
Textiles			Emissions Information		Targets and Performance		Climate Actions		Strategy & Governance
			GHG Emissions Data	Emissions Methodology	Emissions Reduction Targets	Performance against Targets	Emissions Reduction Initiatives	Pushed Supply Chain in China to Reduce Emissions	Climate strategy & governance
No.	Brand	**100**	**12**	**16**	**16**	**12**	**16**	**16**	**12**
17	The North Face	26	6	0	4	3	4	0	9
17	Target	26	6	0	4	3	4	0	9
17	COACH	26	6	0	4	3	4	0	9
17	HUGO BOSS	26	6	0	4	3	4	0	9
25	Guess	24	6	4	4	3	4	0	3
25	CHANEL	24	9	4	4	0	4	0	3
27	Disney	23	6	0	4	3	4	0	6
27	Esquel	23	0	0	4	3	8	8	0
29	Abercrombie & Fitch	19	6	0	0	0	4	0	9
29	Mizuno	19	12	4	0	0	0	0	3
31	Victoria's Secret	16	6	0	0	0	4	0	6
31	Macy's	16	6	0	0	0	4	0	6
33	New Balance	14	3	0	0	0	8	0	3
33	Esprit	14	6	0	0	0	8	0	0
35	Prada	13	6	0	0	0	4	0	3
36	Lindex	9	6	0	0	0	0	0	3
37	Ann Taylor	8	0	0	0	0	4	4	0
37	Primark	8	0	0	0	0	4	4	0
39	Sears	7	0	0	4	3	0	0	0
39	Li-Ning	7	3	0	0	0	4	0	0

Textiles			Emissions Information		Targets and Performance		Climate Actions		Strategy & Governance
			GHG Emissions Data	Emissions Methodology	Emissions Reduction Targets	Performance against Targets	Emissions Reduction Initiatives	Pushed Supply Chain in China to Reduce Emissions	Climate strategy & governance
No.	Brand	**100**	**12**	**16**	**16**	**12**	**16**	**16**	**12**
41	Cortefiel	6	6	0	0	0	0	0	0
41	ANTA	6	6	0	0	0	0	0	0
41	361	6	6	0	0	0	0	0	0
41	Mothercare	6	3	0	0	0	0	0	3
41	FILA	6	6	0	0	0	0	0	0
46	UGG	4	0	4	0	0	0	0	0
46	Polo Ralph Lauren	4	0	0	0	0	4	0	0
46	Forever 21	4	0	0	0	0	4	0	0
46	J.C. Penny	4	0	0	4	0	0	0	0
50	Columbia	3	0	0	0	0	0	0	3
50	JEANSWEST	3	3	0	0	0	0	0	0
52	Bestseller	0	0	0	0	0	0	0	0
52	G-Star	0	0	0	0	0	0	0	0
52	Youngor	0	0	0	0	0	0	0	0
52	Benetton	0	0	0	0	0	0	0	0
52	Giordano	0	0	0	0	0	0	0	0
52	Kate Spade	0	0	0	0	0	0	0	0
52	Armani	0	0	0	0	0	0	0	0
52	Next	0	0	0	0	0	0	0	0
52	Lafuma	0	0	0	0	0	0	0	0

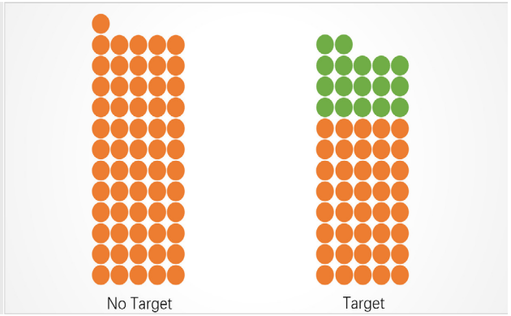
Textiles			Emissions Information		Targets and Performance		Climate Actions		Strategy & Governance
			GHG Emissions Data	Emissions Methodology	Emissions Reduction Targets	Performance against Targets	Emissions Reduction Initiatives	Pushed Supply Chain in China to Reduce Emissions	Climate strategy & governance
No.	Brand	**100**	**12**	**16**	**16**	**12**	**16**	**16**	**12**
52	Toread	0	0	0	0	0	0	0	0
52	Pierre Cardin	0	0	0	0	0	0	0	0
52	Umbro	0	0	0	0	0	0	0	0
52	Kappa	0	0	0	0	0	0	0	0
52	DKNY	0	0	0	0	0	0	0	0
52	Meters/bonwe	0	0	0	0	0	0	0	0
52	Hush Puppies	0	0	0	0	0	0	0	0
52	HEAD	0	0	0	0	0	0	0	0
52	Lacoste	0	0	0	0	0	0	0	0
52	MANGO	0	0	0	0	0	0	0	0
52	River Island	0	0	0	0	0	0	0	0
52	ROXY	0	0	0	0	0	0	0	0
52	Valentino	0	0	0	0	0	0	0	0
52	MUJI	0	0	0	0	0	0	0	0
52	K-BOXING	0	0	0	0	0	0	0	0
52	HLA	0	0	0	0	0	0	0	0
52	Semir	0	0	0	0	0	0	0	0
52	YISHION	0	0	0	0	0	0	0	0
52	Tonlion	0	0	0	0	0	0	0	0

Evaluation Findings

72 brands published GHG emissions data; among those brands, 23 released complete value chain emissions information (In the figure to the right, every dot represents a brand; green dots represent those that have published complete value chain emissions information).



Approximately half of the evaluated brands published GHG emissions reduction targets; among them, 17 set supply chain emissions reduction targets (in the figure to the right, every dot represents a brand; green dots represent those that have established supply chain emissions reduction targets).



Approximately two thirds of brands carried out emissions reduction actions, while less than a quarter of brands cooperated with their supply chains to reduce emissions and only 16 brands pushed their suppliers to quantify and publish their own emissions.

Brand Supply Chain Emissions Data

According to multinational companies, it is difficult to calculate comprehensive and accurate accounts of one's carbon footprint, however, we also see that 22 brands have already published complete value chain emissions information.

Greenhouse Gas Protocol (GHG Protocol) divides companies' direct and indirect GHG emissions into three "Scopes" (Figure 2), and requires companies to account for and report all Scope 1 emissions (direct emissions from company-owned and controlled emissions sources) as well as all of their Scope 2 emissions (indirect emissions from energy purchased and consumed by the company). [12] For Scope 3 emissions (all other indirect emissions produced in the company's value chain), the calculating company can choose flexibly, as Scope 3 emissions are subdivided into 15 different categories. All of the research regarding supply chain emissions in this report focus only on key Scope 3 upstream emissions, specifically Category 1—outsourced goods and services.

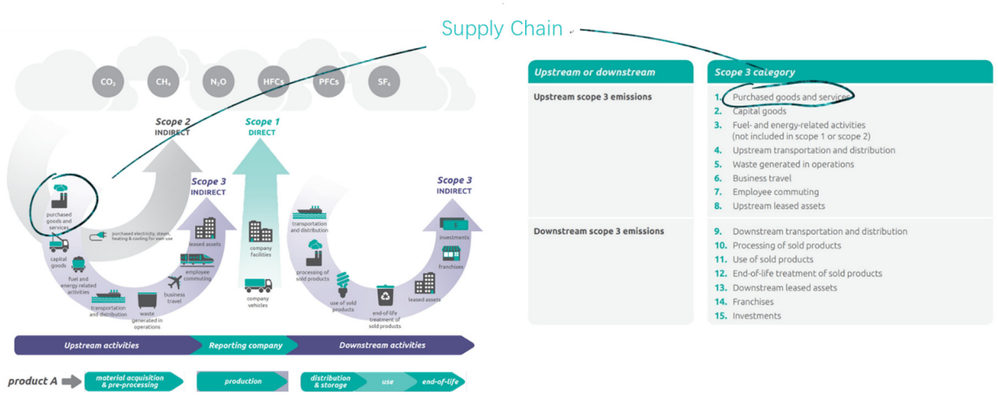
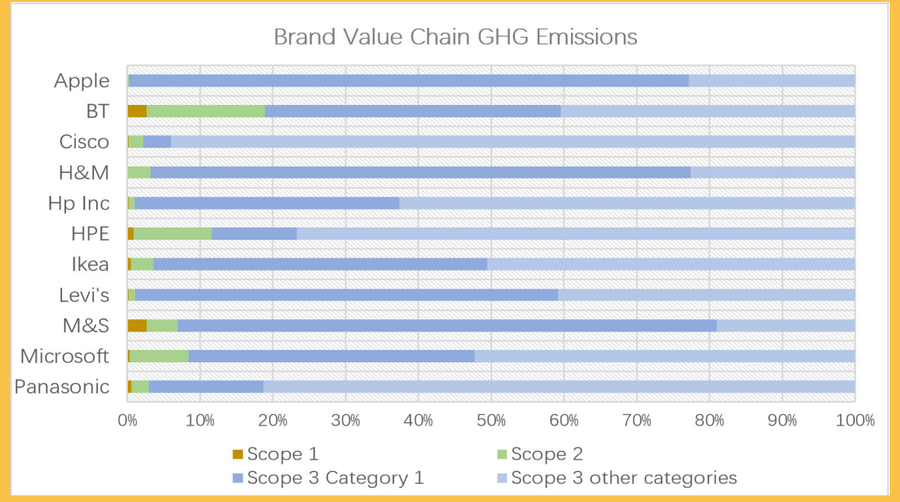


Figure 2. Overview of GHG scopes and emissions across the value chain, and Scope 3 categories

[12] The Greenhouse Gas Protocol (GHG Protocol) is co-sponsored by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). Multiple stakeholders from companies, nongovernmental organizations (NGOs), governments, and other groups create the foundation for a collaborate program. GHG Protocol includes a number of standards such as the "GHG Protocol: Corporate Accounting and Reporting Standard" and the "GHG Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard".



Value chain GHG emissions data already published by brands demonstrates that some brands' Scope 3 emissions account for more than 90% of their total emissions from Scopes 1+2+3, and supply chain GHG emissions (Scope 3, Category 1) can account for up to 70% of Scopes 1+2+3 total emissions.

Brand Supply Chain Emissions Reduction Targets

The key to effective GHG management is to set GHG targets. Establishing energy-saving emissions reduction targets is currently common practice among large multinational companies—more than 80% of Fortune 500 Companies have already established emissions reduction targets, and 14% have already committed to or published Science Based Targets (SBTs).[13] While a positive trend, these targets typically do not cover carbon hotspots, which makes it difficult for companies to implement the most cost-effective mitigation strategies. Although companies are not required to set Scope 3 emissions reduction targets, from a business perspective, they are necessary to establish. The Science Based Targets initiative (SBTi) [14] stipulates that if Scope 3 emissions account for over 40% of a company's total emissions (Scopes 1+2+3), then that company must set Scope 3 emissions reduction targets accordingly[15]. In fact, major brands competing in the same industries have already shifted the nature of competition by reducing their largest source of emissions – Scope 3 – to fully commit to climate mitigation and environmental sustainability.

Among the 118 brands in the IT and textile industries of the CITI evaluation, 17 brands have already begun to respond to their supply chains' GHG emissions and establish supply chain emissions reduction targets.

[13] CDP 2017 Climate Change Disclosure Data

[14] http://sciencebasedtargets.org

[15] http://www.ipe.org.cn/GreenSupplyChain/CITI.aspx

Textile brand supply chain emissions reduction targets

Brand	2020 Goal	2030 Goal	Target rationality[16]	Range of suppliers impacted
Adidas	Reduce strategic suppliers' energy consumption by 20% from a 2014 baseline			Strategic suppliers accounting for 80% of production
H&M		Supply chain carbon neutrality	Committed to SBTi in June 2015	Tier 1 and Tier 2 suppliers
Ikea		Reduce absolute emissions from household products and food supply chain by 15% from a 2016	Approved by the SBTi assessment published June 2018	Tier 1 suppliers
Levi's	Reduce supply chain absolute emissions by 40% by 2025, from a 2016 baseline		Approved by the SBTi assessment published July 2018	Tier 1 and Tier 2 suppliers
M&S		Reduce Scope 3 emissions by 13.3 million tCO2e from a 2017	Approved by the SBTi assessment published June 2017	
Nike	Reduce emissions intensity of key textile dyeing and finishing suppliers by 35% from a 2015 baseline		Committed to SBTi in September 2017	Textile dyeing and finishing suppliers
Puma	Reduce Scope 3, Category 1 emissions intensity by 3% every year until receiving SBTi approval		Committed to SBTi in December 2015	
Tesco		Reduce Scope 3 emissions by 17% from a	Approved by the SBTi assessment published June 2017	
Uniqlo	Reduce energy consumption in major fabric factories by 10% from a 2016 baseline			Major fabric factories accounting for 70% of total output
Walmart		Reduce Scope 3 emissions by one billion tons from a 2015 baseline	Approved by the SBTi assessment published November 2016	

[16] Company targets are independently assessed and approved by SBTi's technical experts. SBTi requires that brands must set Scope 3 targets if the proportion of their Scope 3 emissions exceeds 40% of their total emissions (Scopes 1+2+3). For brands committed to SBTi, all other Scope 3 emissions reduction targets must also pass SBTi evaluation and approval. Therefore, the majority of target rationality compares information disclosed by SBTi, as well as other information related to target rationality published by brands.

IT brand supply chain emissions reduction targets

Brand	2020 Goal	2030 Goal	Target rationality	Range of suppliers impacted
Apple	Apple and its suppliers will produce and source 4 GW of clean energy to offset carbon emissions associated with Apple's manufacturing activities			
BT		Reduce supply chain emissions by 29% from a 2016 baseline	Approved by the SBTi assessment published September 2017	
Cisco	Reduce supply chain emissions by one million tons from a 2012 baseline		Committed to SBTi in May 2016	
Dell	Set emissions reduction targets and report emissions inventories for suppliers and key logistics providers accounting for 95% of purchases		Approved by the SBTi assessment published October 2015[17]	
Fujitsu		Reduce Scope 3 emissions by 30% from a 2013 baseline; in this case, Scope 3 emissions refers to the use of outsourced goods and services, as well as products sold	Approved by the SBTi assessment published August 2017	
HP Inc	By 2025, reduce GHG emissions intensity related to Tier 1 factory suppliers and product transportation by 10% from a 2015 baseline. By 2025, help suppliers reduce their emissions by 2 million tons of CO2e from a 2010 baseline. [18]		Approved by the SBTi assessment published July 2017	Tier 1 suppliers
HPE	By 2025, reduce Scope 3 Category 1 emissions by 15% from a 2015 baseline; direct suppliers (assembly plants and strategic commodity suppliers) accounting for 80% of purchases will set SBTi by 2025		Approved by the SBTi assessment published December 2016	Tier 1 suppliers

[17] The current SBTi does not have specific supply chain emissions reduction targets; due to Dell's merger with EMC Corporation, the SBTi is being revised.
[18] The 2 million tons reduction target was set before the HP company split up, and HP Inc has continued its relevant part.

There are three dimensions for evaluating emissions reduction targets as effective management tools: coverage, strength of emissions reduction, and time scale. The brands listed in the chart above have all set either Scope 3 or supply chain emissions reduction targets, with targets largely referring to specific supply chain emissions reductions. Due to different methods of measurement, the strength of emissions reductions is difficult to directly compare, so here we used SBTi's assessment of target rationality for the evaluation. Most brands will set 2020 and 2030 targets, and some brands will set long-term goals to 2050.

Some brands set independent supply chain emissions reduction targets, such as H&M and Ikea; others set Scope 3 targets, including M&S and Walmart. Singular Scope 3 emissions targets support more comprehensive GHG management with greater flexibility, but the transparency of individual categories within Scope 3 is low, whereas establishing independent supply chain emissions reduction targets is relatively conducive to tracking effectiveness and more challenging areas for supply chain emissions reduction activities.

Regarding types of targets, brands set absolute targets, like Uniqlo and Cisco, or intensity targets, such as Nike and HP Inc., or a combination of the two. Absolute targets and intensity targets both have advantages and disadvantages; absolute targets are good for achieving GHG reductions in the atmosphere and have more specific environmental value, but they have no way to translate to GHG intensity, and decreases could also represent reduced production rather than improved effectiveness. Intensity targets reflect improved GHG performance and provide more comparability between enterprises, but their environmental value is relatively low. Even if GHG intensity decreases, absolute emissions could grow, and its susceptibility to influence by currency indicators is relatively high. A simultaneous combination of Scope 3 absolute emissions and intensity targets for each Scope 3 category would be most useful and reliable.

While managing supply chains, brands may realize there are more carbon hotspots outside of Tier 1 suppliers and start to pay more direct attention to secondary raw material suppliers. Several brands, including Uniqlo and Nike, consequently wrote Tier 2 suppliers directly into their set targets. According to Walmart and Tesco, managing Tier 2 suppliers or above is imperative, because their Tier 1 suppliers are usually traders or distributors.

Brand Supply Chain Emissions Reduction Activities

Practical supply chain emissions reduction targets require brands to pursue a variety of actions and projects to achieve. Brands' supply chain mitigation actions are classified according to the following few aspects:

- Use of low GHG emissions raw materials as an alternative to high GHG raw materials
- Implementation of low carbon purchasing policies
- Encouragement for Tier 1 suppliers to engage their Tier 1 suppliers to participate in emissions reporting
- In cooperation with suppliers, completion of or plans for mitigation activities and projects

Textile brand supply chain emissions reduction activities

Brand	Low carbon raw material replacement	Low carbon purchasing policies	Cooperation with suppliers
Adidas	Uses recycled polyester and BCI cotton		Set energy-saving targets for every supplier
H&M	Uses recycled polyester and recycled cotton		Supplier Energy Efficiency Project; Sustainable Impact Partnership Project (SIPP)
Ikea			Supplier Sustainability Index (SSI); Supplier Renewable Energy Project
Levi's	Uses BCI cotton		NRDC Clean by Design Project; IFC's PaCT
M&S	Uses BCI cotton		Environmental Factory Plan; Supplier Best Practices Exchange Project; LCMP Low Carbon Production; and SAC FEM, among others
Nike	Uses recycled polyester, watermark-free printing, and BCI cotton		Cooperated with 20 factories to increase building energy efficiency and renewable energy use; Nike Energy and Carbon Project; Supply Chain Sustainability Index (SCSI)
Puma			Emissions reductions through SAVE project (2016); 2017 started to pilot Higg index Facility Environmental Module (FEM)
Tesco			Supplier Network
Uniqlo		Tier 2 fabric suppliers set 2020 environmental targets	SAC's Higg Index
Walmart			Project Gigaton; CDP Supply Chain Project; Sustainable Development Index

IT brand supply chain emissions reduction activities

Brand	Low carbon raw material replacement	Low carbon purchasing policies	Cooperation with suppliers
Apple	Uses low carbon aluminum	2018 Supplier Code of Conduct increased provisions to require suppliers to formulate carbon mitigation targets	Supplier Energy Efficiency Project; Supplier Clean Energy Project
BT			CDP Supply Chain Project
Cisco			CDP Supply Chain Project
Dell		2020 goal: Suppliers and key logistics providers accounting for 95% of total material expenditures set emission reduction targets and report emissions inventory	CDP Supply Chain Project
Fujitsu		Requires Tier 1 suppliers to push Tier 2 suppliers to develop emissions reduction activities	
HP Inc	Uses recycled plastics		CDP Supply Chain Project; Energy Efficiency Plan (EEP)
HPE		Requires direct suppliers accounting for 80% of expenditure (assembly plants and strategic commodity suppliers) to set SBTs by 2025	CDP Supply Chain Project

Effective supplier participation projects typically directly cover hotspot suppliers, or brands may choose suppliers that account for a relatively large proportion of purchases. Most brands will encourage suppliers to voluntarily participate in collaborative emissions reduction projects through incentive methods to promote supply chain emissions reduction, such as the use of SAC's Higg index. Fewer brands will develop purchasing policies to force suppliers to reduce emissions.

Apple to incorporate emissions reductions into purchasing policies

Requirements for suppliers to set annual carbon reduction targets were added to the Supplier Code of Conduct, stipulating that suppliers must regularly quantify GHG emissions, set corresponding targets and track implementation progress, as well as reduce energy consumption and use clean energy or other methods.to reduce emissions.

Huawei encourages suppliers to voluntarily participate

Huawei encourages its suppliers to voluntarily participate in the “Supplier Energy-saving Emissions Reduction Initiative”, which proposes more environmental requirements beyond minimum compliance, such as designing five-year energy conservation emissions reduction plans, identifying carbon hotspots, and disclosing climate change information.

How CDP Supply Chain Project drives suppliers to set targets

Setting emissions reduction targets is the first step for companies to actively get a handle on climate opportunities and implement mitigation activities. Brands evaluate the maturity and expectations of suppliers’ individual carbon emissions management by reviewing the targets reported by suppliers and considering their duration, emissions reduction, and coverage. Whether suppliers can effectively set and implement emissions reduction targets is also an important indicator for identifying outstanding suppliers.

Dell requires suppliers to set emissions reduction targets and incorporates them into supplier performance appraisals. Setting emissions reduction targets not only encourages suppliers to practice sustainable development alongside similar international industries, but also demonstrates that Dell and its supply chain can gradually decouple resource consumption and GHG emissions from business growth. Dell and CDP have collaborated on multiple online trainings for suppliers and shared their experiences setting SBTi.

Dell promotes the establishment of GHG targets in its supply chain

Since 2006, Dell has asked its core suppliers to proactively disclose their energy consumption data. As an important part of its 2020 goal, in 2015, Dell began to disclose carbon emissions information within its supplier's social environmental performance assessment guidelines. In 2017, Dell's core suppliers achieved the highest level of carbon disclosure yet – 97%. Since 2018, Dell has placed higher and clearer requirements on its global supply chain, obliging all core suppliers to set carbon reduction targets and encouraging suppliers to set SBTs while incorporating this requirement into the supplier's quarterly business performance assessment criteria; whether or not targets are set directly relates to the supplier’s business relationship to Dell.

By the end of July 2018, 29 core suppliers had set GHG reduction targets and action plans. Dell expects to aggregate and analyze energy and carbon emissions data disclosed in key supply chains as a basis for developing data and scientific evidence for Dell's supply chain reduction targets and the 2030 vision.

Emissions Performance Tracking

Brand’s achievement of supply chain emissions reduction targets cannot be separated from supplier participation. Once a supplier has begun to take action, it is important to provide follow up support and necessary to track implementation progress on a regular basis. Emissions reduction performance tracking should not only regularly calculate supply chain emissions and project emissions reduction to compare with target completion levels, but also add a specific measurement to the degree of participation and performance of suppliers.

Textile brand supply chain emissions performance tracking

Brand	Supply chain emissions (tCO2e)	Quantification method	Proportion of supplier data used to calculate emission	Supplier communication	Volume of communication	Proportion of purchases	Target progress tracking
Adidas	Not yet calculated				137	80%	Absolute target tracking for supplier energy consumption
H&M	12,949,263	Emission factor method	100%	Active participation	147	39%	
Ikea	18,620,854	Collected emissions data from Tier 1 furniture and component suppliers	47%	Active participation	1000	90%	Has not started tracking new target
Levi's	3,039,813	Emissions factor method	0%	Active participation	52	90%	Has not started tracking new target
M&S	5,100,000	Estimated based on production yield	0%	Cooperation / innovation	200	90%	Has not started tracking new target
Nike	994,129	Collects suppliers' monthly energy consumption data and chooses emissions factor calculation	100%	Cooperation / innovation	104		Tracking targets for Tier 2 supplier emissions intensity
Puma	120,023	Collects Tier 1 and core Tier 2 materials supplier data	80%	Emissions reduction incentives	159	80%	Target tracking for Scope 3 Category 1 intensity
Tesco	38,927,460	Estimates carbon footprint	20%				Absolute target tracking for Scope 3
Uniqlo	3,371,932[19]	Collected by the Higg Index				70%	Has not started tracking new target
Walmart	49,472,163	Collected through CDP Supply Chain Project	100%	Active participation	2000	70%	Absolute target tracking for Scope 3

[19] Emissions data from major fabric factories.

IT brand supply chain emissions performance tracking

Brand	Supply chain emissions (tCO2e)	Quantification method	Proportion of supplier data used to calculate emission	Supplier communication	Volume of communication	Proportion of purchases	Target progress tracking
Apple	228,00,000	LCA estimates while using firsthand data and adjustments	50%	Compliance	200	97%	Progress reports for suppliers' clean energy projects; has not started tracking new targets
BT	2,624,505	EEIO	47.42%	Active participation	180	47%	Has not started tracking new target
Cisco	1,373,745	CDP Supply Chain Project collects from contract manufacturers, ODM/ OEMs, and component manufacturers	77%	Active participation	500	80%	Target tracking for Scope 3 emissions reduction
Dell	Not yet calculated	Collected through CDP Supply Chain Project		Active participation		90%	Progress tracking for suppliers' setting and reporting of emissions data
Fujitsu	2,432,000	Emissions factor method	0%	Active participation	1600	98.3%	Absolute target tracking for Scope 3
HP Inc	14,700,000	LCA estimates	0%	Active participation	130	90%	Has not started tracking new target
HPE	1,544,000	LCA estimates	0%	Active participation	67	85%	Has not started tracking new target

Scope 3 emissions occur in enterprise's value chains, and there are still certain challenges to their calculation and management. Although many enterprises have calculated their supply chain emissions, there is still much room for improvement within calculation methods and disclosure. According to CDP data, only 25% of enterprises calculate their Scope 3 emissions by collecting supplier data.

GHG Protocol stipulates that Scope 3 Category 1 estimates must at a minimum include all upstream emissions from purchased products (cradle-to-gate) to ensure full coverage of emissions occurring at any stage during the product life cycle. Due to data availability, changing supplier relationships, high costs and other factors, only a minority of brands are committed to collecting this firsthand data. The advantage of using data quantified by suppliers firsthand is that firsthand data presents a more accurate account of brand's supply chain activities, and can increase awareness of GHG awareness, transparency, and management. Furthermore, it can be used to track the progress of emissions reduction targets more accurately. With secondhand data, suppliers' GHG emissions reduction activities are harder to track, thereby limiting the ability to track progress on emissions reduction targets.

Walmart uses 670 suppliers (commodity manufacturers and service providers) participating in the CDP Supply Chain Project to measure the GHG emissions of its supply chain. Suppliers use different methods based on sales, purchases, sales volume and other factors to allocate their Scopes 1+2 emissions to Walmart. According to Walmart, as the retailer, calculating the Scope 3 emissions of purchased goods is particularly complicated; Walmart estimates that emissions from their supply chain is 10 times that of their Scopes 1+2 emissions. Walmart is therefore intent on following suppliers' participation in supply chain emissions management and emissions reduction.

For the three columns in the table above representing types of supplier communication, volume of communication and proportion of purchases, information comes from the CDP Climate Change Questionnaire. These categories measure the scale of communication between brands and suppliers, but don't provide an actual metric for the degree of supplier participation and performance. To measure these factors, brands may reference content in the following table.

Degree of	Number of suppliers required to submit firsthand data		Performance	Tier 1 suppliers' Scopes 1+2 emissions	
	Number of suppliers that submitted firsthand data			Allocation of emissions to the brand	
	Number of suppliers that published GHG emissions data			Method used to quantify and allocate supplier emissions data	
	Number of suppliers that set open emissions reduction targets			Proportion of total expenditure	

Recommendations

IMMEDIATE ACTION

The majority of brands have committed to GHG emissions reduction; yet after calculating emissions data, setting emissions reduction targets, and designing climate strategies, as 2020 soon approaches, actualizing emissions reductions still needs to move beyond the pilot phase. We recommend that brands start by pushing suppliers to quantify and disclose their GHG emissions data.

1

SET EFFECTIVE TARGETS

For supply chain GHG emissions reduction, several brands are still calculating the annual emissions for their baseline year. We recommend calculating with suppliers' firsthand data and pushing for supplier quantification and disclosure of Scope 3 emissions, extending to upstream supply chain emissions to cover carbon hotspots in the value chain.

2

CALL UPON GOVERNMENT TO CREATE CONDITIONS FOR BUSINESS

Call upon government to accelerate the monitoring, reporting and verification of enterprise-level GHG emissions reduction data and promote data disclosure to provide a more solid foundation for brands to develop quantitative supply chain emissions reduction targets. This would also provide policy infrastructure to brands to promote continuous supply chain disclosure in order to confirm the values and credibility of emissions reduction data.

3

Appendix I. Evaluation criteria system

Criteria		Evaluation indicator
Emissions Information	1. GHG emissions data	F Brand has not disclosed any GHG emissions information D Brand has publicly disclosed total GHG emissions or total energy consumption C Brand has publicly disclosed Scope 1 and Scope 2 emissions B Brand has publicly disclosed Scope 1, Scope 2 and Scope 3:Purchased goods and services emissions A Brand has publicly disclosed entire Scope 1, Scope 2 and Scope 3 emissions(all relevant sources)
	2. Emissions methodology	F Brand has not yet calculated Scope 3 emissions D Brand has publicly disclosed an extensive carbon hotspot analysis and understands where in the value chain the majority of its embedded emissions are C Brand has calculated Scope 3:Purchased goods and services emissions using data obtained from suppliers B Brand commits to improve the quality of supply chain emissions data by collecting supplier data, percentage of emissions calculated using data obtained from suppliers accounts for 80% A GHG emissions management extends to indirect carbon hotspot suppliers, and brand commits to extend to the whole upstream value chain
Targets and Performance	3. Emissions reduction targets	F Brand has not set up energy use and GHG emissions reductions targets D Brand has publicly disclosed active Scope 1+2 emissions reduction target C Brand has publicly disclosed active Scope 3 GHG emissions reduction target B Brand has publicly disclosed active supply chain emissions reduction target A Brand verifies the rigor of supply chain emissions reduction target
	4. Performance against targets	F Brand has not published performance against targets D Brand has published progress made against Scope 1+2 emissions reduction target C Brand has published progress made against Scope 3 emissions reduction target B Brand has published progress made against supply chain emissions reduction target A Brand has published details on supplier engagement and performance against their Scope 1+2 emissions reduction target
Emissions Reduction Actions	5. Emissions reduction initiatives	F Brand has not published emissions reduction initiatives D Brand has publicly disclosed initiative to reduce energy use and GHG emissions C Brand has publicly disclosed emissions reduction initiatives with the engagement of suppliers B Brand has pushed carbon hotspot suppliers to calculate and disclose their GHG emissions A Brand has pushed carbon hotspot suppliers to set emissions reduction targets and disclose performance against targets
	6. Pushed supply chain in China to reduce emissions	F Brand has not yet push suppliers in China to reduce emissions D Brand has engaged suppliers in China to reduce emissions through a variety of ways C Brand has identified and openly published best practices to reduce the energy usage and carbon footprint of its supply chain in China B Brand has engaged at least some of its identified carbon hotspot suppliers in China to reduce emissions A Suppliers are actively involved in achieving voluntary emissions reduction and extending upstream
Strategy and Governance	7. Climate strategy and governance	F Brand has not published any climate-related strategy D Brand has published climate strategy C Climate-related issues are integrated into brand's business strategy, and brand has specific climate-related risk management procedure B Climate-related issues are integrated into board-level oversight A Brand has published strategy or policy for pushing supply chain emissions reduction

Appendix II. Evaluation basis

The basis for this evaluation includes brands' publicly disclosed climate action information, brands' 2017 CDP Climate Change Program, the 2017 CDP Supply Chain Program, as well as SBTi and PRTR information.

CDP Climate Change Program	CDP is committed to transforming global business operations, controlling the risks of climate change, and protecting natural resources. Our goal is to reduce companies' GHG emissions and mitigate climate change risks. CDP believes that raising awareness through measurement and disclosure is critical to effectively managing carbon emissions and climate change risks. CDP represents 658 institutional investors ($87 trillion in accumulated assets) toward companies invested in, and 115 sourcing organizations (with a cumulative purchasing power of $3.3 trillion) toward suppliers, requesting climate risks and information about low carbon opportunities. The main indicators of the CDP Climate Change Questionnaire include: • Climate change related management and governance • Assessment of risks and opportunities for climate change • Corporate GHG emissions accounting Of the 118 brands evaluated in this report, 50 brands publicly responded to the 2017 CDP Climate Change Questionnaire. The responses to Governance and Strategy, Goals and Performance, Emissions Data and other modules in the questionnaire is regarded as one of the important sources of public brand information used in this report.
CDP Supply Chain Program	As of 2018, the CDP Supply Chain Program has a total of 115 member companies, and member companies authorize CDP to request suppliers to respond. Suppliers only need to respond to a questionnaire once a year to meet the requirements of multiple stakeholders. From April to August each year, CDP helps suppliers report environmental management information through the CDP online response system. After collecting the suppliers' responses, CDP provides its Supply Chain Program Members with multiple data analysis tools to understand the impacts of their supplier engagement on climate action and gain insights into and evaluate the environmental performance of their supply chain. In 2018 on behalf of all its Supply Chain Members, CDP Supply Chain Program sent requests to over 11,500 suppliers globally. Among the 118 brands evaluated in this report, 10 brands participated in the project (in 2017) to manage their suppliers' climate performance. Engaging with Chinese suppliers to respond to CDP's questionnaire and make responses public has also become one of the important sources of public information used in this report.
Science Based Targets initiative (SBTi)	Initiated by CDP, the World Resources Institute (WRI), the World Wildlife Fund (WWF) and the UN Global Compact (UNGC), Science Based Targets clarify what companies need to accomplish in order to reduce the speed and magnitude of their GHG emissions if it is to remain consistent with the Paris Agreement target of controlling global temperature rise of less than 2 °C. Of the 118 brands evaluated in this report, 14 brands have already released their carbon emission target approve by SBTi. 19 brands have promised to set up science-based emission reduction target. Participating in SBTi and setting science-based emission reduction targets is one of the important references to verify the rationality and scientificity of one brand's carbon emission reduction target.
IPE-PRTR Project	IPE established a voluntary disclosure platform for PRTR information in 2013 to push high environmental impact production companies to disclose their emissions data, including data on hazardous chemicals. Through the CITI evaluation, IPE continues to push brands sourcing from China, and requests that high environmental impact suppliers publish annual data on IPE's website. IPE's PRTR template and disclosure platform covers a more comprehensive list of pollutants: not only hazardous chemicals, but also conventional chemicals, as well as water use and efficiency, energy efficiency and carbon emissions[20]. Therefore, the PRTR submission status of the brand-driven suppliers also became one of the evaluation criteria for brand emissions reduction actions.

[20] PRTR: Establishing a Pollutant Release and Transfer Register in China http://wwwoa.ipe.org.cn//Upload/201805091156300411.pdf

Appendix III. Connection to other frameworks

SCTI	CDP	SDG	TCFD	DJSI	GRI
1	C6.1, C6.3, C6.5, C7.3b, C7.3c, C7.6b, C7.6c, C8.2c	Goal 7 Goal 12 Goal 13	Metrics & Targets recommended disclosure b)	Scope 3	G4-EN3, G4-EN15, G4-EN16, G4-EN17
2	C6.5	Goal 12 Goal 13	Metrics & Targets recommended disclosure b)	Scope 3	
3	C4.1, C4.1a, C4.1b, C4.2	Goal 7 Goal 12 Goal 13	Metrics & Targets recommended disclosure c)	Climate-related targets	
4	C4.1a, C4.1b, C4.2	Goal 7 Goal 12 Goal 13	Metrics & Targets recommended disclosure a) Metrics & Targets recommended disclosure c)	Climate-related targets	
5	C4.3b, C6.5, C12.1, C12.1a	Goal 7 Goal 12 Goal 13	Metrics & Targets recommended disclosure b)	Scope 3	
6	C12.1, C12.1a	Goal 12			
7	C1.1, C1.1a, C1.1b, C1.2, C1.2a, C2.2, C3.1, C3.1c	Goal 12 Goal 13	Governance recommended disclosure a) Governance recommended disclosure b) Risk Management recommended disclosure c) Strategy recommended disclosure b)	Governance and management incentives	G4-1, G4-34, G4-36

Institute of Public and Environmental Affairs (IPE)

The Institute of Public & Environmental Affairs (IPE) is a non-profit environmental research organization registered and based in Beijing, China. Since its establishment in June 2006, IPE has dedicated itself to collecting, collating and analyzing government and corporate environmental information to build a database of environmental information. IPE's two platforms – the Blue Map website and the Blue Map app – integrate environmental data to serve green procurement, green finance and government environmental policymaking, using cooperation between companies, government, NGOs, research organizations and other stakeholders and leveraging the power of a wide range of enterprises to achieve environmental transformation, promote environmental information disclosure and improve environmental governance mechanisms.

CDP

CDP is a London-based international nonprofit organization dedicated to driving businesses and governments to reduce greenhouse gas emissions and protect water and forest resources. CDP was selected by investors as the world's number one climate research institution. CDP works with institutional investors with total assets of $87 trillion to motivate companies to disclose and manage their environmental impact through the power of investors and buyers. In 2017, more than 6,300 companies with a global market capitalization of 55%, and more than 500 cities and 100 states and territories reported their environmental data through the CDP platform, making CDP the most abundant platforms in the world for companies and governments to promote environmental reform and information.

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