APPAREL AND FOOTWEAR SECTOR

SCIENCE-BASED TARGETS GUIDANCE

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This guidance was developed by World Resources Institute (WRI) on behalf of the Science Based Targets initiative (SBTi).

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The SBTi is a collaboration between CDP, the United Nations Global Compact, World Resources Institute and the World Wide Fund for Nature (WWF). The SBTi defines and promotes best practices in science-based target setting and independently assesses companies' targets.

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HIGHLIGHTS

- The greenhouse gas (GHG) emissions of the global apparel and footwear sector are significant and have the potential to increase considerably given trends such as fast fashion and growing consumption in emerging middle-income economies.
- Given the environmental and business implications of increasing global emissions, the sector should actively mitigate GHG emissions to ensure that they are in line with what climate science says is needed to limit global warming to 1.5 degrees Celsius (°C) above pre-industrial temperatures.
- This guidance supports companies across the apparel and footwear sector value chain to set ambitious, science-based GHG emissions reduction targets (SBTs). The guidance refines existing corporate guidance by clarifying which target-setting methods are applicable for this sector, including case studies on best practices in target-setting and emissions reductions.
- Value chain (scope 3) emissions are significant for this sector, and companies face numerous barriers to address them. This guidance identifies emissions hot spots for this sector and provides guidance on measuring and reducing these emissions.
- Collaboration is key for this sector to tackle emissions, and ample opportunities exist. This guidance highlights potential areas of collaboration across the value chain and the variety of organizations, tools, and initiatives that companies can leverage to develop and work toward their SBTs.
- To ensure relevance and credibility, this guidance was developed in close consultation with leading industry experts representing apparel and footwear companies, consultancies, and nongovernmental organizations (NGOs) with relevant expertise.

CONTEXT

Under the 2015 Paris Agreement, national governments have committed to limit global temperature increase to well below 2°C and pursue efforts to limit temperature increase to 1.5°C (UNFCCC 2015). Companies will play a key role in meeting these commitments, and as of June 2019, more than 550 companies, including over 20 in the apparel and footwear sector, have approved SBTs or have committed to setting such targets.[1]

Over the last several years, there has been increasing interest from apparel and footwear companies in setting science-based emissions reduction targets. This is because many companies understand that GHG emissions are significant for the sector across the value chain and will likely increase given industry growth—unless the sector changes course.

GUIDANCE OBJECTIVES AND AUDIENCE

The Science Based Targets initiative (SBTi) aims to mobilize companies across the apparel and footwear value chain to set ambitious SBTs. The objectives of this document are to

- provide clarity on credible approaches to setting SBTs;
- increase consistency across companies' targets in the sector;
- identify sector-specific barriers for setting SBTs and recommend ways to address these barriers;
- define and provide examples of good practices; and
- highlight opportunities for companies to collaborate in reducing GHG emissions.

This guidance is intended for companies across the apparel and footwear value chain—retailers, brands, finished goods manufacturers, mills, etc.—that are primarily engaged in activities that contribute to the production, sale, and transportation of apparel and footwear products.[2] The guidance includes general depictions of the sector value

chain (see Figures 3 and 4) to help companies determine how the different scopes of GHG emissions pertain to them based on their business activities. We also include several examples of companies' GHG inventories in section 2.4 to help readers understand how emissions generally break down across scopes.

SUMMARY OF SCOPE 1, 2, AND 3 REQUIREMENTS

In section 3, we include SBTi criteria and recommendations (Version 4.0, published in April 2019) for obtaining SBTi approval for scope 1 and 2 targets (SBTi 2019b).[3] As defined in the GHG Protocol Corporate Accounting and Reporting Standard, scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect emissions from the generation of purchased energy (WRI and WBCSD 2004). Such targets are required to be consistent with a well below 2°C climate stabilization pathway, with greater efforts encouraged toward limiting warming to 1.5°C. In general, the scope 1 and 2 portion of total emissions is higher for finished goods and material suppliers than it is for brands and retailers.

Apparel and footwear companies have three methods for setting scope 1 and 2 targets (for details of these methods, see section 3.2, "Methods for Setting SBTs for Scopes 1 and 2 for Apparel and Footwear Companies"):

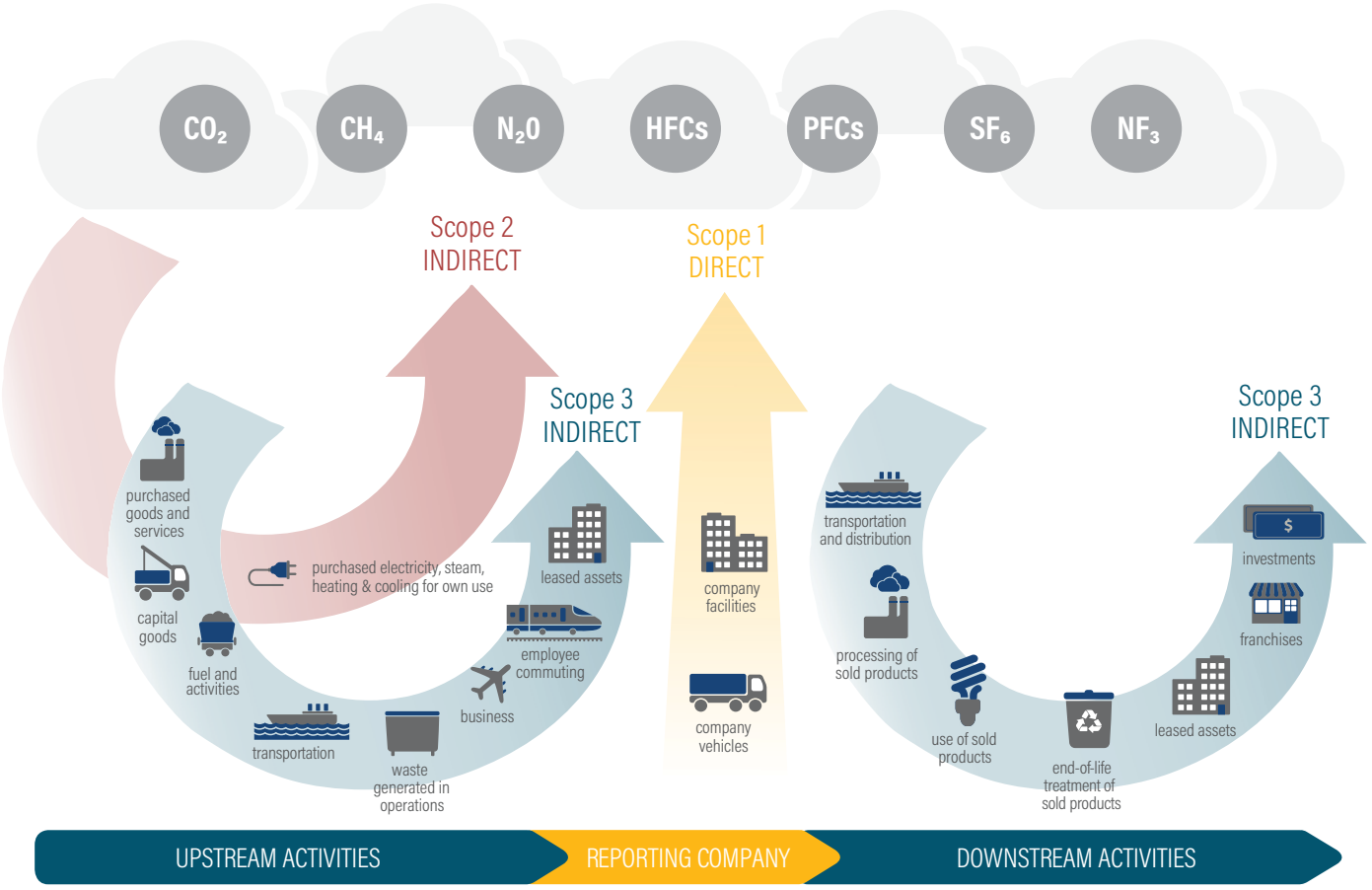
- **Absolute contraction:** Reduce absolute emissions by the same percentage to keep global temperature increase within well below 2°C (minimum 2.5 percent annual linear reduction) or 1.5°C (minimum 4.2 percent annual linear reduction).
- **Physical intensity:** Reduce emissions intensity per physical production output with a unit that's representative of a company's portfolio (e.g., per pair of shoes for a footwear company), which, when translated to absolute emissions reduction terms, is in line with the absolute contraction approach.[4]
- **Economic intensity:** Reduce emissions intensity per economic value with a unit that's representative of a company's portfolio (e.g., revenue or value added), which, when translated to absolute emissions reduction terms, is in line with the absolute contraction approach.

Section 4 includes criteria Version 4.0 for scope 3, while section 5 includes additional detail on purchased goods and services, a scope 3 category that is significant for many apparel and footwear companies. Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions (WRI and WBCSD 2004). As the examples throughout the document depict, scope 3 emissions are typically the majority of total emissions for brands and retailers, while the significance of scope 3 for suppliers depends on the nature of the suppliers' activities (scope 1 and 2 emissions tend to be more significant for suppliers).

There are four available methods for setting scope 3 targets, and they can be used on one or more scope 3 categories:

- **Absolute contraction:** Reduce absolute emissions by the same percentage to keep global temperature increase within 2°C (minimum 1.23 percent annual linear reduction). While 2°C is the minimum level of ambition for scope 3 targets, companies are encouraged to pursue greater efforts toward a well below 2°C (minimum 2.5 percent annual linear reduction) or a 1.5°C trajectory (minimum 4.2 percent annual linear reduction).
- **Physical intensity:** Reduce emissions intensity per physical production output with a unit that's representative of a company's portfolio, which, when translated to absolute emissions reduction terms, is in line with the absolute contraction approach. Alternatively, companies can drive physical intensity reduction to cap absolute emissions at a base year level and achieve a physical intensity reduction at a minimum rate of 2 percent in annual linear terms.
- **Economic intensity:** Reduce emissions intensity per value added by at least an average of 7 percent year on year.
- **Supplier engagement:** Commit to having a specific percentage of suppliers (as a percentage of spend or GHG emissions) with their own SBTs within five years from the date the company's target is submitted to the SBTi for validation.

Figure 1 | Overview of Scopes and Emissions across a Value Chain



Note: Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), Nitrogen trifluoride (NF_3).
Source: WRI and WBCSD 2004.

CALL TO ACTION AND COLLABORATION

This guidance is intended to provide direction on the mechanics of setting SBTs. It is not meant to show how companies can achieve the required emissions reductions. That said, we have included a framework in section 7 that describes the two primary ways for the sector to reduce emissions in line with science:

- Aggressively deploy energy efficiency and renewable energy across the value chain.
- Substitute materials with lower environmental impacts.

Companies can also reduce emissions by producing and selling fewer items, although they would need to create business models (e.g., rental) that support such an approach.

In section 8, we list key initiatives and organizations that apparel and footwear companies are working with as part of their overall work on climate change to reduce GHG emissions.

1

INTRODUCTION

1.1 GLOBAL CONTEXT

Under the 2015 Paris Agreement, 195 national governments committed to limit global temperature increase to well below 2 degrees Celsius (˚C) and pursue efforts to limit temperature increase to 1.5˚C above pre-industrial levels. In 2018, the Intergovernmental Panel on Climate Change (IPCC) released the special report *Global Warming of 1.5˚C* (SR1.5), which provides strong evidence that limiting warming below 1.5˚C will significantly lower climate impacts and humanitarian crises linked to drought, sea level rise, flooding, extreme heat, and ecosystem collapse. To limit warming to 1.5˚C, the IPCC asserts that global greenhouse gas (GHG) emissions must be cut by 45 percent from 2010 levels by 2030 and reach net zero emissions around 2050 (IPCC 2018).

Despite the efforts of governments and other actors, anthropogenic GHG emissions continue to increase. Under current trajectories, global mean temperatures are projected to increase by 2.2˚C to 4.4˚C by the end of this century. Even with the best efforts under existing country-level commitments, global emissions in 2030 will be about 90 percent higher than they should be under 1.5˚C scenarios (Climate Action Tracker 2018).

Companies will play a pivotal role in ensuring that the world limits temperature increases to well below 2˚C or 1.5˚C. Many companies, recognizing the risks and opportunities that climate change represents, have set GHG emissions reduction targets and have worked to reduce emissions. However, many targets do not meet the ambition required to realize a well below 2˚C or 1.5˚C future.

1.2 DEFINING SCIENCE-BASED TARGETS

According to SBTi, companies' targets to reduce GHG emissions are considered science-based if they are aligned with the latest climate science deemed necessary to meet the goals of the Paris Agreement: to limit global warming to well below 2˚C above pre-industrial levels and pursue efforts to limit warming to 1.5˚C.[5]

1.3 OVERVIEW OF THE SCIENCE BASED TARGETS INITIATIVE

The Science Based Targets initiative (SBTi), a collaboration among the CDP (formerly the Carbon Disclosure Project), the United Nations Global Compact (UNGC), World Resources Institute (WRI), and the World Wide Fund for Nature (WWF), champions SBT setting to boost companies' competitive advantage in the transition to a low-carbon economy. Through setting and meeting science-based targets (SBTs), companies may receive benefits, such as increasing business resilience and competitiveness, thereby driving innovation and transforming business practices, building credibility and reputation, and influencing and preparing for shifts
in public policy.

The SBTi's overall aim is that by the end of 2020, science-based targets (SBTs) will become standard business practice, and corporations will play a major role in driving down global GHG emissions.[6]

1.4 WHY GUIDANCE FOR THE APPAREL AND FOOTWEAR SECTOR?

Given the significance of GHG emissions from the apparel and footwear sector and the growing number of companies that have set or committed to set SBTs, WRI developed this guidance to support companies in this process.[7] The term *companies* in this document refers to entities across the apparel and footwear value chain—retailers, brands, finished goods manufacturers, mills, etc.—that are primarily engaged in activities that contribute to the production and sale of apparel and footwear products. See Figures 3 and 4 for a visual depiction of the sector value chain.

With more people in emerging economies moving into the middle class and the continued growth in fast fashion, the contribution of the sector to global emissions is likely to grow.[8] Global apparel production is estimated to have doubled between 2000 and 2014, and consumers keep most types of apparel only half as long as they did 15 years ago (Remy et al. 2016).

1.5 OBJECTIVES OF THE GUIDANCE

By developing guidance for setting SBTs in the apparel and footwear sector, the SBTi aims to mobilize apparel and footwear companies globally to set ambitious, science-based GHG emissions targets for their operations and value chains. This guidance document aims to

- provide clarity on credible approaches to setting SBTs for operations and value chains;
- increase consistency across companies' targets in the sector;
- identify barriers for setting SBTs and provide recommendations to address these barriers;
- define and provide examples of best practices; and
- highlight opportunities for companies to collaborate in reducing emissions.

To date, most of the commitments and approved targets are from apparel and footwear brands and retailers. With the guidance published, the SBTi envisions that by the end of 2020, 50 of the largest apparel and footwear companies will set SBTs.

1.6 AUDIENCE AND HOW TO USE THIS DOCUMENT

This document offers sector-specific guidance for apparel and footwear companies to set SBTs. It also references Version 4.0 of the SBTi criteria and recommendations in section 3 (scope 1 and 2) and 4 (scope 3).[9] "The terms *shall* and *must* are used for criteria required by the SBTi, whereas the term *should* is used for recommendations within the criteria and throughout the guidance."[10]

While this document offers examples of good practices for target setting, it is not intended to provide guidance on implementing GHG emissions reduction measures. Companies may deploy a variety of measures to reduce GHG emissions (e.g., increasing energy efficiency, switching to renewable energy). Determining which strategy is most appropriate for any one company is beyond the scope of this document and the SBTi. That said, see section 7 for an illustrative framework for how companies can achieve the reductions required to achieve SBTs.

1.7 GUIDANCE DEVELOPMENT PROCESS

To develop this guidance, WRI gathered input from a variety of sources, including a 25-member Expert Advisory Group (EAG) comprising individuals from apparel and footwear companies, consultancies, and NGOs with sectoral and/or GHG accounting expertise. See Appendix for members of the EAG. We also developed a broader stakeholder group with which we shared and received feedback on interim documents.

In May 2018, WRI held an open stakeholder feedback session for the first draft of the guidance at the Sustainable Apparel Coalition conference in Vancouver. The more than 70 individuals from different areas of the industry in attendance represented brands, retailers, suppliers, NGOs, consultancies, and others. In parallel, WRI solicited feedback from a wider audience via an online survey. We emailed the survey to over 400 individuals who signed up as stakeholders for this project, and the survey was made available for others to complete via the SBTi website.

In September 2018, in Ho Chi Minh City, Vietnam, WRI shared a summary of the draft guidance in PowerPoint form with various Vietnamese stakeholders, including apparel and footwear suppliers, local brand representatives, and individuals from industry associations. WRI also shared a link to the draft guidance for participants to review in detail after the meeting.

Based on the above-mentioned feedback from stakeholders, WRI revised the first draft and produced a second draft in November 2018.[11] WRI solicited feedback on the second draft from the EAG and conducted an internal WRI review process.[12]

In April 2019, WRI updated the draft to reflect SBTi's latest requirements and recommendations in response to SR1.5. We incorporated additional feedback from internal and external experts for the final guidance.

1.8 APPROVED TARGETS AND COMMITMENTS

As of June 2019, five apparel and footwear companies have approved SBTs:

- ASICS
- H&M
- Kering
- Levi Strauss & Co.
- Skunkfunk

In addition to the companies just mentioned, four multiline retailers that sell apparel have approved SBTs:

- Marks & Spencer
- Target Corporation
- Tesco
- Walmart

More than 20 other companies in the apparel and footwear sector have committed to setting SBTs. The most recent list can be found on the SBTi website.[13]

Table 1. Apparel and Footwear Companies with Approved SBTs

Brand	Approved Targets
ASICS	ASICS commits to reduce absolute scope 1 and 2 GHG emissions 33 percent by 2030 from a 2015 base year. ASICS also commits to reduce scope 3 GHG emissions from purchased goods and services and end-of-life treatment of sold products 55 percent per product manufactured by 2030 from a 2015 base year.
H&M	H&M Group commits to reduce absolute scope 1 and 2 GHG emissions 40 percent by 2030 from a 2017 base year. H&M Group also commits to reduce absolute scope 3 GHG emissions from purchased raw materials, fabric, and garments 59 percent per piece by 2030 from a 2017 base year.
Kering	Kering commits to reduce scope 1, scope 2, and scope 3 emissions from upstream transportation and distribution, business air travel, and fuel- and energy-related emissions 50 percent per unit of value added by 2025 from a 2015 base year. In addition, Kering commits to reduce scope 3 emissions from purchased goods and services 40 percent per unit of value added within the same time frame.
Levi Strauss & Co	Levi Strauss & Co. commits to reduce absolute scope 1 and scope 2 GHG emissions 90 percent by 2025 from a 2016 base year. Levi Strauss & Co. also commits to reduce absolute scope 3 emissions from purchased goods and services 40 percent by 2025 from a 2016 base year.
Skunkfunk	Skunkfunk commits to reduce absolute scopes 1 and 2 GHG emissions 37 percent by 2025 from a 2017 base year. Skunkfunk also commits to reduce absolute scope 3 GHG emissions from purchased goods and services, business travel, and upstream transportation and distribution 15 percent by 2025 from a 2017 base year.

Table 2. Multiline Retailers with Approved SBTs

Brand	Approved Targets
Marks & Spencer	British multinational retailer Marks & Spencer commits to reduce absolute scope 1 and 2 GHG emissions 80 percent by 2030 below 2007 levels and has a longer-term vision to achieve 90 percent absolute GHG emissions reductions by 2035 below 2007 levels. Marks & Spencer also commits to reduce scope 3 GHG emissions by 13.3 metric tons of carbon dioxide equivalent between 2017 and 2030.
Target Corporation	U.S. retailer Target commits to reduce absolute scope 1 and 2 emissions and scope 3 GHG emissions from retail purchased goods and services 30 percent by 2030 from a 2017 base year. Target also commits that 80 percent of its suppliers by spend covering all purchased goods and services will set science-based scope 1 and scope 2 targets by 2023.
Tesco	British multinational grocery and general merchandise retailer Tesco commits to reduce scope 1 and 2 GHG emissions 60 percent by 2025, using a 2015 base year. Tesco also commits to reduce its scope 3 GHG emissions 17 percent by 2030, using a 2015 base year. The emissions categories covered by the scope 3 target are purchased goods and services (supply chain), fuel- and energy-related activities, upstream transportation and distribution, and waste generated in operations.
Walmart	American multinational retailing corporation Walmart commits to reduce absolute scope 1 and 2 GHG emissions 18 percent by 2025, from 2015 levels. Walmart will also work to reduce carbon dioxide equivalent (CO_2e) emissions from upstream and downstream scope 3 sources by one billion tons between 2015 and 2030.

Case Study: Levi Strauss & Co.

In July 2018, Levi Strauss & Co. (LS&Co.) announced its target to reduce scope 1 and 2 emissions by 90 percent and scope 3 emissions from purchased goods and services by 40 percent by 2025 (with a 2016 base year). The support for such ambitious targets comes from the very top of the company: In the words of Chip Bergh, president and CEO, "The scientific consensus is clear: Global climate change is a serious threat that requires urgent action. For our industry and our planet to survive and thrive into the future, business as usual is no longer an option."

In developing its scope 1 and 2 target, LS&Co. wanted to set a target that would challenge both the company and the industry to take serious action that would deliver meaningful impact. The company started by reviewing peer targets and initiatives as well as its own efforts on energy efficiency and renewable energy.

The company worked to develop its reduction strategy at the same time that it was undertaking the process to develop a reduction target. To achieve the company's ambitious scope 1 and 2 target, LS&Co. plans to prioritize on-site renewables for its largest properties to lead by example, while asking suppliers to make similar investments and demonstrating its commitment to customers, employees, and peers. LS&Co. believes that investment in on-site energy efficiency and renewables projects and green utility contracts will not only achieve a more tangible and direct reduction in its own emissions, but also have the outsized impact that it's aiming for by setting an SBT. Past experience with energy-efficiency investments driving cost savings and positive media coverage (e.g., a LEED platinum distribution center) helped in making the case to senior management.

With respect to scope 3, LS&Co. believed it was important to set an ambitious and industry-leading target that decoupled business growth from GHG emissions. To determine its scope 3 inventory and reduction goal, LS&Co. started with a life-cycle analysis of three key products, the 501 jean, the Dockers khaki, and the women's skinny jean. LS&Co. rounded out its assessment by surveying select suppliers to collect enough energy data to make assumptions for estimating its GHG emissions. From this, LS&Co. compiled its 2016 base year scope 3 inventory with updated product volume and source country data to reflect business growth.

The scope 3 target to reduce emissions by 40 percent will largely be achieved by expanding the International Finance Corporation (IFC) Partnership for Cleaner Textiles (PaCT). LS&Co. has co-developed a program for access to low-interest trade financing with IFC for its suppliers: The interest rate is based on how well suppliers score on LS&Co.'s terms of engagement (which include energy efficiency and energy type for all Tier 1 and Tier 2 suppliers). Through PaCT, IFC will also provide additional access to loans for energy-related investments by suppliers. While LS&Co. will split the cost of the PaCT assessment with its suppliers and the IFC, suppliers are responsible for funding any recommended capital expenditures.

LS&Co. is exploring how supplier-specific targets might be formulated, as these may further improve global relationships and encourage developing energy markets to more rapidly transition to cleaner sources. LS&Co. is also in the beginning stages of developing an off-site aggregated renewables program with the IFC, and brand peers will be invited to participate in that program.

Source: Levi Strauss & Co. 2019 and WRI authors.

2

OVERVIEW OF THE APPAREL AND FOOTWEAR INDUSTRY

We present below select data and context about the global apparel and footwear industry to ground the discussion about SBTs.

2.1 SECTOR ECONOMICS

According to research from the Boston Consulting Group and the Global Fashion Agenda, the global apparel and footwear industry had sales of €1.5 trillion in 2016, and this is projected to increase to €2 trillion by 2030 (BCG and GFA 2017).[14] The industry employs more than 60 million people globally, and women represent the vast majority of the workforce in manufacturing (up to 81 percent in Cambodia, Vietnam, and Thailand) (BCG and GFA 2017).

The apparel and footwear sector is a significant economic force in a number of emerging economies. For example, the sector accounts for 80 percent of export earnings and 20 percent of gross domestic product (GDP) in Bangladesh (IFC 2014) and is the second largest earner of foreign currency in Vietnam, generating US$27 billion from exports in 2016 (Voice of Vietnam 2017).

While coal use for electricity production has declined in some Western countries (e.g., the United States), it is on the rise in a number of countries in which apparel and footwear are manufactured (U.S. Energy Information Administration 2019). Coal is an attractive option, given the rapid growth in demand and desire for cheap energy. To illustrate, the Vietnamese government plans to have roughly 1.65 GWof solar and wind capacity by 2020 (Vietnam 2016). Yet according to Global Energy Monitor, an NGO that catalogs worldwide fossil fuel infrastructures, there are more than 32 gigawatts (GW) of coal-fired power plants under construction, permitted, or in development but not yet permitted in Vietnam as of January 2019 (Coalswarm 2019). In India, it is predicted that coal will continue to be the dominant fuel for electricity generation through 2030 (Rahul and Samantha 2019).

2.2 KEY TRENDS

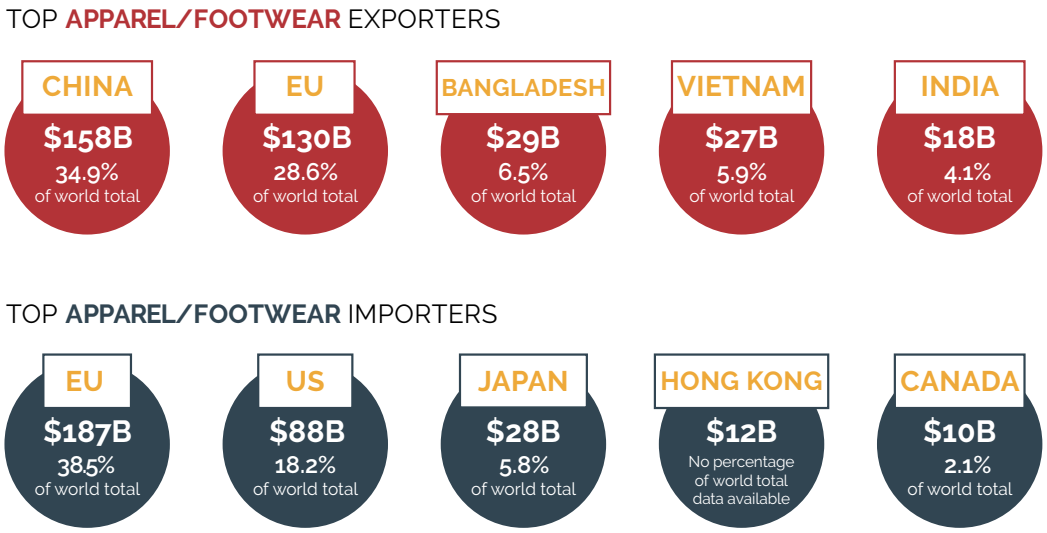
The apparel and footwear industry is dynamic and fast moving, and certain trends will influence sector GHG emissions in the future, as illustrated by the following examples:

- According to McKinsey & Company and The Business of Fashion, more than 50 percent of apparel and footwear sales would occur outside of North America and Europe for the first time in 2018 (Remy et al. 2016).
- Brands and retailers are competing to get product to market faster, which has implications across the value chain (manufacturing locations, methods of manufacture, logistics, etc.).
- Companies are also competing to automate the apparel and footwear production process, which promises efficiencies (e.g., in labor) but could also increase energy consumption depending on the technology.
- The evolution of digital technology is having an impact on the value chain in various ways, most notably in the increase in percentage of online retail sales in overall sales. Technology also has the potential to bring efficiency and reduce waste, for example in the product design process (e.g., fewer samples).
- With technology as an enabler, a variety of new business models have emerged with the potential to reduce environmental impacts, if and when they get to scale.[15]

2.3 THE APPAREL AND FOOTWEAR VALUE CHAIN

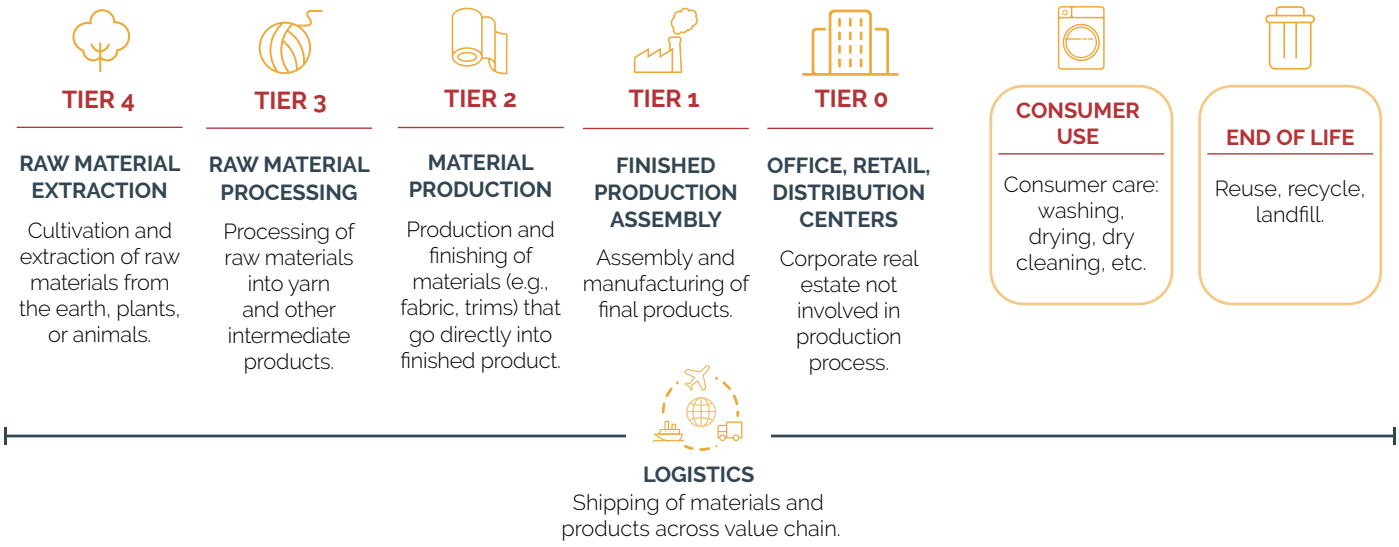
The apparel and footwear value chain is often described in tiers, a representative depiction of which is shown in Figures 3 and 4. Figure 3 is a fuller view of the value chain, including consumer use, end of life, and logistics, while Figure 4 includes more granular detail on key company and supplier activities in tiers 0 through 4. We include this detail as subsequent sections of the guidance address these tiers and activities.

Figure 2 | Global Trade in Apparel and Footwear in 2017



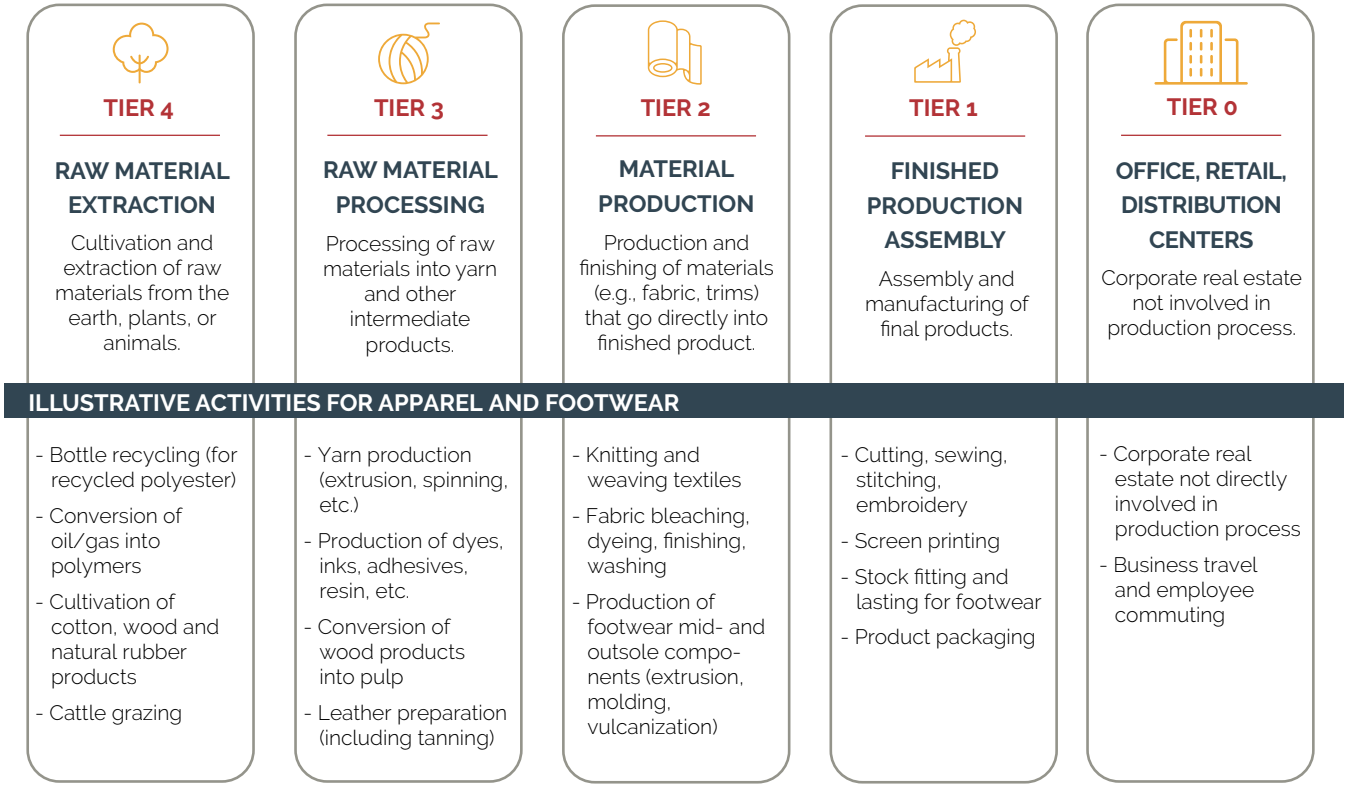
Source: WTO 2018.

Figure 3 | Apparel and Footwear Value Chain



Source: WRI authors.

Figure 4 | Apparel and Footwear Value Chain Tiers



Note: Many companies describe the apparel and footwear value chain according to the above tiers. We did not attempt to capture the nuances across the many materials used in apparel and footwear.
Source: WRI authors.

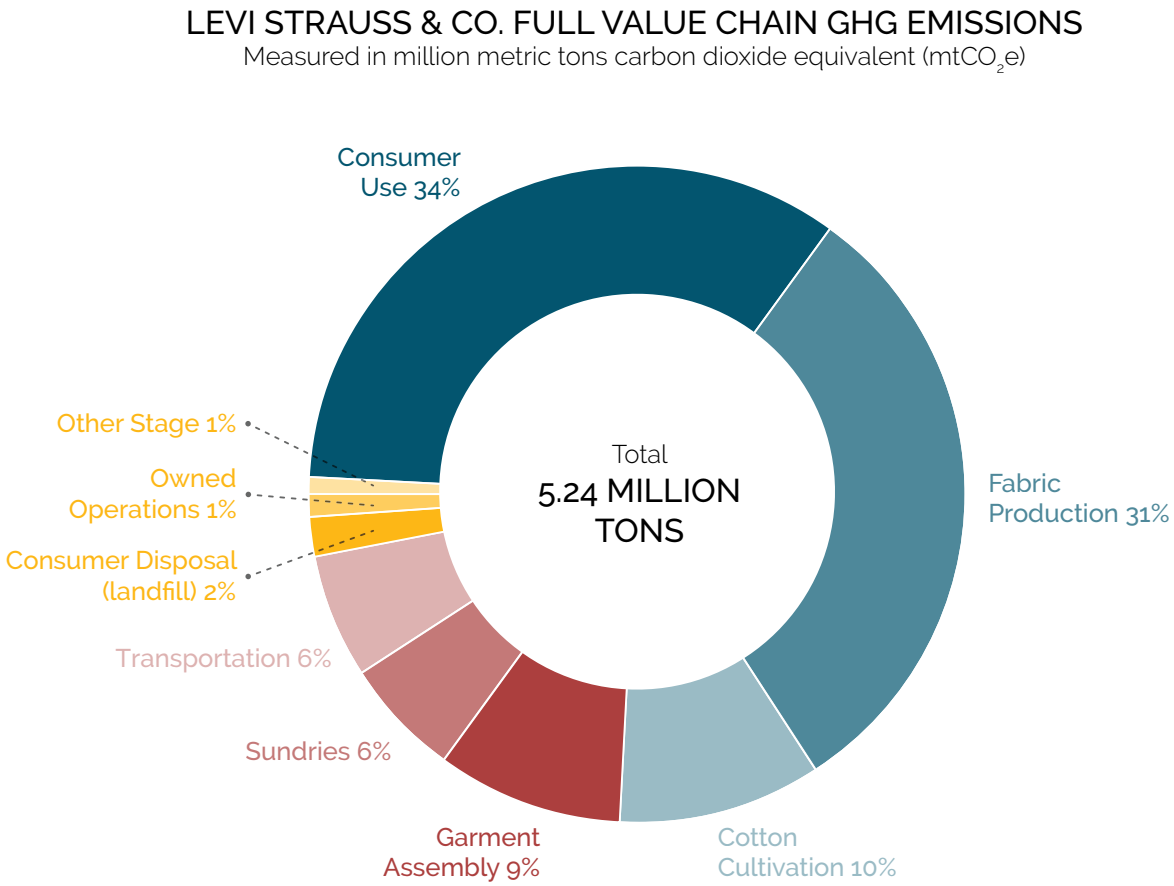
2.4 VALUE CHAIN EMISSIONS

The distribution of GHG emissions across the apparel and footwear value chain is difficult to generalize, as factors such as product category, material type, and source country shape the emissions profiles for different companies. However, generally speaking for apparel, dyeing and finishing, yarn preparation, and fiber production (tiers 2 to 4 in Figures 3 and 4 above) tend to be the most carbon-intensive phases and can account for more than 50 percent of its life-cycle emissions (Quantis 2018a). For footwear, manufacturing, raw material processing, and extraction (tiers 1 through 4) tend to be carbon-intensive and can account for over 70 percent of its life-cycle emissions (Quantis 2018a).[16]

Considering the value chain in terms of the GHG Protocol scopes of emissions, scope 3 emissions for apparel and footwear brands and retailers tend to be more significant than scope 1 and 2 emissions, mainly due to purchased goods and services (i.e., materials such as cotton, rubber, and leather). To illustrate, see the publicly reported emissions for Levi's and C&A in Figure 5 (we offer these examples as illustrative, not to suggest that all companies have similar emissions profiles).

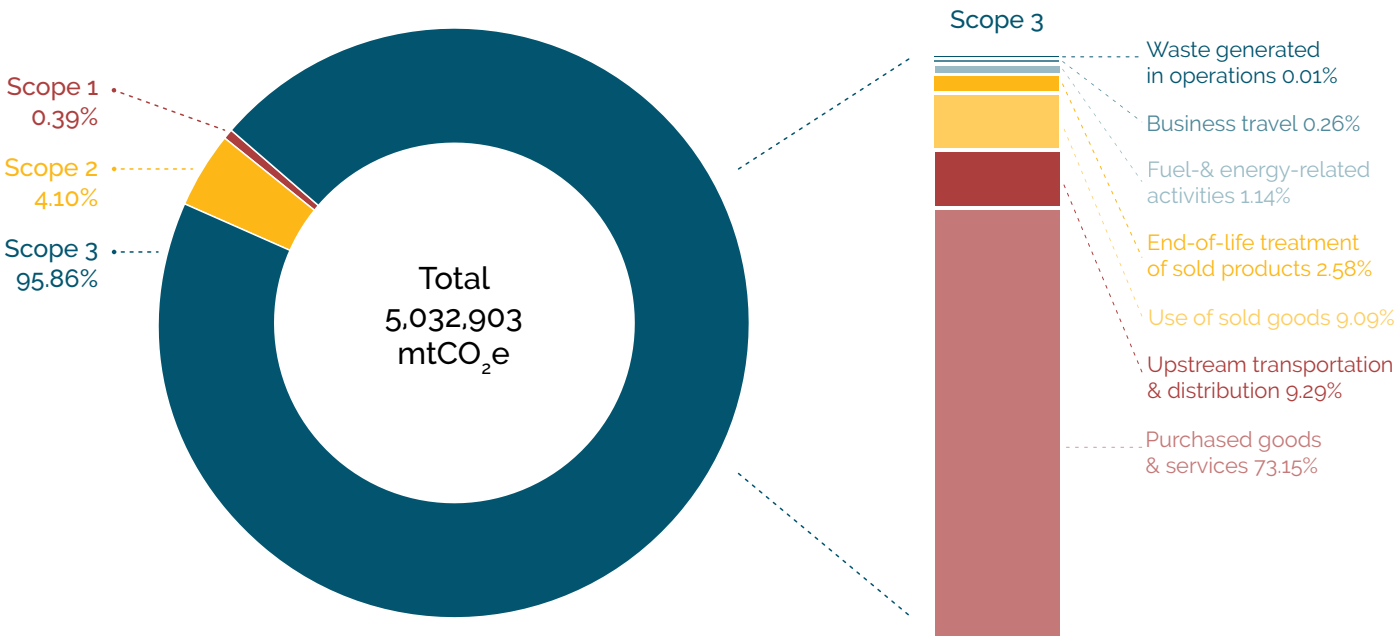
Looking specifically at scope 3, a number of brands have disclosed additional information on emissions per scope 3 category. For example, C&A reports that 73 percent of total emissions are from category 1 purchased goods and services as defined in the Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting

Figure 5A | Levi Strauss & Co.'s Estimated GHG Emissions from the Full Value Chain in 2016, by Source Category



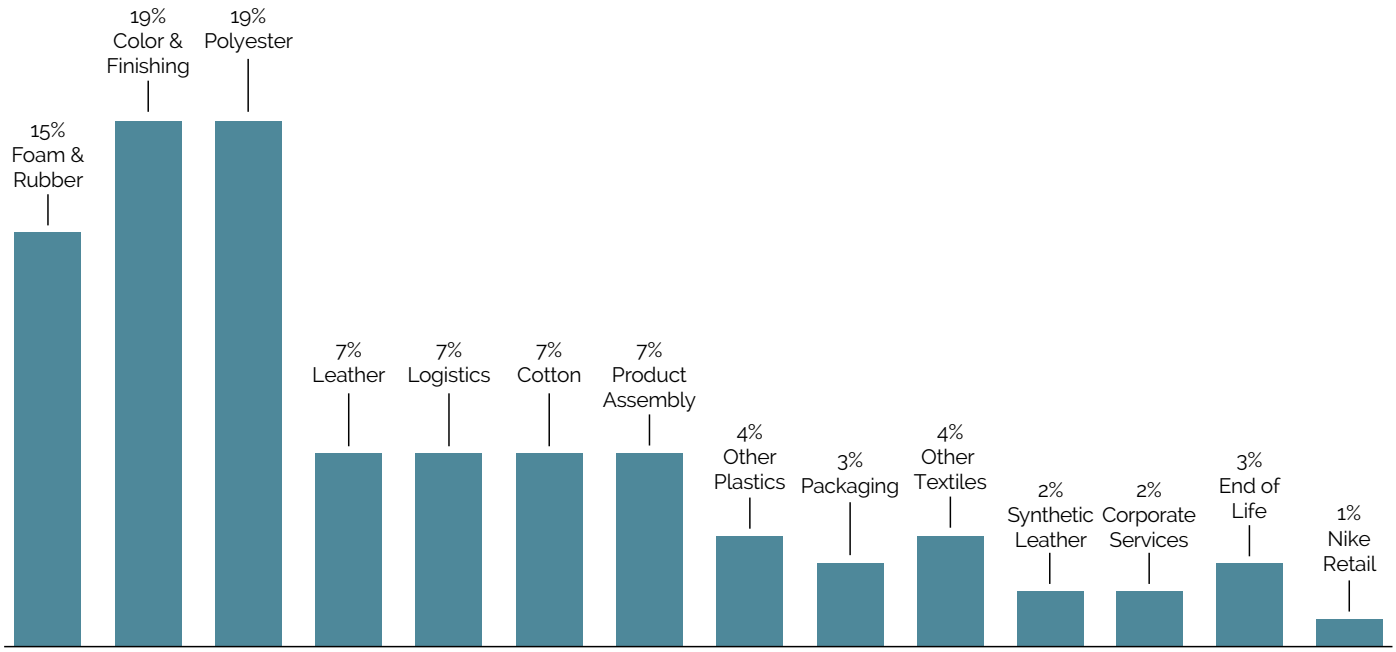
Source: Levi Strauss & Co. 2018.

Figure 5B | C&A's Total Greenhouse Gas Emissions in 2017, by Scope



Source: C&A 2018.

Figure 6 | Nike, Inc.'s Carbon Footprint



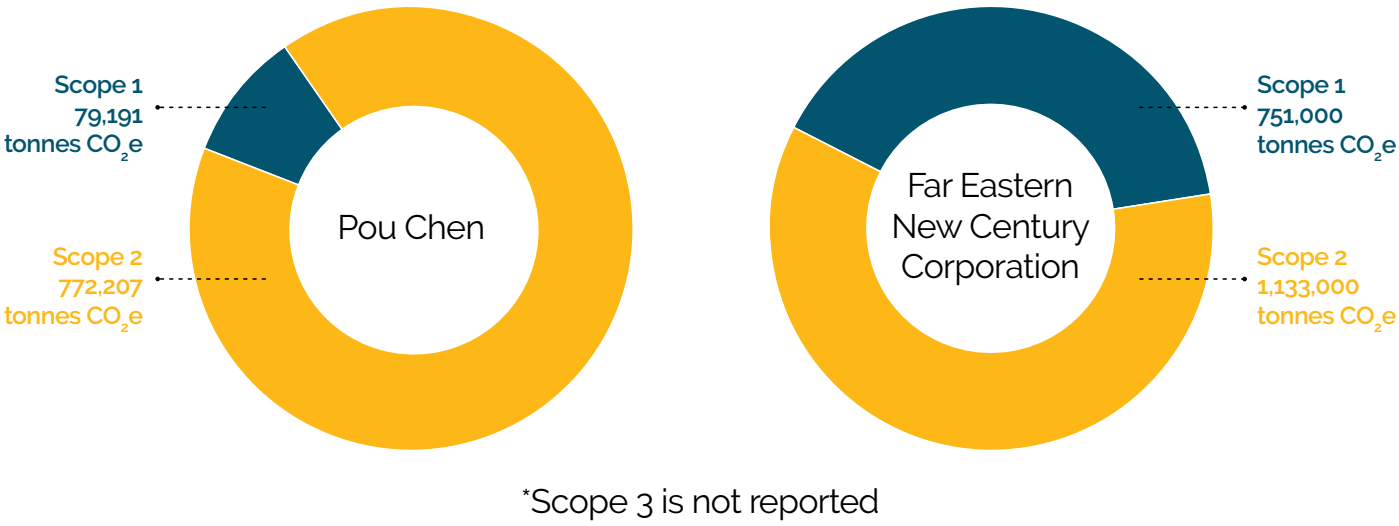
Source: Nike, Inc. 2016.

Standard while just over 9 percent each come from category 4, upstream transportation and distribution, and category 11, use of sold products (C&A 2018).

Nike presents similar information in a different format. As the reader can see in Figure 6, much of Nike's GHG footprint comes from purchased goods and services.

The breakdown of emissions by scope for manufacturers is not as generalizable as it is for brands and is highly dependent on the nature of activities in a facility. For example, footwear manufacturers and suppliers (tier 1) may vary in terms of how much of the component production they do in house, while some apparel manufacturers and suppliers (tier 1) may be vertically integrated and thus have dyeing and finishing on-site. In Figure 7, we present the publicly reported emissions for two suppliers, Pou Chen (footwear) and Far Eastern New Century Corporation (apparel).

Figure 7 | Reported Emissions from Pou Chen and Far Eastern New Century



Note: CO2e stands for carbon dioxide equivalent.
Source: Pou Chen Corporation 2018; Far Eastern New Century Corporation 2018.

3

HOW TO SET AN SBT FOR SCOPE 1 AND 2 EMISSIONS

Scope 1 and 2 emissions are the starting point for setting SBTs. While the scope 1 and 2 portion of total emissions is usually higher for apparel and footwear manufacturers and upstream suppliers than for brands and retailers, all companies are required to set scope 1 and 2 targets consistent with a well below 2°C pathway at a minimum. Companies are encouraged to aim higher and align with 1.5°C. This section presents version 4.0 of the SBTi target validation criteria for scope 1 and 2.

3.1 SBTI CRITERIA AND RECOMMENDATIONS – VERSION 4.0

All the criteria listed below must be met in order for targets to be recognized as science-based by the SBTi under criteria version 4.0.[17] Criteria, recommendations, and best practices denoted with an asterisk (*) are refinements and additions to or clarifications of preexisting criteria and recommendations, which are already in effect.

To be eligible for target validation, companies are required to complete a GHG inventory in conformance with the GHG Protocol Corporate Standard, GHG Protocol Scope 2 Guidance, and the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

3.1.1 GHG EMISSIONS INVENTORY AND SCIENCE-BASED TARGET BOUNDARY

CRITERIA

- C1 - Scopes: The targets must cover company-wide scope 1 and scope 2 emissions, as defined by the GHG Protocol Corporate Standard.
- C2 - Significance thresholds: Companies may exclude up to 5 percent of scope 1 and scope 2 emissions combined in the boundary of the inventory and target.
- C3 - Greenhouse gases: The targets must cover all relevant GHGs as required per the GHG Protocol Corporate Standard.
- C4 - Bioenergy accounting: Direct CO_2 emissions from the combustion of biomass and biofuels, as well as CO_2 removals associated with bioenergy feedstock, must be included alongside the company's inventory and must be included in the target boundary when setting a science-based target and when reporting progress against that target.[18] If biogenic emissions from biomass and biofuels are considered CO_2 neutral, the company must provide justification of the underlying assumptions.

RECOMMENDATIONS AND ADDITIONAL GUIDANCE

- R1 - Subsidiaries: It is recommended that only the parent company submit targets; however, subsidiaries may submit separate targets if they so wish. In cases where both parent companies and subsidiaries submit targets, they must make it clear whether the parent company's target includes or excludes the target of the subsidiary. Please see boundary criteria above.
- R2 - Direct land-use change emissions: When relevant, companies are encouraged (but not required) to account for land-use change emissions and include them in their target boundaries. Since methods to calculate land-use change can widely differ, companies should disclose the method used to calculate these impacts in their GHG inventories.

3.1.2 TIME FRAME

CRITERIA

- C5 - Base and target years: Targets must cover a minimum of 5 years and a maximum of 15 years from the date the target is submitted to the SBTi for an official validation.[19]
- C6 - Progress to date: Targets that have already been achieved by the date they are submitted to the SBTi are not acceptable. The SBTi uses the year the target is submitted to the initiative (or the most recent completed GHG inventory) to assess forward-looking ambition. The most recent completed GHG inventory must not be earlier than two years prior to the year of submission.[20]

RECOMMENDATIONS AND ADDITIONAL GUIDANCE

- R3 - Base year: The SBTi recommends choosing the most recent year for which data are available as the target base year.
- R4 - Target year: Targets that cover more than 15 years from the date of submission are considered long-term targets. Companies are encouraged to develop such long-term targets up to 2050 in addition to the required mid-term targets. Long-term targets must be consistent at a minimum with the level of decarbonization required to keep global temperature increase to well below 2˚C compared to pre-industrial temperatures to be validated and recognized by the SBTi.
- R5 - Consistency: It is preferable that companies use the same base and target years for all targets within the mid-term time frame and all targets within the long-term time frame.

3.1.3 AMBITION

CRITERIA

- C7 - Level of ambition: At a minimum, scope 1 and scope 2 targets will be consistent with the level of decarbonization required to keep global temperature increase to well below 2˚C compared with pre-industrial temperatures, though companies are encouraged to pursue greater efforts toward a 1.5˚C trajectory. Both the target time frame ambition (base year to target year) and the forward-looking ambition (most recent year to target year) must meet this ambition criterion.
- C8 - Absolute vs. intensity: Intensity targets for scope 1 and scope 2 emissions are eligible only when they lead to absolute emission reduction targets in line with climate scenarios for keeping global warming to well below 2˚C or when they are modeled using an approved sector pathway.[21] Absolute reductions must be at least as ambitious as the minimum of the range of emissions scenarios consistent with the well below 2˚C goal or aligned with the relevant sector reduction pathway within the Sectoral Decarbonization Approach (SDA).
- C9 - Method validity: Targets must be modeled using the latest version of methods and tools approved by the initiative. Targets modeled using previous versions of the tools or methods can only be submitted to the SBTi for an official validation within six months of the publication of the revised method or the publication of relevant sector-specific tools.
- C10 - Combined scope targets: Targets that combine scopes (e.g., scopes 1+2 or 1+2+3) are permitted.
  - If the combined scope 1+2+3 target is not in line with a well below 2˚C scenario, the scope 1+2 portion must be in line with a well below 2˚C scenario, and the scope 3 portion of the target has to meet the ambition requirements outlined in C19.
  - If the combined scope 1+2+3 target is in line with a well below 2˚C scenario, the combined scope 1+2 portion of the target must be in line with a well below 2˚C scenario, regardless of the scope 3 portion ambition.
- C11 - Offsets: The use of offsets is not counted as an emission reduction toward the progress of companies' science-based targets. The SBTi requires that companies set targets based on emission reductions through direct action within their own operations or their value chains. Offsets are considered to be an option only for companies wanting to finance additional emission reductions beyond their science-based targets.
- C12 - Avoided emissions: Avoided emissions fall under a separate accounting system from corporate inventories and do not count toward science-based targets.[22]

RECOMMENDATIONS AND ADDITIONAL GUIDANCE

- R6 - Choosing an approach: The SBTi recommends using the most ambitious decarbonization scenarios that lead to the earliest emissions reductions and the least cumulative emissions.

3.1.4 SCOPE 2

CRITERIA

- C13 - Approaches: Companies shall disclose whether they are using a location- or market-based approach as per the GHG Protocol Scope 2 Guidance to calculate base year emissions and to track performance against a science-based target. Companies shall use a single, specified scope 2 accounting approach (location-based or market-based)[23] for setting and tracking progress toward an SBT.
- C14 - Renewable electricity: Targets to actively source renewable electricity are an acceptable alternative to scope 2 emission reduction targets. The SBTi has identified 80 percent renewable electricity procurement by 2025 and 100 percent by 2030 as thresholds (portion of renewable energy over total energy use) for this approach in line with the recommendations of RE100. Companies that already source electricity at or above these thresholds shall maintain or increase their share of renewable electricity to qualify.

RECOMMENDATIONS AND ADDITIONAL GUIDANCE

- R7 - Heat and steam: For science-based target modeling purposes, it is recommended that companies model heat- and steam- related emissions as if they were part of their direct (i.e., scope 1) emissions.
- R8 - Efficiency: If not already embedded in the science-based target setting method, it is recommended that electricity-related scope 2 targets be modeled taking into account efficiency gains for the specific sector and the decarbonization projected for the power sector based on well below 2°C scenarios.

3.1.5 REPORTING

CRITERIA

- Criteria C21 - Frequency: The company shall publicly report its company-wide GHG emissions inventory and progress against published targets on an annual basis.

RECOMMENDATIONS AND ADDITIONAL GUIDANCE

- R11 - Where to disclose: There are no specific requirements regarding where the inventory should be disclosed, as long as it is public. Recommendations include annual reports, sustainability reports, the company's website, and/or CDP's annual questionnaire.

3.1.6 RECALCULATION AND TARGET VALIDITY

CRITERIA

- Criteria C22 - Mandatory target recalculation: To ensure consistency with most recent climate science and best practices, targets must be reviewed, and if necessary recalculated and revalidated, at a minimum of every five years. The latest year in which companies with already approved targets must revalidate is 2025. Companies with an approved target that requires recalculation must follow the most recently applicable criteria at the time of resubmission.
- C23 - Target validity: Companies with approved targets must announce their target publicly on the SBTi website within six months of the approval date. Targets unannounced after six months must go through the approval process again, unless a different publication time frame has been agreed to with the SBTi.

RECOMMENDATIONS AND ADDITIONAL GUIDANCE

- R12 - Triggered target recalculation: Targets should be recalculated, as needed, to reflect significant changes that could compromise relevance and consistency of the existing target. The following changes should trigger a target recalculation:
  - Scope 3 emissions become 40 percent or more of aggregated scopes 1, 2, and 3 emissions

- Emissions of exclusions in the inventory or target boundary change significantly
- Significant changes in company structure and activities (e.g., acquisitions, divestitures, mergers, insourcing or outsourcing, shifts in goods or service offerings)
- Significant adjustments to the base-year inventory or changes in data to set targets such as growth projections (e.g., discovery of significant errors or a number of cumulative errors that are collectively significant)
- Other significant changes to projections/ assumptions used in setting the science-based targets

- R13 - Validity of target projections: The SBTi recommends that companies check the validity of target-related projections annually. The company should notify the SBTi of any significant changes and report these major changes publicly, as relevant.

3.1.7 SECTOR-SPECIFIC GUIDANCE

CRITERIA

- C20 - Requirements from sector-specific guidance: Companies should follow requirements for target setting and minimum ambition levels as indicated in relevant sector-specific methods and guidance, at the latest, six months after the sector guidance publication.

3.2 METHODS FOR SETTING SBTS FOR SCOPES 1 AND 2 FOR APPAREL AND FOOTWEAR COMPANIES

Various target-setting methods are available. They differ in terms of whether they calculate targets as a percentage reduction in absolute emissions or emissions intensity based on a physical or economic indicator. This section describes the methods that are most applicable to apparel and footwear companies for setting scope 1 and 2 targets. An integrated science-based target-setting tool is available and provides target modeling options for the methods described below (SBTi 2019a).

Apparel and footwear companies are encouraged to use the absolute contraction approach to set scope 1 and 2 emissions reduction targets. The absolute contraction approach is the most straightforward approach for linking targets to the well below 2˚C and 1.5˚C pathways. It requires a minimum of 2.5 percent annual linear reduction in terms of absolute emissions for well below 2˚C targets and 4.2 percent for 1.5˚C targets.

Companies can also set physical or economic intensity targets for scope 1 and 2 emissions. For such targets, companies should specify the physical or economic indicators and provide projections of activity growth over the target period for the assessment of the resulting change in absolute emissions.

For physical intensity targets (e.g., reduce GHG emissions per unit of product), companies can choose physical indicators that are most representative of their product or service portfolios (e.g., per pair of shoes) and ensure that the underlying absolute emissions reduction is in line with the absolute contraction approach. Physical intensity targets may be more relevant for suppliers and manufacturers, whose scope 1 and 2 emissions tend to be more significant than they are for brands or retailers.

It is important to note that there is currently no pathway in the SDA specific to the apparel and footwear industry. The SDA is a method for setting physical intensity targets that uses convergence of emissions intensity. It is intended for energy-intensive sectors such as iron and cement where the output is uniform (e.g., tons of cement).[24] The apparel and footwear sector produces a wide array of goods that cannot be captured in a single physical indicator. However, apparel and footwear companies may use relevant SDA pathways for energy-intensive sectors to inform the underlying target ambition of absolute or intensity targets. For example, if the majority of a company's emissions are from purchased electricity, a company may use the SDA pathway for power generation to model targets for its scope 2 emissions. Retailers can also use the SDA pathway for the services-buildings category to set targets on emissions from operating retail and office space, if such emissions are significant.

Companies may also set economic intensity targets using indicators such as revenue or value added. However, scope 1 and 2 economic intensity targets shall be set only if the underlying absolute emissions reduction aligns with the

Table 3 | Summary of Scope 1 and 2 Target-Setting Methods

Method	Method Description	Examples of Approved Targets[a]
Absolute Contraction	This approach assumes that all companies reduce absolute emissions at the same rate: • Well below 2˚C: Min. 2.5% annual linear reduction • 1.5˚C: Min. 4.2% annual linear reduction	Levi's commits to reduce absolute scope 1 and scope 2 GHG emissions 90% by 2025 from a 2016 base year. Walmart commits to reduce absolute scope 1 and 2 emissions 18% by 2025, from 2015 levels.
Physical Intensity	Option 1: Physical intensity targets with indicators representative of the company's overall product portfolio that, translated into absolute terms, result in a minimum of 2.5% annual linear reduction in terms of absolute emissions for well below 2˚C targets and 4.2% for 1.5˚C targets.	Global brewer AB InBev commits to reduce emissions across the value chain (scopes 1, 2, and 3) by 25% per beverage by 2025, from a 2017 base year. There are currently no approved examples of this category from the apparel and footwear sector.
	Option 2: Physical intensity targets modeled using the most relevant Sectoral Decarbonization Approach (SDA) pathways. For example, SDA for power generation may be used to set scope 2 targets if emissions from purchased electricity are significant. This option may be more relevant to suppliers and manufacturers.	*There are currently no approved examples from the apparel and footwear sector.*
Economic Intensity	Economic intensity targets with indicators representative of the company's overall product portfolio that, translated to absolute terms, result in a minimum of 2.5% annual linear reduction in terms of absolute emissions for well below 2˚C targets and 4.2% for 1.5˚C targets.	Kering commits to reduce scope 1, scope 2, and scope 3 emissions from upstream transportation and distribution, business air travel, and fuel- and energy-related emissions 50% per unit of value added by 2025 from a 2015 base year. In addition, Kering commits to reduce scope 3 emissions from purchased goods and services 40% per unit of value added within the same time frame.

[a] The example targets were approved against previous versions of the criteria.

Source: WRI authors.

minimum ambition outlined in the absolute contraction approach. Economic indicators may not be useful for tracking emissions for companies whose financial growth is not tied closely to increased emissions. In the apparel and footwear sector, the pricing of products can vary considerably among companies, for example, luxury versus mid-market versus fast fashion. Pricing also can vary within a company, from full retail pricing to discounted sales. As these instances illustrate, price point (and in turn revenue) may not be the best basis for measuring GHG emissions and setting targets, and thus we suggest that companies consider setting physical intensity targets based on production unit.

Table 3 summarizes available methods for setting ambitious scope 1 and 2 targets, as defined in Version 4.0 of the SBTi criteria.

4

HOW TO SET A SCOPE 3 TARGET

For most brands and retailers, and some suppliers, scope 3 emissions are more significant and complicated to measure and manage. In this section, we present the scope 3 portion of the SBTi criteria Version 4.0 and methods most applicable to apparel and footwear companies. See the Corporate Value Chain (Scope 3) Accounting and Reporting Standard for greater detail on scope 3 accounting (WRI and WBCSD 2011).

Figure 8 summarizes the 15 categories of upstream and downstream scope 3 emissions. Although setting a scope 3 target requires companies to do a full scope 3 inventory, in general, purchased goods and services (category 1) is the most significant portion of scope 3 emissions. We thus provide additional detail on purchased goods and services in section 5.

Based on stakeholder questions, we also include more detail on use of sold products (category 11) in section 6. As we describe in that section, the use phase emissions are indirect, and thus setting targets on these emissions are recommended but not required.

To illustrate the complexity of measuring and managing scope 3 emissions, Nike's value chain produces more than 1 billion units each year, and the company uses roughly 16,000 unique materials in these products. The large number of products and materials makes it challenging to estimate material volumes and their impacts.

A fuller discussion of scope 3 can be found in chapter 5 of the scope 3 standard (WRI and WBCSD 2011).

4.1 SBTI CRITERIA AND RECOMMENDATIONS—VERSION 4.0

The criteria below apply to all scope 3 targets submitted to the SBTi. Criteria, recommendations, and best practices denoted with an asterisk (*) are refinements and additions to or clarifications of preexisting criteria and recommendations, which are already in effect.

CRITERIA

- C15 - Scope 3 screening: Companies must complete a scope 3 screening for all relevant scope 3 categories in order to determine their significance as per the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.
- C16 - Requirement to have a scope 3 target: If a company's relevant scope 3 emissions are 40 percent or more of total scope 1, 2, and 3 emissions, a scope 3 target is required. All companies involved in the sale or distribution of natural gas or other fossil fuel products shall set scope 3 targets for the use of sold products irrespective of the share of these emissions compared with the total scope 1, 2, and 3 emissions of the company.
- C17 - Boundary: If a scope 3 target is required, companies must set one or more emission reduction targets and/or supplier or customer engagement targets that collectively cover at least two-thirds of total scope 3 emissions in conformance with the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.
- C18 - Time frame: Emission reduction targets must cover a minimum of 5 years and a maximum of 15

years from the date the company's target is submitted to the SBTi for an official validation. Companies are encouraged to develop such long-term targets up to 2050 in addition to the required mid-term targets. Long-term scope 3 targets must comply with C19 to be considered ambitious.

- C19 - Level of ambition for scope 3 emissions reductions targets: Emissions reduction targets (covering the entire value chain or individual scope 3 categories) are considered ambitious if they fulfill any of the following criteria:
  - Absolute: Absolute emission reduction targets that are consistent with the level of decarbonization required to keep global temperature increase below 2˚C compared with preindustrial temperatures.
  - Economic intensity: Economic intensity targets that result in at least 7 percent year-on-year reduction of emissions per unit value added.

Most apparel brands and retailers will need to set scope 3 targets, as scope 3 emissions will exceed 40 percent. Whether suppliers reach this 40 percent threshold will vary based on factors that include the degree of vertical integration.

Figure 8 | Scope 3 Categories

Upstream or Downstream	Scope 3 category
Upstream Scope 3 Emissions	1. Purchased goods and services 2. Capital goods 3. Fuel-and-energy-related activities (not included in scope 1 or scope 2) 4. Upstream transportation and distribution 5. Waste generated in operations 6. Business travel 7. Employee commuting 8. Upstream leased assets
Downstream Scope 3 Emissions	9. Downstream transportation and distribution 10. Processing of sold products 11. Use of sold products 12. End-of-life treatment of sold products 13. Downstream leased assets 14. Franchises 15. Investments

Source: WRI and WBCSD 2011.

- Physical intensity: Intensity reductions aligned with the relevant sector reduction pathway within the SDA or targets that do not result in absolute emissions growth and lead to linear annual intensity improvements equivalent to 2 percent, at a minimum.[25]

- C19.1 - Supplier or customer engagement targets: Company targets to drive the adoption of science-based emission reduction targets by their suppliers and/or customers are considered acceptable when the following conditions are met:
  - Boundary: Companies may set engagement targets around relevant and credible upstream or downstream categories.
  - Formulation: Companies shall provide information in the target language on what percentage of emissions from relevant upstream and/or downstream categories is covered by the engagement target or, if that information is not available, what percentage of annual procurement spend is covered by the target.[26]
  - Time frame: Companies' engagement targets must be fulfilled within a maximum of five years from the date the company's target is submitted to the SBTi for an official validation.
  - Level of ambition: The company's suppliers/customers shall have science-based emission reduction targets in line with SBTi resources.
- C19.2 - Fossil fuel sale, transmission, and distribution: Companies that sell, transmit, or distribute natural gas or other fossil fuel products shall set absolute or intensity percentage-based emission reduction scope 3 targets for the use of sold products that are consistent with the level of decarbonization required to keep global temperature increase well below 2°C compared with pre-industrial temperatures.

Companies may use their choice of tools and consultants, although we suggest they consider the Scope 3 Evaluator Tool from Quantis to get an initial estimate of scope 3 emissions (Quantis 2019).

RECOMMENDATIONS AND ADDITIONAL GUIDANCE

- R9 - Supplier engagement: Companies should recommend that their suppliers use the SBTi guidance and tools available to set science-based targets. SBTi validation of supplier science-based targets is highly recommended but not required.
- R10 - Indirect use-phase targets: Targets to influence the behavior of end users (e.g., education campaigns) or to drive the adoption of science-based targets on corporate customers (e.g., customer engagement targets) are not required but are encouraged when these emissions are significant. Companies may set additional targets to reduce indirect use-phase emissions, but these cannot count toward the two-thirds threshold defined in C17, that is, these targets are above and beyond the company's scope 3 targets. Refer to the GHG Protocol scope 3 standard for a list of products that generate direct and indirect use-phase emissions.[27]

4.2 METHODS FOR SETTING SBTS FOR SCOPE 3 FOR APPAREL AND FOOTWEAR COMPANIES

As referenced in section 4.1, companies have three options to meet Criteria 19 (level of ambition for scope 3 emissions reductions targets). These options can be used to set one or more scope 3 targets on at least two-thirds of total scope 3 emissions—with the exception of indirect use-phase emissions. See section 6 for more guidance.[28]

Ambitious reductions in scope 3 emissions can be more difficult to realize than scope 1 and scope 2 emissions, as scope 3 emissions are often outside of companies' direct control. Therefore, unlike the current requirement for scope 1 and 2 targets, absolute or intensity scope 3 targets are required to align with 2°C scenarios at a minimum. Efforts toward more ambitious well below 2°C or 1.5°C targets are

Table 4 | Summary of Scope 3 Target-Setting Methods

Method	Method Description	Examples of Approved Targets
Absolute Contraction	This method requires companies to reduce absolute emissions at the same rate: • 2˚C: Min. 1.23% annual linear reduction • Well below 2˚C: Min. 2.5% annual linear reduction • 1.5˚C: Min. 4.2% annual linear reduction	Levi Strauss & Co. commits to reduce absolute scope 3 emissions from purchased goods and services 40% by 2025 from a 2016 base year.
Physical Intensity	Option 1: Physical intensity targets with indicators most representative of the company's overall product portfolio that, translated into absolute terms, are in line with absolute contraction.	H&M Group commits to reduce scope 3 GHG emissions from purchased raw materials, fabric, and garments 59% per piece by 2030 from a 2017 base year.
	Option 2: Physical intensity targets modeled using the most relevant Sectoral Decarbonization Approach (SDA) pathways in line with 2˚C or well below 2˚C scenarios.[a] For brands and retailers to set targets for their suppliers, the SDA power generation pathway may be relevant for emissions from purchased electricity. An SDA transportation tool is also available for transportation-related emissions.[b]	No approved examples in the apparel and footwear sector
Economic Intensity	The GHG emissions per unit of value added (GEVA) method is available for companies to set economic intensity targets based on the unit of value added. Under GEVA, companies must achieve a minimum year-on-year reduction of 7% in tCO2e/$ value added.[c, d]	Kering commits to reduce scope 3 emissions from purchased goods and services 40% per unit of value added by 2025 from a 2015 base year.
Other	Companies drive ambitious physical intensity reduction to maintain scope 3 emissions at base-year level over the target period. The targets must also meet the minimum requirement for physical intensity reduction of 2% in annual linear terms.[e]	ASICS commits to reduce scope 3 GHG emissions from purchased goods and services and end-of-life treatment of sold products 55% per product manufactured by 2030 from a 2015 base year.

[a] The current version of the Science-based Target Setting Tool does not offer options for setting 1.5˚C targets using SDA. Please visit the SBTi website for future updates.
[b] The SDA transportation tool and resources can be found here.
[c] See section "GEVA Method Explained" below for more information.
[d] This method may be more suitable for companies with fast growth.
[e] For example, if a company commits to reduce GHG emissions per pair of shoes 30% by 2030 from a 2017 base year, this is a 30/13=2.31% intensity reduction in annul linear terms and meets the minimum physical intensity improvement requirement.

Source: WRI authors.

encouraged. Alternatively, targets should lead to ambitious emissions intensity reduction. Table 2 outlines target-setting methods that are most applicable to apparel and footwear companies.

For brands and retailers, the scope 3 emissions are largely the scope 1 and 2 emissions for their suppliers, often from purchased goods and services. Thus, brands and retailers will need to find the requisite reductions upstream in the supply chain. In addition to methods outlined in Table 4, brands and retailers may also set supplier engagement targets to drive adoption of science-based target setting for suppliers' emissions (please see section 5.2.2 for more information).

GEVA METHOD EXPLAINED

The GHG emissions per unit of value added (GEVA) method, originally proposed by Jorgen Randers in 2012, assumes that global GDP is the sum of the value added of its economic actors including companies, governments, universities, NGOs, and others. Under Randers's original framework, if all organizations reduce their metric tons or carbon dioxide equivalent per dollar ($tCO_2e/\$$) value (GEVA) by 5 percent year-on-year, global GHG emissions will decrease by 50 percent from 2010 to 2050, assuming a global GDP growth of 3.5 percent per year (Randers 2012).

In 2018, SBTi proposed a **new 7 percent year-on-year reduction rate** of $tCO_2e/\$$ value added with updated GDP growth and emissions assumptions (SBTi 2019b). To illustrate, if a company is growing gross profit at 6 percent per year, it shall set a target to reduce $tCO_2e/\$$ value added 7 percent year-on-year at a minimum under GEVA. If the target period is 2015 to 2030, the company's total reduction of $tCO_2e/\$$ value added over 15 years will be 66 percent. The portion of scope 3 emissions on which the company set the GEVA target will need to decline by 19.3 percent in absolute terms. See Table 5 below for a more complete illustration.

Unlike absolute contraction and SDA, GEVA maintains a global emissions budget only to the extent that the growth in value added of individual companies is equal to or lower than the underlying GDP growth projection. GEVA does not account for the differentiated growth of companies and sectors. Therefore, the currently accepted GEVA reduction rate relies on the assumption that all companies are growing at the same rate and equal to that of GDP. For these reasons, and due to the volatility of economic metrics, GEVA and economic intensity target-setting methods in general are considered less robust than absolute contraction and physical intensity methods (SBTi 2019c).[29] These factors should be taken into consideration when companies set GEVA or other economic intensity targets.

Possible Metrics for Calculating Value Added

- Value added = sales revenue - the cost of goods and services purchased from external suppliers
- Value added = gross profit (in U.S. accounting, often available in the annual financial statement)
- Value added = operating profit = earnings before interest and depreciation (EBITDA) + all personnel costs*
- *Personnel costs should include payment to management and board members.

Source: Randers 2012,

Table 5 | Change in tCO2e/$ Value Added (GEVA) and Change in Absolute Scope 3 Emissions for Companies with Different Value Added Growth Rates

Value Added Growth Rate/Year	Base Year	Target Year	Change in tCO2e/$ Value Added (GEVA) 2015–20	Change in Absolute Scope 3 Emissions 2015–30
9%	2015	2030	-66%	+23% (emissions increase)
7.5%	2015	2030	-66%	0% (no change in emissions)
6%	2015	2030	-66%	-19.31% (emissions decrease)

Source: WRI authors.

5

ADDITIONAL GUIDANCE ON PURCHASED GOODS AND SERVICES (CATEGORY 1)

5.1 OVERVIEW AND CONTEXT

For many apparel and footwear companies, the purchased goods and services category represents a significant portion of scope 3 and overall emissions. As illustrated in section 2.4, the most significant GHG sources in the apparel and footwear supply chain are generally in the production of raw materials such as leather, polyester, and cotton, as well as in processes such as dyeing and finishing.

The apparel and footwear supply chain is geographically dispersed and dynamic. Generally speaking, companies have contractual relationships with suppliers one tier away. With this comes some influence and ability to gather data. Beyond the immediately adjacent tier, influence and visibility into data decline. Companies may have some primary data for select suppliers, but, in general, companies must rely on secondary data. That said, brands often dictate the material that suppliers (tiers 2 and 3) and finished goods manufacturers (tier 1) must use and thus can exert influence. In these cases, tier 1 manufacturers will have limited to no ability to reduce emissions further upstream.

For apparel, most factories (and mills) serve multiple customers, and so the influence that any one customer has is limited. This is relevant when a supplier considers investments to reduce emissions. That said, suppliers serving multiple customers can potentially drive greater impact.

Sustainability is increasingly becoming a sourcing criterion for brands and retailers, as well as tier 1 and 2 suppliers. That said, sustainability may be defined differently across companies, and it is often deprioritized relative to traditional metrics (e.g., cost, quality, delivery, and time).

Subcontracting (a factory outsourcing the manufacture of components or products) is a common practice in the apparel and footwear industry. Emissions from subcontracting must be included in scope 3 emissions inventories.

ACCOUNTING FOR PURCHASED GOODS AND SERVICES— THE SUPPLIER PERSPECTIVE

It is common in the apparel and footwear industry for suppliers to have little to no influence or control over the inputs they source to manufacture products for brands. Generally, brands make decisions on product attributes—materials, colors, finishes, source country, etc.—and often instruct tier 1 manufacturers and suppliers on where to purchase these inputs. In such cases, manufacturers and suppliers should start with a high-level screening of purchased goods and services, recognizing there will be double counting with brands (which is an inherent factor in scope 3 accounting). The suppliers should focus their attention on actions or areas of the value chain where they can influence GHG reductions. For example, it may be that more robust data collection and reporting can help brands better monitor and reduce their emissions.

Case Study: Using the Higg Index for Setting Targets and Tracking Progress

Developed by the Sustainable Apparel Coalition (SAC), the Higg Index is a suite of tools that enables brands, retailers, and facilities to measure and score a company's or product's sustainability performance. A growing number of companies across the global apparel and footwear value chain have joined the SAC and have committed to use the Higg Index, and we thus offer guidance for how the index can be used to set SBTs and measure progress.

As companies develop their GHG inventories, establish targets, and measure progress against targets, they would ideally have access to primary data (e.g., emissions from the manufacture of their products). This said, given the nature of the industry, it is very difficult for companies to access primary data, particularly further upstream (tiers 3 and 4, per Figures 3 and 4). Thus, companies will likely use the Higg suite of tools, in particular, the Facility Environmental Module (FEM) and the Materials Sustainability Index (MSI), in the target-setting process.

To calculate the GHG emissions for materials in tiers 3 and 4 (see Figures 3 and 4), companies can use the MSI to estimate emissions for these tiers, assuming they know the mass of materials that is purchased for their products. For example, if a company uses 100 million kilograms of cotton for its products, it can look at the MSI to get an average emissions factor for cotton (SAC 2019a). In this example, the company will need to determine where to draw the boundary on the process steps as some elements in the MSI may also be included in the FEM (e.g., coloration).

To calculate emissions for tiers 1 and 2 (using the Higg Index), companies can use the FEM assuming they know the portion of the facility's output that is theirs. As mentioned above, on tier 2 (e.g., textile mills), there may be some overlap between the FEM and MSI, and so companies will need to determine where to draw boundaries.

Accessing primary data is recommended for measuring progress against targets. This may be more realistic for tiers 1 and 2. For example, if a tier 1 manufacturer invests in renewable energy, the manufacturer can report these data directly to customers. It can also reflect the emissions reduction in the FEM, thus providing data access to all customers via the FEM.

Although we recommend that companies attempt to access primary data for tiers 3 and 4, it is likely that most will need to rely on the MSI. So, if a company switches from virgin to recycled polyester, it can use the average data in the MSI to measure the reduction (versus pinpointing exactly where the recycled polyester is being produced and the resulting emissions).

Source: WRI authors.

5.2 METHODS FOR CALCULATING EMISSIONS FROM PURCHASED GOODS AND SERVICES

The *Technical Guidance for Calculating Scope 3 Emissions* describes the methods that companies are recommended to use to calculate scope 3 emissions from purchased goods and services (WRI and WBCSD 2013):

- Supplier-specific: Collects product-level cradle-to-gate GHG inventory data from goods or services suppliers
- Hybrid: Combination of supplier-specific activity data (where available) and secondary data to fill the gap
- Average data: Estimates emissions by collecting data on the mass or other relevant units of goods or services purchased and multiplying by the relevant secondary emission factors (from sources such as the Higg Materials Sustainability Index (SAC 2019a))
- Spend-based: Estimates emissions by collecting data on the economic value of goods and services purchased and multiplying it by relevant secondary emission factors

5.2.1 DATA SOURCES

In calculating GHG emissions from purchased goods and services, a company is free to use the life-cycle database of its choosing and is not required to use supplier-specific data. To choose a life-cycle database, companies should consider the transparency, completeness, and applicability of the data. While WRI does not endorse any one database, there is increasing industry alignment around the Higg Index from the Sustainable Apparel Coalition (SAC 2019b). Other companies are using the World Apparel & Footwear Lifecycle Assessment Database from Quantis (Quantis 2018b).

For more information on data quality indicators, see Table 7.6 in the Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

5.2.2 OPTIONS FOR SETTING TARGETS FOR PURCHASED GOODS AND SERVICES

Companies can set absolute or intensity targets, or some combination of each:

- Absolute target: Reduction in GHG emissions over time in units of metric tons of CO_2e
- Intensity target: Reduction in the ratio of GHG emissions relative to a business metric, such as output, production, or revenue
- Supplier engagement target: Companies commit that a percentage of suppliers, by spend or emissions, will have SBTs in place by a specific date
- See Table 9.3, Comparing Absolute Targets and Intensity Targets, in the Scope 3 Standard for considerations to take into account for setting intensity targets (WRI and WBCSD 2011).
- See SBTi website for additional examples of scope 3 targets (SBTi 2019d)

We recognize that there are trade-offs across these choices that should be managed, for example, reducing the amount of material in a garment could potentially reduce its lifespan.

Also, companies are beginning to experiment with new business models such as rental and subscription. While these hold promise for decoupling revenue growth from GHG emissions, the potential benefit is yet to be evaluated.

Case Study: Target Corporation

Target Corporation is a retailer with more than 1,800 stores in the United States and more than 350,000 employees worldwide (Target Corporation n.d.). In 2017, Target had sales of $71.9 billion, roughly 20 percent of which was from apparel and accessories (the balance was composed of beauty and household essentials, food and beverage, home furnishings and decor, and hardline goods) (U.S. Securities and Exchange Commission 2019). Target sells both owned-brand products, as well as exclusive brand and national brand products.

In 2018, Target completed a GHG emissions footprint exercise through which it identified that 96 percent of GHG emissions is in scope 3. Of the scope 3 total, approximately 64 percent comes from purchased goods and services (PG&S) and 20 percent from the use of sold products. Within PG&S, apparel and footwear make up 36 percent of the total and represent 23 percent of Target's total scope 3 emissions.

As with other retailers, Target faced a number of challenges in setting an SBT, as well as the ambitious challenge of delivering against it. For example, visibility into GHG data and the ability to track progress declines the further upstream you go, and achieving buy-in and coordinating activities across such a large, diverse, and complex organization takes significant effort. Also, given that a significant majority of emissions lie in PG&S, Target understands that it will need to mobilize collective action across its vast supplier network.

With the support of Anthesis, a sustainability consultancy, Target was able to estimate its scope 3 emissions with enough granularity and rigor to set an SBT. This involved modeling existing sustainability initiatives, proposing new ones to fill the gap, and making use of Higg Index data to estimate manufacturing emissions.

In early 2019, Target received approval for a two-part SBT from SBTi:

- Target commits to reduce absolute scope 1 and 2 emissions and scope 3 GHG emissions from retail purchased goods and services 30 percent by 2030 from a 2017 base year.
- Target also commits that 80 percent of its suppliers by spend covering all purchased goods and services will set science-based scope 1 and scope 2 targets by 2023.

In setting its absolute reduction target, the company wanted to make a bold statement and set the direction for its business units to act. The supplier engagement target is in recognition of the essential role that suppliers will play in helping deliver Target's SBT.

As part of this effort, Target has analyzed what it will need to do to achieve its SBT. For example, it must continue to deliver reduction programs currently in flight (e.g., IFC's Vietnam Improvement Program, Clean by Design), and it will need to develop new initiatives to drive further reductions (e.g., proliferating energy efficiency and renewable energy in supplier manufacturing locations). Target understands that collaboration with other retailers, brands, and suppliers is critical and welcomes partners along this journey.

Source: Target Corporation n.d. and WRI authors.

6

ADDITIONAL GUIDANCE ON USE OF SOLD PRODUCTS (CATEGORY 11)

6.1 OVERVIEW AND CONTEXT

Based on feedback from the Expert Advisory Group and other stakeholders, additional guidance was deemed necessary for the use of sold products (scope 3, category 11). Given that apparel and footwear products only consume energy indirectly in the use phase, it is recommended, but not required, that companies include them in their scope 3 inventories and targets. In general, indirect use-phase emissions come from the energy required to wash and dry apparel.

For some apparel companies, indirect use-phase emissions can be a significant portion of scope 3 and overall value chain emissions (the use phase for footwear is typically not significant). To illustrate:

- Levi Strauss & Co. estimates that 34 percent of its total value chain GHG footprint comes from consumer use (Levi Strauss & Co. 2018).
- H&M reports that 18 percent of life-cycle emissions across all of its products come in the use phase (H&M Group 2017).

The calculation of indirect use-phase emissions is driven by a number of factors, most of which companies have limited influence over—for example, how often consumers launder a garment, the temperature at which they wash and dry it, the energy efficiency of the washing and drying machines, the source of electricity, and so on. For example, according to Levi Strauss & Co., washing a pair of jeans once per week in a conventional washing machine requires 958 liters of water over a year, and washing them every other week reduces that by 50 percent (Levi Strauss & Co. 2015). Thus, any reduction in use-phase emissions is highly dependent on shifting consumer behavior.

To date, no apparel company has set targets for use phase. Some companies have attempted to shift consumer behavior. For example, Levi's encourages consumers to wash jeans less, and its care tags recommend cold water wash and line drying (Levi Strauss & Co. 2015; Vestel 2009). Patagonia offers similar guidance (Patagonia 2019).

6.2 OPTIONS FOR SETTING TARGETS FOR INDIRECT USE-PHASE EMISSIONS

The GHGP Scope 3 Standard recommends that companies estimate indirect use-phase emissions and include them in the inventory if they are expected to be significant.

If such emissions are significant, companies should also consider ways to reduce these emissions. However, it is only recommended and not required that companies set targets on these emissions. Indirect use-phase emissions shall not be counted toward the two-thirds threshold for scope 3 emissions included in a scope 3 target.

Indirect use-phase emissions can also be excluded for the purposes of calculating the 40 percent threshold requirement for having a scope 3 target. To illustrate, if a company's total scope 1, 2, and 3 GHG emissions are 100 units, and indirect use-phase emissions are estimated to be 40 units, then these 40 units can be removed from the baseline (which becomes 60 units). The 40 percent (for a scope 3 target) and two-thirds thresholds would then be applied to the remaining 60 units.

We encourage companies to consider supplementary targets such as those that follow, recognizing that they will likely not contribute to a company's obtaining approval of a scope 3 target:

- Commit to communicate to customers about changing behavior (wash or dry less, use cold water, line drying, etc.). This could take a number of forms: adding language on product tags, in-store or other advertising, etc. This might also be a commitment to educate retail employees about better care options (so they can engage customers).
- Commit to collaborate with other actors (e.g., detergent brands, washing machine manufacturers) to shift consumer care behavior.
- Shift to fabric types that require less or different laundering (however, there are trade-offs to be considered, for example, garments that are hand wash only may be less durable).

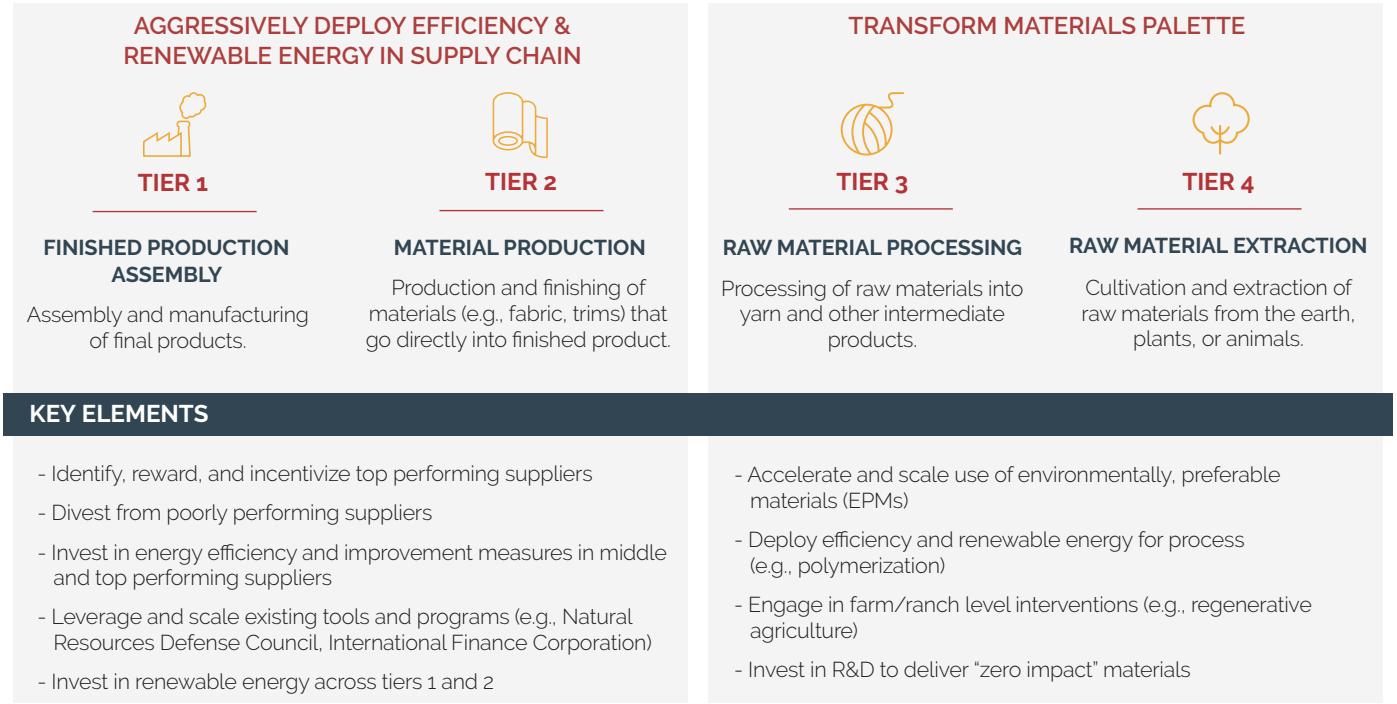
7

GHG REDUCTION FRAMEWORK

In conversations with apparel and footwear companies considering SBTs, the authors heard a clear need for suggestions on how they might reduce emissions and achieve SBTs. To realize SBTs, companies have a number of reduction options or levers at their disposal, for example:

- Material efficiency: Reduce the amount of material in a given product, for example, fewer grams of cotton per t-shirt.
- Material substitution: Replace a material with a lower GHG alternative (e.g., virgin polyester with rPoly from bottles or textiles). A subset of this might be a target to collect X tons of pre- or post-consumer apparel waste and convert this to new material. Example: H&M's commitment to use 100 percent recycled or sustainable materials by 2030.

Figure 9 | A Framework for GHG Reductions



Source: WRI authors.

- Sourcing changes: Shift materials sourcing from higher carbon sources to lower ones (e.g., polyester made with renewable energy, leather sourced from lower-impact ranches).
- Supply chain investments: Seek a discrete reduction opportunity, for example, footwear brands or leather suppliers might commit to reducing GHGs on a specific cattle ranch (work is under way by the Gold Standard, a standard and certification body, to evaluate scope 3 or value-chain interventions that could be relevant in this instance).

While the purpose of this guidance is primarily to provide direction on the mechanics of setting SBTs, we include the framework in Figure 9 for emissions reductions and welcome stakeholder feedback on it. This is not meant to be a definitive or exhaustive list of reduction opportunities.

Case Study: Nike's Energy and Carbon Program

Nike's Energy and Carbon Program is active in more than 15 countries across Nike's contracted manufacturing supply chain. Through the program, Nike employees coach and consult directly with contracted factories and their management on how to reduce energy use and carbon emissions. The program drives value through three main strategies: Drive resource productivity, enhance source base resilience, and increase renewable energy. Since its inception in FY2008, the Energy and Carbon Program has delivered significant energy savings. Nike claims that there was a roughly 50 percent reduction in energy usage intensity between fiscal year (FY) 2008 and FY2015 for Nike's manufacturing supply chain. In FY2016, Nike launched its 2020 Targets, which are owned and implemented by business functions across the organization.

As the Energy and Carbon Program matures and Nike's manufacturing partners become more energy efficient, the focus is shifting to drive further adoption of renewable energy by contract manufacturers. Nike's approach to accelerating renewable energy with its suppliers has three components:

- Supporting factories in installing solar photovoltaic (solar PV) systems on factory rooftops to provide up to 45 percent of the electricity use of factory operations.
- Engaging with governments and policymakers to advocate for policy that lets manufacturing factories directly source renewable electricity from local power utilities.
- Expanding Nike's responsibly sourced biomass renewable energy program with a focus on materials manufacturers.

Nike is also convening supplier working groups to accelerate its manufacturing factories' adoption of renewable energy in multiple countries.

Source: Nike and WRI authors.

8

OPPORTUNITIES FOR COLLABORATION AND RELATED RESOURCES

Emissions reductions upstream and downstream will require collaboration across companies across the value chain and other stakeholders (e.g., policymakers). We have listed a number of ongoing collaborations and related resources below (in no particular order), and we welcome stakeholder input on other programs to include.

- **UNFCCC Fashion Charter for Climate Action:** Created by fashion stakeholders and launched in 2018 at the 24th Conference of the Parties to the UNFCCC, the Fashion Industry Charter contains the vision to achieve net-zero emissions by 2050. Among the holistic commitments to a suite of ambitious climate actions, signatories of the charter commit to a 30 percent scope 1, 2, and 3 GHG emissions reduction by 2030 and the creation of a decarbonization pathway drawing from methods from the Science Based Targets initiative.
- **Sustainable Apparel Coalition (SAC):** The SAC is the leading alliance for sustainable production in the apparel, footwear, and textile industry. The SAC developed the Higg Index, a suite of tools that enables brands, retailers, and facilities of all sizes to accurately measure and score a company's or product's sustainability performance. The Higg Index delivers a holistic overview that empowers businesses to make meaningful improvements that protect the well-being of factory workers, local communities, and the environment.
- **Natural Resources Defense Council (NRDC) Clean by Design:** The program is a collaboration among with major apparel retailers and brands that leverages their buying power to clean up factories in their supply chains. Through the program, NRDC promotes a 10-step process designed to reduce the hottest spot of the industry's environmental impact: dyeing and finishing. NRDC encourages factories to adopt these best practices to save water, fuel, and electricity and also pushes them to track water, steam, and electricity use. NRDC has introduced Clean by Design to nearly 200 textile mills and has tracked about 50 of them to quantify the results.
- **Race to the Top:** This is a multistakeholder initiative that aims to reshape Vietnam's apparel and footwear sector by promoting and enabling embedded sustainable (financial, social, and environmental) manufacturing practices. Race to the Top aims to leverage existing programs from other organizations (e.g., Clean by Design for mill optimization). It also aims to engage policymakers in Vietnam to address policy barriers to a more sustainable industry.
- **IFC:** In partnership with global brands, supplier factories, industry associations, and governments, the IFC works with factories seeking to adopt state-of-the-art practices and technologies to reduce water, energy, and chemical use in the garment and textile industry. These practices help factories become more competitive by lowering operating costs, increasing their productivity, and reducing their impact on the environment. For example, Puma offers lower-cost financing for suppliers that perform better on its supplier rating scheme (BNP Paribas 2016).[30] The IFC reports that its resource efficiency programs in Bangladesh, China, Pakistan, and Vietnam have resulted in 685,000 tons of avoided GHG emissions per year.
- **Partnership for Cleaner Textile (PaCT):** PaCT is a multistakeholder collaboration that aims to drive long-term competitiveness and environmental sustainability of the textile wet processing sector by addressing high water, energy, and chemical use through the adoption

of best practices in the textile sector. Led by the IFC, partners include Solidaridad, the Embassy of the Kingdom of the Netherlands, 13 global apparel brands, two technology suppliers, textile factories, and the Bangladesh Garment Manufacturers and Exporters Association.

- **We Mean Business (WMB):** A global nonprofit coalition working with the world's most influential businesses to act on climate change, WMB works to increase business leadership to drive policy ambition and facilitate the transition to a low-carbon economy. As of April 2019, around 900 companies have made more than 1,400 commitments in 12 areas. The SBTi is one of the WMB Coalition commitments.
- **Circular Fibres Initiative:** Launched in May 2017 at the Copenhagen Fashion Summit, the Circular Fibres Initiative brings together stakeholders from across the industry, including brands, cities, philanthropists, NGOs, and innovators, to collaborate and create a new textiles economy that is aligned with the principles of the circular economy.
- **Fashion Positive:** A collaboration of leading brands that aims to accelerate the development of safer, circular materials for use in the apparel industry.
- **Collaboration for Forests and Agriculture (CFA):** Jointly launched in 2016 by the National Wildlife Federation, The Nature Conservancy, World Wildlife Fund, the Gordon and Betty Moore Foundation, and others, the CFA aims to define standards and outline incentives to producing zero-deforestation beef and soy. The focus is to achieve solid commitments to zero conversion by the leading companies that buy, distribute, and process soy and beef in the Amazon and Cerrado regions in Brazil and in the Gran Chaco region spanning Argentina and Paraguay. We include this as leather used for footwear is a by-product of the beef industry.
- **Gold Standard:** This is a standard and certification body that quantifies and certifies the impacts of climate and development projects. A new scope 3 accounting framework is being developed with calculation methods for measuring emissions reductions from supply chain interventions. Along with the accounting framework, a report has been released to summarize the latest best practices in addressing scope 3 GHG emissions, from formulating ambition and reducing emissions to measuring and tracking impact (SBTi 2018).

In 2016, Levi Strauss & Co. initiated PaCT as a pilot in six of its suppliers' manufacturing sites in Bangladesh, India, Sri Lanka, and Vietnam. In one year, participating suppliers reduced their GHG emissions by an average of nearly 20 percent. In addition to reducing the participating suppliers' carbon footprints, these initiatives helped the suppliers save more than $1 million in operating costs. Given these promising results, the company is working with the IFC to scale PaCT globally to include more suppliers.

- **Making Zero Impact Fashionable:** This two-year project spearheaded by WWF and HSBC was launched in 2018 to promote and educate the industry and the public on fashion sustainability. The purpose of this project is to create novel ideas and solutions to address climate-related challenges in the fashion industry. It also provides tools and training to help businesses assess and reduce climate impacts from the textile and apparel supply chain.
- **CDP Supply Chain Program:** CDP works with purchasing organizations and suppliers to reduce climate, water, and forest risks. The program currently includes 115 purchasing organizations (including retailers with apparel and footwear businesses, such as Walmart, Target, and Tesco) and around 11,500 suppliers to identify and manage climate-change, deforestation, and water-related risks. By supporting collaboration and transparency in the value chain, member companies can engage with their suppliers to manage risks and ensure business continuity.

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ENDNOTES

1. Apparel and footwear companies, as defined in this guidance, are listed under "Textiles, Apparel, Luxury Goods" and "Retailing" sectors on SBTi website's "Companies Taking Action" page.

2. Note that suppliers and manufacturers are used interchangeably in this document. See Figures 2 and 3 for more detail on different types of suppliers along the value chain.

3. *SBTi Criteria and Recommendations* (4.0), published in April 2019, offers companies options to set 1.5°C and well below 2°C targets. Until October 2019, companies wishing to set targets in line with below 2°C scenarios can continue to use the *SBTi Criteria and Recommendations* (3.0). From October, companies will have to set targets against Version 4.0.

4. There is currently no pathway in the Sectoral Decarbonization Approach (SDA) specific to this sector for companies to set physical intensity targets. SDA is a method for setting physical intensity targets that uses convergence of emissions intensity. Technical details of the SDA can be found in section 3.2 of the *Foundations of Science-based Target Setting* paper (SBTi 2019e).

5. For more information, see Science Based Targets. "What Is a Science Based Target." https://sciencebasedtargets.org/what-is-a-science-based-target.

6. For more information, see Science Based Targets. "Home." www.sciencebasedtargets.org.

7. Estimates of the GHG emissions for the sector vary, from 2 percent (Ellen MacArthur Foundation 2017) to 8 percent (Quantis 2018a) of total emissions.

8. Fast fashion is defined by Merriam-Webster as "an approach to the design, creation, and marketing of clothing fashions that emphasizes making fashion trends quickly and cheaply available to consumers." Merriam-Webster. "Fast Fashion." http://unabridged.merriam-webster.com/collegiate/fast%20fashion.

9. *SBTi Criteria and Recommendations* (4.0), published in April 2019, offers companies options to set 1.5°C and well below 2°C targets. Until October 2019, companies wishing to set targets in line with 2°C can continue to use the *SBTi Criteria and Recommendations* (3.0). From October, companies will have to set targets against Volume 4.0.

10. The reader may find it useful to reference other tools including the *Science-Based Target Setting Manual*, the *Target Validation Protocol*, the *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard*, the *GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard*, and the *GHG Protocol Technical Guidance for Calculating Scope 3 Emissions*.

11. Please find a summary of the comments on the first draft here.

12. Please find a summary of the comments on the second draft here.

13. Committed and approved companies can be found on SBTi website's "Companies Taking Action" page.

14. As of January 8, 2019, exchange rates, these figures translate to $1.7 trillion and $2.3 trillion. Note that the BCG report used exchange rates from January 2017.

15. Examples of new business models include Grailed (a peer-to-peer marketplace for new and secondhand menswear), The Renewal Workshop (a provider of circular economy solutions for apparel and footwear brands), ThredUP (an online consignment store), Tradesy (a peer-to-peer resale marketplace for womenswear), and VillageLuxe (a peer-to-peer luxury fashion rental site).

16. For a visual depiction of the impacts across the value chain, see page 3 for apparel and 5 for footwear in Quantis 2018a..

17. *SBTi Criteria and Recommendations* Version 4.0 will be in effect as of October 15, 2019. All submissions received by the SBTi prior to October 15, 2019, can be assessed against the criteria Version 3.0 or Version 4.0. Criteria, recommendations, and best practices denoted with an asterisk (*) are refinements and additions to/clarifications of preexisting criteria and recommendations, which are already in effect.

18. Methane and nitrous oxide emissions associated with biofuels and biomass combustion should be reported under scopes 1 or 2 or 3 as relevant.

19. For targets submitted for an official validation in the first half of 2019, the valid target years are 2023–2033 inclusive. Those submitted in the second half of 2019 must be between 2024 and 2034.

20. For targets submitted for an official validation in 2019, the most recent inventory data submitted must be for 2016 at the earliest.

21. For a list of all approved methods and sector pathways, please consult the SBTi website.

22. Avoided emissions refer to the positive difference in total life-cycle emissions when a product with lower life-cycle emissions is compared with a reference product with higher life-cycle emissions that serves a similar function.

23. A location-based method is based on the average emissions intensity of grids on which energy consumption occurs. A market-based method is based on emissions from electricity that companies have chosen specifically. Please see more information in GHGP Scope 2 Guidance (WRI and WBCSD 2015).

24. Technical details of the SDA can be found in section 3.2 of the *Foundations of Science-based Target Setting paper* (SBTi 2019e).

25. There is currently no pathway in the Sectoral Decarbonization Approach (SDA) that is specific to the apparel and footwear industry. Please see section 4.2 for recommended scope 3 target setting methods for this sector.

26. If measuring coverage by spend, the company should provide an estimate of the emissions coverage associated with that spend for validation purposes to demonstrate that criterion 17 has been met.

27. Apparel and footwear companies may have significant indirect use-phase emissions from activities such as washing and drying. Please see section 6.2 for guidance on setting optional targets on these emissions.

28. See table 6-3 in the *Science-Based Target Setting Manual* for advantages and disadvantages of different target boundaries covering scope 3 emissions.

29. Please refer to the *Foundations of Science-based Target Setting* paper (SBTi 2019e) for additional technical discussion of GEVA.

30. Levi's, Target, VF Corporation, and Nike have rolled out similar programs.


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