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Greenhouse Gas Reporting Practices in the Fashion Industry: The Case of Inditex

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Abstract

The fashion industry is one of the most emission-intense industries in the world, contributing with 10% of annual global greenhouse gas (GHG) emissions. To limit global warming and climate change related, emissions must be reduced, and the fashion industry has a big responsibility to take part. This thesis aims to evaluate how fashion companies live up to their responsibilities of reporting on and acting towards reducing GHG emissions in the value chain. The Spanish fast fashion company Inditex, owner of brands like Zara, Pull&Bear, and Massimo Dutti, is one of the world's largest actors in the industry. The company has been publishing annual Non-Financial Reports (sustainability reports) for more than two decades, and with a value chain, including company-owned and supplier facilities, spread across the globe, Inditex is an excellent candidate for a case study on GHG emission reporting practices.

Through the evaluation of current reporting standards and practices, and methods for target setting, combined with findings from the scientific literature on the topic of sustainability reporting, the research questions answered are: 1) Using Inditex and their 2021 Annual Report as a case study, does the textile industry deliver according to their responsibilities? And 2) What responsibilities does Inditex have, and how can they be assessed?

Reporting on and acting to reduce GHG emissions is a voluntary company practice. A company is free to choose what and how to disclose information, often resulting in non-transparent reports that are difficult for readers to verify. To combat the transparency challenge, a 7-step reporting flow was proposed and checked against the Inditex Annual Report 2021. While Inditex's starting point is good, with science-based GHG emission reduction targets in line with the Paris Agreement, boundaries defining what parts of the Inditex value chain are included in the targets are lacking and information disclosed is highly dispersed, complicating the evaluation of Inditex's achievements. As a global leader in the fashion industry, Inditex has a responsibility to be a forerunner in reducing GHG emissions, and a source of knowledge and inspiration for smaller actors. Currently, Inditex is not living up to this responsibility.

Sammendrag på norsk

Moteindustrien er en av de mest utslippsintensive industriene i verden, og bidrar årlig med 10 % av globale klimagassutslipp (GHG). For å begrense global oppvarming og klimaendringene som følger må utslippene reduseres, og moteindustrien har et stort ansvar for å bidra. Denne oppgaven tar sikte på å evaluere hvordan motebedrifter lever opp til sitt ansvar når det gjelder rapportering og handlinger for å redusere klimagassutslipp i verdikjeden. Det spanske fast fashion selskapet Inditex, eier av merker som Zara, Pull&Bear og Massimo Dutti, er en av verdens største aktører i bransjen. Selskapet har publisert årlige ikke-finansielle rapporter (bærekraftsrapporter) i mer enn to tiår, og med en verdikjede som inkluderer selskapseide- og leverandørfasiliteter, spredt over hele verden, er Inditex en utmerket kandidat for en casestudie om utslippsrapporteringspraksis.

Ved å evaluere gjeldende rapporteringsstandarder og -praksiser, og metoder for sette utslippsmål, kombinert med funn fra vitenskapelig litteratur om bærekraftsrapportering, besvares forskningsspørsmålene: 1) Ved å bruke Inditex og deres årsrapport for 2021 som en casestudie, leverer tekstilindustrien opp til sitt ansvar? Og 2) Hvilket ansvar har Inditex, og hvordan kan de evalueres?

Rapportering om- og handling for å redusere klimagassutslipp er en frivillig virksomhetspraksis. Et selskap står fritt til å velge hva og hvordan det skal tilgjengeliggjøre informasjon, noe som ofte resulterer i lite transparente rapporter som er vanskelige for leserne å verifisere. For å motvirke disse utfordringene, ble en 7-trinns rapporteringsflyt foreslått og kontrollert mot Inditex sin årsrapport for 2021. Selv om Inditex presenterer et godt utgangspunkt, med vitenskapsbaserte mål for reduksjon av klimagassutslipp i tråd med Parisavtalen, er det store mangler når det gjelder hvilke deler av Inditex sin verdikjede som er inkludert i målene. Informasjonen selskapet deler er svært spredt i rapporten, noe som gjør evalueringen av Inditex sine prestasjoner komplisert. Som en global leder i motebransjen har Inditex et ansvar for å være en forløper når det gjelder å redusere utslipp av klimagasser, og å være en kilde til kunnskap og inspirasjon for mindre aktører. Foreløpig lever ikke Inditex opp til dette ansvaret.

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1 Introduction

Human production and consumption patterns are contributing greatly to global greenhouse gas emissions (GHG), especially the production and consumption of textiles. The fashion industry alone is responsible for 10% of global GHG emissions, exceeding the emissions from all international flights and maritime shipping combined (European Parliament, 2020). And while the UN and country leaders are making deals to limit global warming and the climate changes that follow, the global carbon budget is shrinking by the minute (BonPote, 2021; United Nations, 2015). Companies continue to increase production and the population of developed countries continues shopping like there's no tomorrow (which there probably won't be if we continue down the current path) (Ellen MacArthur Foundation, 2017).

We need clothes to survive. A winter without a warm jacket in sub-zero temperatures is insufferable. And a tropical summer without light fabrics as protection against the sun the same. What we don't need, is a fashion industry telling us that we need to replace our wardrobe every three months. An industry that exploits the people and natural resources of developing countries, a market where it's cheaper to throw away garments barely worn and replace them with new ones rather than extending the life of the clothes we already have.

The traditional value chain of the fashion industry starts with raw material extraction (Quantis, 2018) - either the extraction of natural fibres such as cotton, from cotton fields, or synthetic fibres such as polyester, starting with oil extraction. The raw materials are processed into yarn and other materials that can be used to produce fabrics before they are washed, dyed, and assembled into final products. The final products are distributed to stores where they are sold to consumers and once consumers determine that the product is no longer of use, it is disposed of. While some reuse and recycling systems are available, 73% of all clothes disposed of still end up in landfill or are incinerated, and less than 1% of materials used in clothing production is recycled back to new clothing (Ellen MacArthur Foundation, 2017).

As defined by the Brundtland Commission in 1987, Sustainable Development is the development that "…meets the needs of the present without compromising the ability of future generations to

meet their own needs" (WCED, 1987, p. 16). Looking at the current practices in the textile industry, consideration for future generations is lacking. The production of textiles has vast negative impacts on the environment through the release of pollutants and GHG emissions, and employees in textile factories in developing countries face poor working conditions and underpayment (European Commission, 2017; European Parliament, 2020). All to meet a constructed "fashion need" of a growing population (Ellen MacArthur Foundation, 2017).

But changes are beginning to emerge. The Ellen MacArthur Foundation report *A new textiles economy: Redesigning fashion's future* from 2017 proposes concrete actions required to shift the entire fashion industry from a linear take-make-waste economy to a circular system (Ellen MacArthur Foundation, 2017). A system based on cooperation between industry actors across the value chain, where fabrics that have reached their end-of-life are re-introduced to the supply chain as raw materials for new fabrics. Where the lifetime of garments is expanded, and any virgin materials (raw materials not used before) are produced with care for both planet and people. This shift requires commitment from all players in the fashion industry, starting with companies with the resources and boldness to approach the market with care for the planet first, and economic growth second. It also requires a shift in consumption patterns and consumer awareness that supports an extended lifetime of every single garment, and a practice of recycling rather than disposing of clothes at end-of-life (Tangeland et al., 2020). To complete the circularity of the industry, large-scale textile recycling facilities, that can re-introduce old textiles as raw materials in production processes, are also needed (European Commission, 2022a).

To achieve these changes, we need detailed knowledge of both status quo, specific goals to work towards, and how and when they need to be achieved.

The growing focus on Corporate Social Responsibilities (CSR) and the expectation of companies to report on their social, environmental, and economic performance (Triple Bottom Line), has pushed companies to publish regular reports on their performance and achievements on aspects related to sustainability (John Elkington, 2004; Wu et al., 2020). While there, at the time being, are no specific requirements for the information disclosed in such reports, using the 17 United Nations Sustainable Development Goals (SDGs) as a basis for sustainability reports and

sustainable practices within a company, is both common and encouraged (Ya-Jun & Tsan-Ming, 2020). The UN Business Call to Action challenge companies to include relevant SDGs in their business models to accelerate goal progress, and the Global Reporting Initiative (GRI) Standards, the most commonly used standard for sustainability reporting by companies, are strongly aligned with the UN SDGs (GRI, n.d.-a; KPMG, 2022; UNDP, 2023).

One part of sustainability reporting is reporting on GHG emissions generated from a company's activities. UN SDG 13 targets this topic, and is linked to the Paris Agreement goal of limiting global warming to well below 2^{o}C, aiming for maximum 1.5^{o}C, compared to pre-industrial temperatures (United Nations, 2015, n.d.-c). The complex value chain of the fashion industry, where different stages of production are often third-party services carried out in different countries, makes reporting on value chain GHG emissions challenging (European Commission, 2017; Olatunji et al., 2019).

This thesis aims to evaluate GHG reporting practises in the textile industry by using the Spanish fashion company Inditex, one of the world's largest actors in the Apparel & Footwear (A&F) sector, as a case study. The evaluation will include GHG emission reduction target setting and achievement and give an outline of what responsibilities the industry has to reduce emissions, and how well they are living up to these responsibilities.

2 Literature Review

The literature review provides an outline of sustainability challenges in the fashion industry, as well as current sustainability- and GHG emission reporting practices of the industry. An explanation of Scope 1, 2, and 3 emissions sets the basis for how emissions in a company value chain are divided, and a thorough introduction to the Science Based Target initiative (SBTi) explains how companies can target these emissions. Common reporting standards are introduced, as well as an insight in findings from scientific literature on the topic, leading to the research questions to be answered.

2.1 Sustainability Challenges of the Fashion Industry

Several aspects of the fashion industry can be regarded as challenging in terms of sustainability. Throughout the entire value chain of the industry, unsustainable practices are identified: Land-use change from the production of raw materials, the use of petroleum-based products in synthetic fibres, water-intense processes in producing garments, pollution from chemical-use when dyeing and finishing products, working conditions in textile factories, textile waste from production-phase, the release of microplastics in the ocean from the washing of synthetic garments, and textile waste in landfills when the garments are thrown away by consumers. And last, but not least, the industry is highly emission-intense (Amicarelli et al., 2022; European Parliament, 2020; Maria-Ariana, 2017).

According to the European Parliament, the fashion industry is estimated to be responsible for 10% of global CO_2 emissions, amounting to 2.1 billion tonnes of CO_2 in 2018 (Berg et al., 2020; European Parliament, 2020) . And the volume of textiles produced globally each year is increasing tremendously. Between 2000 and 2015 the global production of textiles doubled (European Commission, 2022c) while the prices of clothes in the EU dropped by more than 30% between 1996 and 2018 (EEA, 2019). With emerging economies across the globe, a growing global middle class, and an increasing market for fast fashion[1], there are no indications that the fashion industry will stop growing in the years to come (Ellen MacArthur Foundation, 2017).

[1] Fast fashion definition by Oxford Languages: Inexpensive clothing produced by mass-market retailers in response to the latest trends

In addition to the growing market of textiles, the average utilisation (the number of times used before thrown away) of a garment is also decreasing radically. Between 2002 and 2016, the global utilisation average decreased by 36% (Euromonitor International Apparel & Footwear, 2016, as cited in Ellen MacArthur Foundation, 2017). The largest difference is seen in China where a garment was worn more than 200 times in 2002 whereas in 2016, the average wear was down to 26 times. This does not only have a negative impact on the volumes of clothes produced but also on the volumes of textile waste that follows. In the EU, the average person generates 11kg of textile waste every year (European Parliament, 2020). And while a small amount is exported for reselling outside the EU, 87% is either incinerated or ends up as landfill. This is a direct testament to the traditional business model of the textile industry that can be summarized as "make-take-waste". Garments are produced, consumed, and discarded in a linear manner - the exact opposite of a circular economy (Amicarelli et al., 2022). Initiatives to transform the textile industry from a linear to a circular economy are emerging. As an example, the EU targets the textile industry in its Strategy for Sustainable and Circular Textiles (European Commission, 2022a). The aim of the strategy is to develop a fashion market in the EU by 2030, where products are long-lived, recyclable, and to a large degree produced of recycled fibres.

Governments', and some fashion brands' responses to the focus on textile recycling are seen through the collection of discarded consumer textiles. For instance, the Norwegian government has, in line with EU requirements, set a goal of separate textile waste collection through waste management companies by 2025 (Avfall Norge, 2020). In some Norwegian cities, such as Bergen, a textile waste collection trial project was initiated in 2023 (BIR, 2023). Fashion brands H&M and Zara have in-store collection of textiles for recycling (H&M, n.d.; Inditex, 2022a). But even though the collection of worn-out and damaged textiles is a reality, global large-scale sorting- and recycling facilities, for fibre-to-fibre closed-loop recycling, are still in the early phases of development (Watson et al., 2020).

The focus on companies' sustainability responsibilities and -reporting practices is growing. The European Green Deal and EU Corporate Sustainability Reporting Directive are both examples of governmental initiatives that force companies in Europe to take climate action (European Commission, 2022b, 2023). As a response to this, much effort is seen across the textile industry

in branding the raw materials (fibres) used in garments as “sustainable” through the use of so-called ecolabels (Ranasinghe & Jayasooriya, 2021). These labels disclose information on, i.e., materials used to produce the garments, the environmental impact of the garment, or the level of greenhouse gases (GHG) that were emitted to produce the garment. Organic cotton, recycled PET bottles, or recycled textiles are typical production materials used in the sustainable branding of textiles (Leonas, 2017; Palacios-Mateo et al., 2021; Textile Exchange, 2021). But according to the Ellen MacArthur Foundation (2017), only 1% of materials used in textiles production are of recycled origin. As disclosed in the Fashion Transparency Index by Fashion Revolution (2022), 46% of the 250 largest fashion brands in the world disclose a measurable sustainable materials strategy. However, only 37% of the brands provide a description of their definition of a sustainable material. Sandin et al. (2019) argue that a differentiation on “sustainable” vs “unsustainable” fibre types is impossible. There are too many variables, such as who the supplier is, what product the fibres constitute, and how they are manufactured, to conclude strongly on what fibres are more sustainable than others.

From the Fashion Revolution (2022) Fashion Transparency Index, we know that out of the 250 fashion brands evaluated, only 29% have publicly committed to decarbonization across their supply chain. If the textile industry continues down the same path as today, according to Ellen MacArthur Foundation (2017), the industry will account for 26% of the global carbon budget in 2050, as opposed to 2% in 2015.

A prerequisite for holding the industry operators responsible for their efforts towards sustainability is transparency and traceability throughout each reporting company’s value chain. As documented by the European Commission (2017, p. 20), this transparency is lacking today. While for example brands and retail companies are openly reporting on the use of renewable energy in company-owned locations, there is little to no transparency regarding where the raw materials for their clothes are sourced from and at what factories clothes are produced (Fashion Revolution, 2022).

2.2 Sustainability Reporting at Company Level

Sustainability reporting in the private sector started in the late 1980s as a response to the growing concern for the future of the planet caused by human consumption of natural resources (Gokten et al., 2020). The reports *World Conservation Strategy* (1980), *World Commission on Environment and Development* (1983), and *Our Common Future* (1987) all contributed to providing general acceptance of Sustainable Development as a concept, and with a growing focus on the responsibilities of private companies to avoid exploitation of the world's population and resources, the need for reporting on sustainable development in the private sector followed. In the early years, information reported was mainly concerning the environmental impacts of business operations. In 1997, the Global Reporting Initiative (GRI) was founded, emphasising the need for a reporting framework including economic, environmental, and social impacts. GRI provided companies with a format for sustainability reporting, and by 2003, close to 1/3 of every company sustainability report was following this format (Lauren Kelly, 2022). The development of the reporting framework continued throughout the 2000s and in 2016, the official GRI Standards were published (Gokten et al., 2020). The aim of sustainability reporting is to make companies and organisations more accountable regarding their social and environmental impact. In addition, it can provide insight into governance issues (Michalak et al., 2023).

Today, typical topics disclosed in sustainability reports from the textile industry cover UN Sustainable Development Goals (SDG) compliance and efforts throughout the value chain; Raw material sourcing; Working conditions and Human rights within the company; Energy consumption; Environmental impact; Industry cooperation initiatives; GHG emissions generated in the company value chain (H&M, 2021; Inditex, 2022a; Zalando, n.d.).

2.3 GHG Reporting at Company Level

Even though company sustainability reports cover a great deal more than only GHG emissions, the purpose of this thesis is to specifically evaluate disclosure on GHG emissions, and efforts to reduce them, in the textile industry.

There is a widespread set of standards, protocols, and guidelines available for GHG emission accounting and reporting, but they leave much room for interpretation, (Kenneth P. Pucker, 2021;

WBCSD, 2021). And while keeping track of, and reporting on, company emissions is a necessity to reduce said emissions, a systematic approach towards reducing the emissions reported is required (Berg et al., 2020; Ellen MacArthur Foundation, 2017).

As an example, Inditex has been reporting its sustainability efforts in general since 2001, and based on the GRI format since 2007 (Inditex, 2022a; Kelly Mutz, 2021). But, as pointed out by Kelly Mutz (2021), the layout and reporting methods of the annual reports in Inditex's case have historically varied from year to year, making it difficult to track and compare achievements that have been made.

2.4 Scope 1, 2, and 3 Emissions

The concept of describing emission sources in scopes was introduced as a way to delineate a reporting entity's direct and indirect sources of emissions (GHG Protocol, 2015b). The first reference to scopes is found in the first edition of the GHG Protocol corporate accounting standard published in 2004. The approach improves transparency and helps different types of organisations define their climate policies and business goals in terms of emission reductions (GHG Protocol, 2015b).

For accounting and reporting purposes, three scopes are defined (GHG Protocol, 2015b). **Scope 1** emissions refer to a reporting entity's **direct GHG emissions**. These are emissions that originate from sources that are under the direct control of the reporting company, such as emissions from combustion boilers, furnaces, and a company's own vehicles.

Scope 2 emissions are a company's **indirect GHG emissions** from the generation of electricity purchased and consumed by the company. For reporting purposes, a reporting entity can disclose GHG emissions per *location* or *market*. As defined in the GHG Protocol Scope 2 guidance (GHG Protocol, 2015a, p. 27):

> In short, the market-based method reflects emissions from electricity that companies have purposefully chosen (or their lack of choice), while the location-based method reflects the average emissions intensity of grids on which energy consumption occurs.

Scope 3 emissions are also **indirect emissions**. They are the sum of emissions from all upstream (pre-product sales) and downstream (post-product sales) activities of the reporting company. Examples of upstream activities are the purchasing of goods and services, transportation, employee commuting, and treatment of waste generated in production operations. Downstream activities are activities such as transportation and distribution of finished products, use of products, and end-of-life treatment of products.

Figure 1 illustrates the typical Scope 1, 2, and 3 emissions throughout a company value chain.

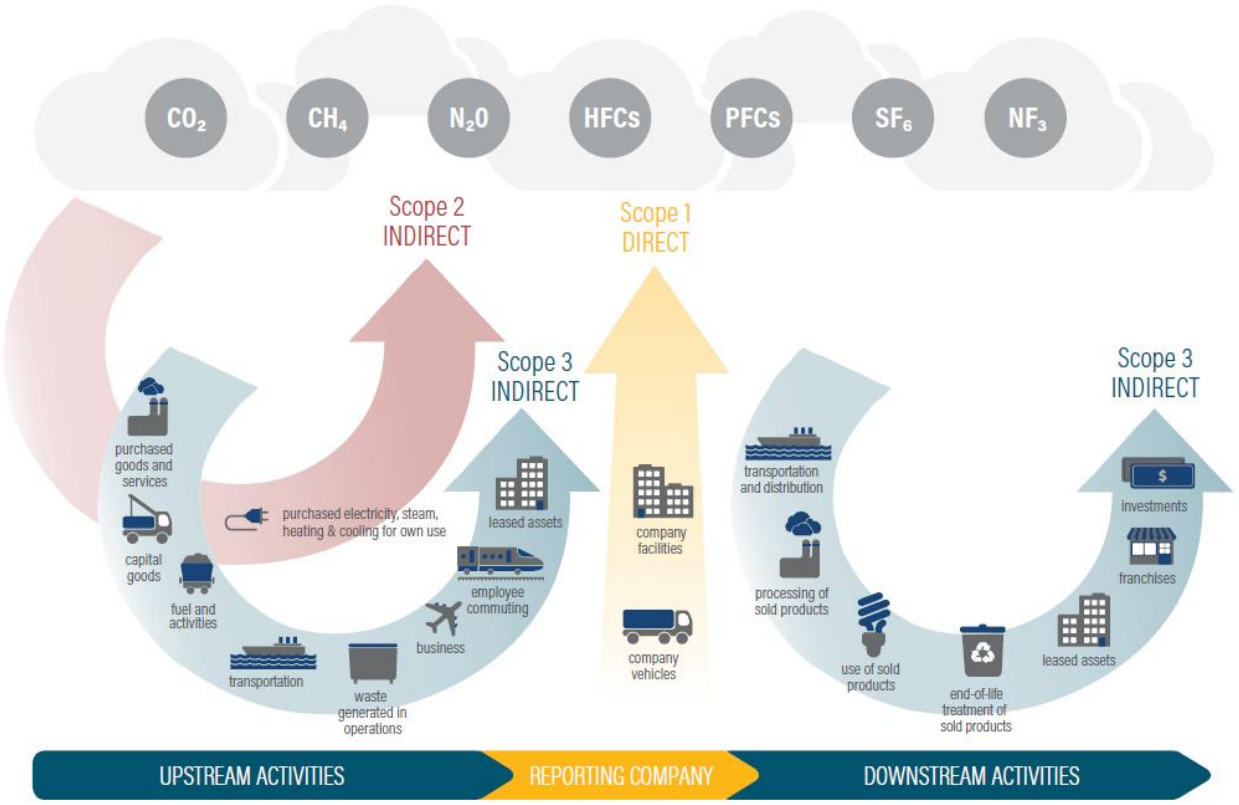

Figure 1: Overview of Scopes and Emissions across a Value Chain. Figure retrieved from Apparel and Footwear Sector Science-Based Targets Guidance (M. Sadowski et al., 2019, p. 4)

Scope 1 and 2 emissions are the emissions that a company has direct control over. The company is free to choose the type of buildings they operate from, the equipment they use, how they fuel their furnaces, and what vehicles they want to use. They are also free to choose their electricity provider. As such, these emissions are the natural starting point for setting targets to reduce emissions (M. Sadowski et al., 2019). There are more barriers to overcome to achieve emission

reduction in the scope 3 segment (Olatunji et al., 2019). A company's knowledge of, and ability to control, the emissions of their suppliers are very limited. What they can do is to be mindful of their choice of suppliers. As far as reasonably possible, the reporting company can choose suppliers that, for instance: can document their emissions, which again requires transparency in the suppliers' value chain; incentivise emission reduction by their suppliers; source raw materials with documented lower emissions; ensure efficiency in their transportation routes to reduce the number of miles travelled, etc.

2.5 Science Based Target initiative

The Science Based Target initiative (SBTi) is a partnership founded in 2015 between CDP (originally known as the Carbon Disclosure Project), the United Nations Global Compact, World Resources Institute (WRI), and the World Wide Fund for Nature (WWF) (CDP, 2023b; SBTi, n.d.-a). The aim of the partnership is to help private companies set ambitious targets to reduce emissions in their entire value chain. The targets include timeframes and specific reduction criteria that must be adhered to in both scope 1, 2, and 3 emissions, for the company to be a contributor in staying well below 2^{o}C, or even below 1.5^{o}C, global temperature rise compared to pre-industrial temperatures, in line with the Paris Agreement (United Nations, 2015). The "how and why" of these targets, is based on the latest climate science (SBTi, n.d.-a). As new scientific knowledge is gained, targets, requirements, and approaches are updated by the SBTi.

The SBTi provides sector-based guidance for i.e., Apparel and footwear-, Cement-, Finance-, and Power-sector (SBTi, n.d.-c). Guidelines are developed on behalf of SBTi by WRI and each guide is tailored to apply to the specific sector. It gives a thorough explanation of what a company within a sector is both required and encouraged to focus on to get its emission reduction targets approved. Regardless of sector, the SBT process follows the same five steps for any company, as illustrated in Figure 2 below.

Figure 2: SBT process flow. Figure by Author, process flow as presented at sciencebasedtargets.org (SBTi, n.d.-d)

2.5.1 Apparel & Footwear Sector SBT Guidance

In the context of SBTi, the Apparel and Footwear (A&F) sector refers to companies spanning the entire apparel and footwear value chain – from brands and retailers to manufacturers and mills (M. Sadowski et al., 2019). The SBTi recognises the significance of current GHG emissions from the sector. They also recognize the potential increased emissions in years to come. The latest version of the A&F sector guidance was approved and published in 2019, and the overall objectives as summarised in the A&F guidance by M. Sadowski et al. (2019, p. 2) are:

- Provide clarity on credible approaches to setting SBTs
- Increase consistency across companies' targets in the sector
- Identify sector-specific barriers for setting SBTs and recommended ways to address these barriers
- Define and provide examples of good practices
- Highlight opportunities for companies to collaborate in reducing GHG emissions

The intention of the guidance is to provide A&F companies with the tools needed to set emission reduction targets that are in line with the latest climate science to limit global warming to well below 2°C (or even 1.5°C) compared to pre-industrial temperatures. It is not intended to be a manual on *how* to achieve these reductions. However, included in the guidance is a framework describing the two main science-based ways how the sector can reduce emissions (M. Sadowski et al., 2019, p. 5):

- Aggressively deploy energy efficiency and renewable energy across the value chain

- Substitute materials with lower environmental impact

A third alternative is for companies to produce and sell fewer items, but this is not in line with the SBTi philosophy:

> By guiding companies in science-based target setting, we enable them to tackle global warming while seizing the benefits and boosting their competitiveness in the transition to a net-zero economy (SBTi, n.d.-a, Our Aim).

Collaboration is identified as a key to reducing emissions across the A&F sector (M. Sadowski et al., 2019). Hence, the guidance lists potential organisations and initiatives that can support companies in collaborating to work toward set SBTs.

2.5.2 How to Set Science Based Targets in the Apparel & Footwear Sector

Through SBTi, there are three methods of setting targets for Scope 1 and 2, and four methods for Scope 3 targets in the A&F sector (M. Sadowski et al., 2019). For Scope 1 and 2, companies can choose to calculate the targets as a % reduction in absolute emissions (absolute contraction), or they can calculate emissions intensity based on either physical or economic indicators. The absolute contraction approach requires companies to set a target of at least a 2.5% annual linear reduction of their total Scope 1 and 2 emissions throughout their target period, to stay within the goals of the Paris Agreement. For physical intensity targets, a company commits to reducing GHG emissions per product or service portfolio, i.e. per garment produced over the target period. Economic intensity targets are set using revenue or value added to the company as indicators. Both economic and physical intensity targets require a company to project expected growth over the target period.

The methods available for Scope 1 and 2 target setting are also applicable to Scope 3, with a minimum goal to align with 2°C scenarios. In addition, a supplier engagement method can be applied. This method is based on the physical intensity method and requires a company to maintain its Scope 3 emissions at a base-year level over the entire target period, resulting in at least a 2% annual linear reduction.

While the methods differ in the approach to reducing emissions, the final outcome of targets remains the same for all approaches: GHG emission reduction in line with the goals of the Paris Agreement, as specified in the absolute contraction method.

Table 1 below gives a summary of methods available, including a short description, and what scopes the methods apply to.

Table 1: How to set Science Based Targets in the A&F sector. Table by Author based on information from the SBT A&F Sector guidance (M. Sadowski et al., 2019)

Methods	Description	Applies to scope
Absolute contraction	Assumes a reduction by all companies in absolute emissions at the same rate: >2.5% annual linear reduction for well below 2°C >4.2% annual linear reduction for 1.5°C	1, 2, 3
	>1.23% annual linear reduction for 2°C	3
Physical intensity	**Option 1:** Based on a company's overall product portfolio, physical intensity target indicators set result in the same % reductions as for Absolute contraction (xx% emission per item produced) **Option 2:** Using most relevant SDA (Sectoral Decarbonization Approach) pathways, physical intensity targets are modelled (Relevant for suppliers and manufacturers)	1, 2
	Option 1: Same as for scopes 1 and 2 **Option 2:** SDA pathways in line with absolute contraction for 2°C or well below 2°C	3
Economic intensity	Based on a company's overall product portfolio, economic intensity target indicators set result in the same % reductions as for Absolute contraction (xx% emission reduction per unit of value added)	1, 2
	Same as for scopes 1 and 2 with the addition of a year-on-year reduction of minimum 7% $tCO_2eq/\$$ value added	3

Supplier engagement (other)	Maintaining scope 3 emissions at the level of base-year over the entire target period through physical intensity reduction. >2% annual linear reduction	3

The A&F sector SBT guidance distinguishes between *criteria* that must be met for targets to be considered and approved as science-based, and *recommendations* that are not obligatory, but highly encouraged (M. Sadowski et al., 2019). The starting point for any company that sets out to get their SBTs approved is Scope 1 and 2 emissions.

Scope 3 emissions (indirect emissions from upstream- and downstream activities) are dominant in the A&F sector. This is a factor that can increase the difficulties with emission reduction for companies in the sector, as the barriers towards emission reductions in scope 3 are significant (Olatunji et al., 2019). Hence, measuring and reduction of scope 3 emissions is a highlighted part of the guidance, along with potential collaboration opportunities for companies (M. Sadowski et al., 2019).

As of July 2021, 43 A&F companies across the globe had committed to and started working towards, science-based targets through SBTi (SBTi, 2021).

To comply with SBTi, there are specific science-based target criteria that a company must adhere to. In addition, the A&F SBT guidance also outlines specific recommendations that companies are encouraged to follow. The criteria and recommendations are divided into topics covering: GHG emissions inventory and SBT boundary, time frame, ambition, reporting, and recalculation and target validity. In addition, there are specific criteria and recommendations for Scope 2 and Scope 3 targets. As an example, criteria C7 under the topic Ambition targets the level of ambition a company must have for their target. The minimum requirement is that Scope 1 and 2 targets are consistent with well below 2^{o}C trajectory, but preferably, decarbonisation targets should be consistent with a 1.5^{o}C trajectory. Recommendation R6 under the same topic is for companies to be as ambitious as possible in both decarbonisation efforts and target years. In total, there are 23 SBTi criteria and 13 recommendations presented. A summary of target criteria and recommendations is found in Appendix I.

2.6 Reporting Practices

Once targets are set, purposeful reporting practices need to be implemented and followed for documentation of starting point and tracking of target achievement. There are several standards and frameworks companies can utilise as guidance when reporting their GHG emissions. The World Resources Institute (WRI) Tools, Reporting, and Analysis for Climate (TRAC), the Global Reporting Initiative (GRI) reporting standards, and CDP Climate Change Questionnaire are all examples of globally recognized providers of such (CDP, 2023a; GRI, 2023; WRI, n.d.-b). According to a recent comparison of sustainability reporting standards and frameworks, both GRI and CDP are amongst the top 7 sustainability reporting standards of the world with 10.000 and 9.600 participants respectively (Brightest, 2023). A KPMG survey of sustainability reporting documents GRI as the reporting standard most commonly used globally (KPMG, 2022). 78% of G250 companies, the world's 250 largest companies by revenue according to the 2021 Fortune 500 ranking, reported on sustainability using GRI standards in 2022.

Table 2 below gives a comparison of the aim, structure, and approach between GRI, CDP, and WRI.

Table 2: Comparison of approaches to GHG reporting between GRI, WRI, and CDP. Table by Author, information sourced from (Brightest, 2023; CDP, 2023a; GRI, 2023, n.d.-b; WRI, n.d.-a, n.d.-b)

	Organisation/initiative		
	GRI	CDP	WRI (TRAC)
Aim	Provide a global best practice for public, transparent sustainability reporting	Help companies measure impact, set targets, and demonstrate progress	Help countries, cities, and companies reduce their emissions through measurable targets
Structure	Modular: Universal, sector, and topic	General and sector-specific (none for the A&F sector specifically)	Various tools and guidelines available, no specific structure
Approach	Detailed guides with concept explanations and disclosures on what to report	Detailed questionnaire	Guidelines and tools for tracking and strengthening of climate actions

Themes / target points	**Universal:** **GRI1:** Foundation (introduction to GRI) **GRI 2:** General Disclosures (organisation information) **GRI 3:** Material Topics (determination of relevant topics for the reporting organisation) **Sector*:** **GRI 11:** Oil and Gas Sector **GRI 12:** Coal Sector **GRI 13:** Agriculture, Aquaculture and Fishing Sectors **Topic:** **GRI 201:** Economic performance **GRI 202:** Market presence **GRI 203:** Indirect economic impacts **GRI 204:** Procurement practices **GRI 205:** Anti-corruption **GRI 206:** Anti-competitive behaviour **GRI 207:** Tax **GRI 301:** Materials **GRI 302:** Energy **GRI 303:** Water and effluents **GRI 304:** Biodiversity **GRI 305:** Emissions **GRI 306:** Effluents and waste **GRI 307:** Supplier environmental assessment **GRI 401:** Employment **GRI 402:** Labour/management relations **GRI 403:** Occupational health and safety **GRI 404:** Training and education **GRI 405:** Diversity and equal opportunity **GRI 406:** Non-discrimination **GRI 407:** Freedom of Association and collective bargaining **GRI 408:** Child labour **GRI 409:** Forced or compulsory	**I**ntroduction to company **G**overnance **R**isks and opportunities **B**usiness strategy **T**argets and performance **E**missions methodology **E**missions data **E**missions breakdown **E**nergy **A**dditional metrics **V**erification **C**arbon pricing **E**ngagement **B**iodiversity **S**ignoff **S**upply chain	**Greenhouse Gas Protocol:** GHG accounting standards and tools available for countries, cities, and companies **CAIT:** Climate data platform for exploring emissions across countries, cities, and sectors **MAPT:** Program for measurement and performance tracking in developing countries **Open Climate Network:** No longer active

	labour **GRI 410:** Security practices **GRI 411:** Rights of indigenous peoples **GRI 413:** Local communities **GRI 414:** Supplier social assessment **GRI 415:** Public policy **GRI 416:** Customer health and safety **GRI 417:** Marketing and labelling **GRI 418:** Customer privacy *Sector standards for other sectors than the three listed are currently under development. The A&F sector standard will be released in 2025		
Example	Copied from GRI (2018d, p. 9) **Disclosure 305-1** Direct (Scope 1) GHG emissions: The reporting organisation shall report the following information: a) Gross direct GHG emissions in tCO_2eq b) Gases included in the calculation c) Biogenic CO_2 emissions in tCO_2eq d) Base year for the calculation including the rationale for choosing it, emissions in the base year, context for significant changes in emissions that triggered recalculations of base year emissions e) Source of the emission factors and the global warming potential (GWP) rates used, or a reference to GWP sources f) Consolidation approach for emissions; whether equity share, financial control, or operational control g) Standards, methodologies,	Copied from CDP (2023a, C6 Emissions data, Scope 1 emissions data) **Scope 1 emission data:** (C6.1) What were your organisation's gross global Scope 1 emissions in metric tons CO_2eq? The CDP guidance also includes rationale for why the question is asked, what frameworks the question is connected to (SDG, TCFS, S&P Global Corporate Sustainability Assessment) and a table where information should be completed. Column headers in the table are Year, Gross global Scope 1 emissions, Start date, End date, and Comment	**GHG Protocol Guidance** Copied from (GHG Protocol, 2005, p. 13) **Direct CO_2 emissions from fuel combustion** There are two basic approaches for estimating direct (Scope 1) CO_2 emissions from stationary combustion: 1) direct measurement of the mass of CO_2 in the exhaust gas 2) the calculation of CO_2 emissions based on proxy (i.e. activity) data. Following this, the guidance compares the two approaches and provides calculation methods and data collection information. A section on issues related to direct measurements is also included.

	assumptions, and/or calculation tools used		
Reporting requirements	GRI Content Index with references to Disclosure information in annual reports (but GRI standards can still be used without the Content Index)	Annual completion and submission of the CDP questionnaire	None
Control mechanisms	None, but companies can voluntarily make their reports available on the GRI website	Reporting scores per company published on CDP website	None

There are distinct differences in the level of detail and approaches between the three organisations. Where CDP simply asks what the organisation's gross global scope 1 emissions are, GRI requests detailed information on gases included in the emission calculations, rationales for decisions made and how the company arrived at the number they did (CDP, 2023a; GRI, 2018d). In both cases, there is room for large variations in responses both from company to company, and from the same company one year to the next, depending, for instance, on methods used to calculate or measure emissions. The WRI Greenhouse Gas Protocol, which is the most relevant TRAC initiative when it comes to reporting on company GHG emissions, is a tool used for calculations and inventory investigations for determining a company's emissions. Both GRI and SBTi refer to GHG Protocol for definitions and calculations of scope emissions (GRI, 2023; M. Sadowski et al., 2019). As such, it can be used as a basis for reporting through either GRI or CDP (GHG Protocol, n.d.).

2.7 Current State of Art in Research

There are several examples in the literature where the need for, effect of, and practices towards emission reduction in the textile industry is investigated. The frequently quoted *A New Textiles Economy: Redesigning fashion's future* by Ellen MacArthur Foundation (2017) looks at the textile industry as a whole, from fibre production to waste management of discarded textiles, pointing out current and predicted environmental problems, and how they can be overcome. It highlights the need for companies in the industry to come together and set "ambitious, common, time-bound commitments" (Ellen MacArthur Foundation, 2017, p. 27) to achieve a system change towards a circular, net-zero textile industry. One of the highlighted approaches needed for this

change to happen is to engage all stakeholders and promote this vision widely. A list of critical actions towards the change includes (Ellen MacArthur Foundation, 2017, p. 28):

- Broadcasting evolving best practices and insights gained to stakeholders along the global textiles value chain
- Engaging policymakers and sharing of policy best practices
- Broadly communicating the nature of the current situation and the vision of a new textiles economy
- Continually involving additional actors in commitments

Similar statements are documented by McKinsey & Company in their report *Fashion on Climate* (Berg et al., 2020). Across the value chain, a call for bold commitments from stakeholders is requested for emission reductions in the fashion industry. "These commitments need to be supported by equally bold actions, greater transparency, increased collaboration and joint investment" (Berg et al., 2020, p. 4)

But none of this is practically possible without a common, comparable system for reporting of status quo, changes implemented, and their outcome.

The Fashion Transparency Index from Fashion Revolution (2022) can be used as an indication of the best- and least good reporting practices in the fashion industry. The index reviews and compares how the world's 250 largest fashion brands and retailers publicly disclose both human rights and environmental issues within their company supply chain. Each year, a detailed questionnaire is sent out to the 250 fashion brands, requesting information on their own knowledge of, and publicly shared, information on the brand's environmental impact and human rights throughout their value chain. If a brand claims to for example disclose information on who their suppliers are, they must also document where the public can find this information. A requirement is that it should be available either at the company's website or via a direct link from the website (to i.e., annual reports or a separate site). In the index released in July 2022, H&M was listed among the top 10 brands, with a total score of 66/100, while the ultra-fast fashion

brand SHEIN came out with a score of 2/100 (Fashion Revolution, 2022, p. 39). When looking at the sustainability reports from the two companies, we see that included in The SHEIN 2021 Sustainability and Social Impact Report, is a section on Managing Greenhouse Gas Emissions (GHG) (SHEIN, 2021, p. 15). However, the report holds no actual data on emissions or the management of them. On the other end of the scale, the H&M Sustainability Disclosure includes a commitment to science-based targets through SBTi, the use of the WRI GHG Protocol for emission calculations, and GRI Universal Standards for reporting on emissions (H&M, 2021; SBTi, 2021).

This points to the need for a more transparent reporting system. In chapter 16, *Evaluating social transparency in global fashion supply chains*, from the book *Eco-Friendly and Fair* by Mark Heuer, transparency is defined as "disclosing information publicly about industry-specific supply chain practices that include supplier traceability, sustainability conditions and purchasing practices" (Heuer, 2018, p. 165). Their research concludes that one way to increase the transparency and disclosure of supply chain activities in the fashion industry is to enforce supply chain-centred acts by national legal bodies. This could put pressure on global companies to familiarise themselves better with i.e., the working conditions of employees within their supply chain, which in turn could increase transparency.

GRI, CDP and WRI are initiatives that aim to contribute towards a common reporting system for GHG emission reduction across several industry sectors, including Apparel and Footwear.

The effect of a company's GRI Standards reporting has been investigated in several studies (Helfaya et al., 2023; Isaksson & Steimle, 2009; Machado et al., 2023)

The study *Can Global Reporting Initiative reports reveal companies' green supply chain management practices* by Machado et al. (2023), investigates how GRI reports contribute to the transparency of a company's green supply chain management[2] (GSCM). They analysed the data from 30 Brazilian companies' GRI reports and concluded that although the GRI reports does reveal

[2] Green Supply Chain Management as defined by Wikipedia: GSCM is the consideration of environmental issues in supply chain management

GSCM practices, the reporting structure from company to company varied to such a degree that a direct comparison of disclosures was challenging.

Helfaya et al. (2023) found that following the GRI standards has a significant positive effect on the level of environmental, social, and governance (ESG) disclosure by a company. However, they also found that "there are methodological difficulties and information gaps within the voluntary disclosure of GRI, and this is seen through the mixed results of the disclosures" (Helfaya et al., 2023, p. 17).

The United Nations Economic Commission for Europe (UNECE) also recognise increased traceability and transparency in the Apparel and Footwear sector as a necessity to achieve the needed level of sustainability and circularity throughout the supply chains of the industry. At the UNECE session in Geneva, in April 2021, the theme of the session was "Promoting circular economy and sustainable use of natural resources in the UNECE region" (United Nations, 2021a, p. 1). A call to action was initiated, inviting apparel and footwear actors to take action specifically towards traceability and transparency through The Sustainability Pledge (United Nations, 2021d). The aim of the pledge is to provide companies with tools to track their products all the way from raw materials to a garment in store. There are currently 69 unique companies and initiatives that have submitted their sustainability pledges (United Nations, 2021c).

SBTi is addressing the issue of a lack of transparency behind company targets and climate action. A Progress Framework for measurement, reporting and verification (MRV) is under development, with the aim of increasing transparency and accountability of the companies taking climate action with science-based targets (SBTi, n.d.-b).

2.8 Research Question

Even though there are indications that practices can be improved, sustainability and GHG emission reporting are becoming a common company practice in the textile industry. Actors of the industry are also becoming more aware of their responsibility of reducing GHG emissions throughout their value chains. With science-based targets defined and approved by SBTi as a basis, this paper intends to answer the following questions:

1. Using Inditex and their 2021 Annual Report as a case study, does the textile industry deliver according to their responsibilities?
2. What responsibilities does Inditex have, and how can they be assessed?

3 Methods

The methods chapter provides a basis for what responsible commitments to GHG emission reduction a textiles company should set, and what targets these commitments require. Based on the information provided in the chapter, it should be clear how target fulfilment can be tracked, and how to assess any discrepancies from fulfilment. The chapter will also outline how to best use GHG emission reporting to operationalise change towards fulfilling the targets.

3.1 Responsible Target Setting

Over the past two decades, there has been a growing focus on corporate social responsibilities (CSR) and private companies are increasingly accepting this responsibility (Kleindorfer et al., 2005; Wu et al., 2020). Caused by a growing concern for the negative impacts of production and consumption patterns of the society, companies are under pressure to measure their specific impacts and report on their "Triple Bottom Line". The term Triple Bottom Line (TBL) was introduced by John Elkington in 1994 and refers to a company's social, environmental, and economic performance (John Elkington, 2004). In 1995, the term was further developed to the 3Ps: People, Planet, and Profit. Not unlike TBL, the main principles of the 17 UN SDGs are to ensure global development that cares for both the planet and the people living on it (United Nations, 2016).

The SDGs were developed with the main aim of ending poverty through goals divided as follows: 1) No poverty; 2) Zero hunger; 3) Good health and well-being; 4) Quality education; 5) Gender equality; 6) Clean water and sanitation; 7) Affordable and clean energy; 8) Decent work and economic growth; 9) Industry, innovation, and infrastructure; 10) Reduced inequalities; 11) Sustainable cities and communities; 12) Responsible consumption and production; 13) Climate action; 14) Life below water; 15) Life on land; 16) Peace, justice, and strong institutions; and 17) Partnerships for the goals. The UN calls for world leaders and governments of all countries to make their contribution by committing to the goals. While all goals are not adoptable to fit the sustainability goals of a private company, the UN Business Call To Action challenges companies to include relevant SDGs in their business models to accelerate progress towards the goals (UNDP, 2023). Over 200 companies have responded to the call, among them large fashion companies

such as H&M and Gap Inc (Business Call To Action, n.d.). GRI also states that its standards are strongly aligned with the UN SDGs (GRI, n.d.-a).

With this as a basis, a good place to start when setting a target for GHG emission reduction is SDG 13) Climate action. Through goal 13, the UN calls for action to limit global warming and the climate-related hazards that follow (United Nations, n.d.-c). One way to achieve this is to follow the goals of The Paris Agreement. The overarching goal of the Paris Agreement is to limit the global average temperature increase to well below 2°C compared to pre-industrial levels and pursue efforts to keep the increase below 1.5°C (United Nations, 2015). To achieve this, "GHG emissions must peak before 2025 at the latest and decline 43% by 2030" (United Nations, n.d.-a, What is the Paris Agreement). Although the agreement was entered by country governments, the involvement and efforts of "non-party stakeholders"[3], such as private companies, are crucial, especially from companies involved with the production and consumption of products (United Nations, 2021b). Companies must set specific targets to reduce their GHG emissions to a degree that correlates with the goals of the Paris Agreement.

For the reduction of GHG emissions in the textile industry, another highly relevant goal is SDG 12) Responsible consumption and production (United Nations, n.d.-b). While the goal does not target GHG emissions directly, changes in consumption and production patterns, i.e., increasing the lifetime of garments produced, and utilising raw materials with less negative environmental impact, can have a vast impact on the emissions generated in a textile industry value chain (Ellen MacArthur Foundation, 2017).

3.1.1 Apparel and Footwear Value Chain

A common method of describing the A&F value chain is to break it down into tiers (M. Sadowski et al., 2019; Quantis, 2018). The tiers are divided by the activities required to produce and distribute any A&F product. Using the example of a t-shirt, the tiers can be described as follows: Starting with tier 4, raw material extraction, this tier relates to the cultivation and extraction of raw materials needed to produce the t-shirt. Textiles today typically consist of one or more raw

[3] According to the Paris Agreement, non-party stakeholders are non-governmental actors on all levels of society, both public and private.

materials. These materials can be classified as natural materials, such as cotton or wool; regenerated materials that originate from natural polymers, such as modal; and synthetic materials derived from the production of either new petrochemicals or recycled PET products (bottles), such as polyester and nylon (Kamyar et al., 2020). For a typical t-shirt, the materials used could be 100% cotton or a combination of i.e., cotton and polyester. For a combined material product, tier 4 includes the growing and harvesting of cotton, and petrochemical production processes (M. Sadowski et al., 2019). Tier 3 relates to the activity of processing the raw materials that were extracted. In this tier, the materials for the t-shirt are spun into yarn that can be used in tier 2: material production. Within tier 2, yarn is woven into a fabric that can be used to sew the t-shirt. Tier 2 also includes bleaching, dyeing, and washing of the fabric which is then distributed to tier 1: finished production assembly. In tier 1, the fabric is cut and sewn to the finished t-shirt and packed for further distribution which will happen in tier 0. Tier 0 does not relate to actual garment production, but rather includes office buildings and employee commuting, product distribution centres, and retail activities. When using the tiers to identify GHG emissions in the value chain, emissions from the shipping of materials and products must be accounted for in all tiers.

The level of engagement in each tier differs from company to company. Tiers 2 to 4 are generally considered the most carbon-intensive, and in the case of brands and retailers, these tiers often fall under the scope 3 emission category “purchased goods and services” (M. Sadowski et al., 2019; Quantis, 2018). Figure 3 gives a graphic view of the tiers and their activities. Note that consumer use and end of life treatment of products are not included in the tier-value chain.

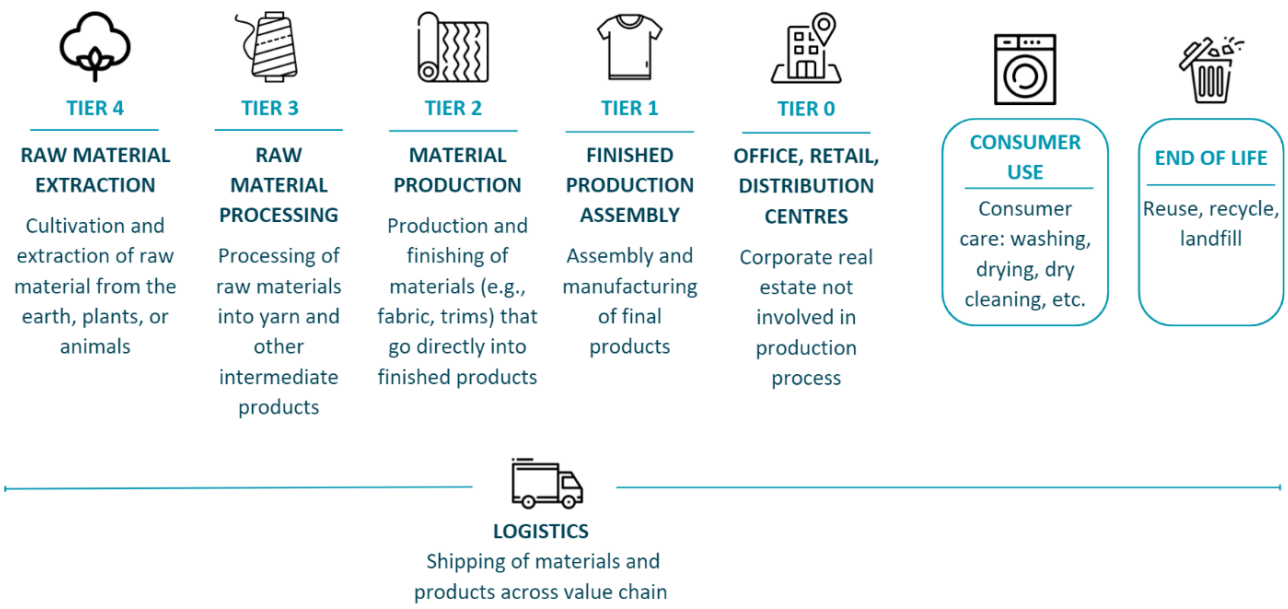

Figure 3: Apparel and Footwear Value Chain tier breakdown. Figure by Author based on figure presented in SBTi A&F sector guidance, icons downloaded from Flaticon (Flaticon, n.d.; M. Sadowski et al., 2019, p. 13)

When looking at tiers in the view of scope emissions, generally speaking, tier 0, and in some cases tier 1, typically make up Scope 1 and 2 emissions for most A&F companies (M. Sadowski et al., 2019). The GHG emission numbers, showing emissions per activity in the value chain, in Figure 4 illustrate how much more significant Scope 3 emissions generally are in the A&F sector, even excluding consumer use and end of life treatments, which are also a part of Scope 3.

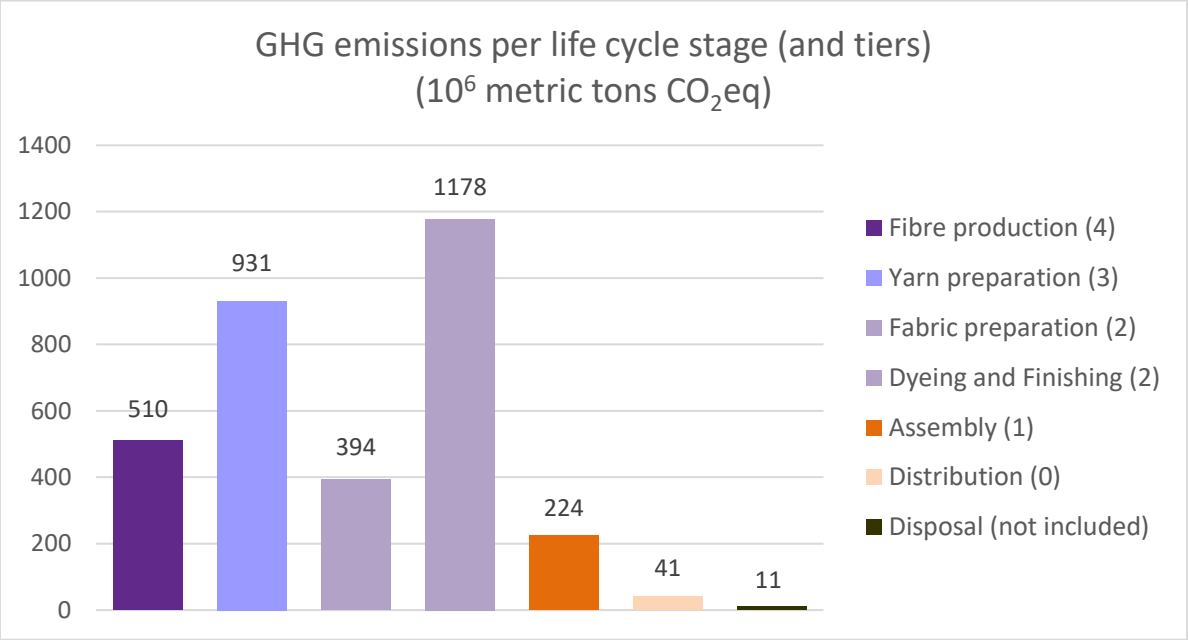

Figure 4: GHG emissions per life cycle stage including tier reference. Figure by Author, information sourced from Measuring Fashion: Environmental Impact of the Global Apparel and Footwear Industries Study (IPCC, 2013, as cited in Quantis, 2018)

To summarise Scope emissions from the viewpoint of a fashion company in the A&F sector, **Scope 1** GHG emissions are typically emissions from offices, retail, and distribution centres not directly involved in production processes, and emissions from company-owned vehicles. **Scope 2** emissions include emissions from purchased electricity for steam, heating and cooling of offices, shops, and distribution centres, while **Scope 3** emissions are emissions that originate from activities such as extraction and cultivation of raw materials (plants, oil, etc), processing of raw materials to intermediate products (i.e., yarn), material production (knitting, weaving, washing, and dyeing of fabrics), finished production assembly, waste generated in operations, logistics, employee commuting and business travel, emissions from any leased assets, franchises, or other investments, processing, use, and end-of-life treatment of sold products (M. Sadowski et al., 2019; Quantis, 2018).

3.1.2 A&F Sector Targets

With an acknowledgement of companies' responsibilities and knowledge of the impact the A&F sector has on GHG emissions generated in society, it is clear that specific targets for GHG emission reduction should be set. One way for A&F companies to do so is through the Science Based Target initiative (SBTi). SBTi provides detailed guidance with requirements and recommendations for the specific sector, based on the latest climate science (SBTi, n.d.-a).

As described in Chapter 2.5.2, there are three general methods for setting science-based targets with SBTi: absolute emissions contraction, physical intensity contraction (Sectoral Decarbonization Approach), and economic intensity contraction (SBTi, 2020). Whichever method a company chooses to use, they all comprise the same three components, as described in the Science-Based Target Setting Manual (SBTi, 2020, p. 19 Figure 3-1). The starting point is a **Carbon Budget** referring to the finite amount of carbon that can be emitted into the atmosphere before warming exceeds specific temperature thresholds. Following the carbon budget is the **Emissions Scenario** which represents a way of distributing the available carbon budget over time. The last component is the **Allocation Approach**. This refers to the way the carbon budget underlying a given emissions scenario is allocated among companies with the same level of disaggregation (e.g., in a region, a sector, or globally). There are two ways to specify the allocation approach. Either by Convergence, where all companies within a given sector reduce their emissions intensity to a common value by a given year, as dictated by global temperature pathway, or by Contraction, where all companies reduce their absolute emissions or economic emissions intensity at the same rate, irrespective of initial emissions performance.

Setting targets through the methods of SBTi will show an organisation both how much and how quickly it needs to reduce emissions in order to achieve the goals of the Paris Agreement to limit global warming (SBTi, n.d.-a). The recommended approach for the A&F sector is to use absolute- or intensity targets in accordance with absolute contraction (SBTi, 2020). With this approach, initial emissions performance by a company is disregarded, and all companies in the sector set out to reduce their absolute emissions at an identical rate. The current rate specified for minimum GHG emissions reduction, targeting a well-below 2^{o}C scenario, is -2.5% annual linear reduction covering 5 to 15 years from the date of target submission. For more ambitious companies,

targeting a 1.5°C scenario, the annual linear reduction must be -4.2% covering the same time frame.

Scope 1 and 2 emissions are the starting point for companies setting targets, but SBTi also requires targets for Scope 3 emissions for companies where these emissions exceed 40% of total Scope 1, 2, and 3 emissions, which is typically the case for fashion companies in the sector (M. Sadowski et al., 2019). For companies operating in tiers 2 to 4 in the A&F value chain, Scope 1 and 2 emissions will be larger, as GHG emissions generated in tier 2, 3, and/or 4 activities will be their direct- and energy indirect emissions.

3.2 Reporting & Monitoring of Targets

Companies commonly produce annual reports on how the company performed the previous year. While a company's performance is "best" measured through financial disclosures, these numbers will not reveal a company's sustainability performance. To provide insights to stakeholders and other interested parties on topics unrelated to cash flow, it is common practice to also report on sustainability (Kozlowski et al., 2015). These disclosures can include a company's performance on all aspects related to sustainability: social, environmental, and also economic.

A method to evaluate the environmental impact of a service, process, or, most relevant for this thesis, a commercial product, is Life Cycle Assessment (LCA), or cradle-to-grave analysis "Life-cycle assessment" (2023). In *Wikipedia*. This method assesses the energy and materials required through all stages of a product's life cycle, from the point of raw material extraction (cradle) and processing, until the product is disposed of or recycled (grave). Through databases, such as *The World Apparel and Footwear Life Cycle Assessment Database* (WLADB) founded by Quantis and collaborators from the industry, organisations can get access to LCA data on the impacts of A&F supply chains (Quantis, 2023). For fashion companies, LCA is a good way to calculate and estimate emissions in the value chain (Textile Exchange, n.d.). However, the method comes with some limitations. Certain raw material production impacts (biodiversity and social impacts to mention a few) are not captured, LCA studies on raw material are both cost- and resource-intensive, system boundaries vary across fibre types making comparison of impacts from fibre to fibre challenging, and the presentation of results from LCA studies can be done in multiple ways (i.e.,

global averages or regional impacts). Global averages will not reveal differences in impact across geographies.

There are no specific requirements for the information disclosed in a sustainability report, nor how to structure it. Some companies call them “non-financial reports”, some “sustainability reports”, some include a section on sustainability in their annual report (integrated report), and some share specific sustainability information on their websites (H&M, 2021; Inditex, 2022a; Kozlowski et al., 2015; SHEIN, 2021).

While there is no standard structure for how a company should report on sustainability, or GHG emissions, some common practices exist, and the prerequisites for producing a good report are the same for any company. A company should:

- Know why they are reporting – what is the goal of the disclosure of information (i.e., document last year’s GHG emissions)
- Know how they can measure or calculate GHG emissions – what tools are used to identify the emissions
- Know what they are reporting on – what were the specific emissions, where did they come from and how were they identified
- Know what their goals are, and what indicators can be used to measure goal achievement – if there are no specific goals to work towards, the reported information is likely to remain the same year after year

The practice of GHG emission reporting is voluntary (Kozlowski et al., 2015). As such, there are no formal control mechanisms to verify a company’s practices. However, both GRI and SBTi have requirements in place that a company must follow to comply with their methods (GRI, n.d.-b; M. Sadowski et al., 2019). The consequences for companies that fail to meet the requirements are that they cannot claim to be in accordance with the standards in their sustainability reports. That being said, GRI still encourages companies to utilise parts of their standards and approach. If a company chooses only specific parts of the GRI standards, they can still report with reference to GRI (GRI, n.d.-b, p. 5). If a company reports in accordance with the standards but fails to meet the targets they have set, there is no documentation of sanctions to be imposed on a company (GRI,

2021a; SBTi, 2023). GHG emission reporting and target setting are voluntary practices for private companies. While the society might expect such efforts, it is the action of a company's customers that might have the most severe consequences for the company. Major reveals of failed sustainability efforts or greenwashing attempts are likely to be noticed and publicly disclosed by the media, which in turn could have implications on customers' interests in buying the company's products. One example is the "greenwashing award" won by Zalando in 2022 (Forbrukerrådet, 2022). Zalando's use of sustainability filters on their web shop was critiqued, and in turn lead to Zalando removing the filter from their website. This points to another discussed issue with sustainability reporting in the textile industry – are efforts made to actually work towards a more sustainable industry, or are they imposed to maintain a customer base that is more and more environmentally aware (Wu et al., 2020)?

The *Climate Neutral Now* initiative is an initiative launched by the UNFCCC in 2015 (UNFCCC, 2015). Through the initiative, UNFCCC aims to increase climate action through the engagement of non-Party stakeholders. Organisations participating in Climate Neutral Now start by signing a pledge where they commit to measure, reduce, and report their GHG emissions to the initiative on a yearly basis. As an option, organisations can also contribute through offset (avoided, captured, or compensated emissions). Within a year after signing the pledge, a Climate Neutral Now Report must be completed and shared with the initiative. A specific report template must be used, and information disclosed includes the methodology used to estimate GHG emissions, measures taken to reduce and avoid emissions, any compensation actions taken (optional), and general information on the management of GHG emissions within the reporting organisation. A bronze, silver, and gold tier system is developed for recognition, and based on the information disclosed in the reports, the organisations are placed within one of these tiers for measurement and verification method, reduction targets, and contribution level. To achieve gold, an organisation must document 3rd party verified GHG inventory including their entire Scope 3, target Net-Zero by 2050 or earlier and provide a plan with intermediate targets with at least 5% reduction every year, and document full contribution for the entire Scope 3. The information reported and tier recognitions achieved by an organisation are made publicly available by Climate Neutral Now.

3.3 Assessment Framework

This thesis sets out to evaluate the GHG reporting practices of the textile industry, using Inditex as a case study. By reviewing the literature on sustainability reporting practices in general, and for the textile industry in particular, the limitations of current reporting practices can be identified. The expectations from standards such as GRI and SBTi compared with Inditex 2021 annual report forms a basis of the current delivery of sustainability reporting by the company. By viewing this in light of documented limitations from the literature, it is possible to derive a best practice for reporting GHG emissions by a company in the textile industry. A framework for expectations was developed and the findings from Inditex were applied to this framework.

The same framework was used to answer the question of what responsibilities Inditex have, and how they can be assessed.

3.3.1 Limitations of Current Reporting Practices

As documented by Machado et al. (2023), Helfaya et al. (2023) and Kelly Mutz (2021), one of the biggest limitations to the current reporting practices is the variation in report structures. The reports vary both from company to company, and within the same company from year to year. This makes it challenging to identify what efforts towards emission reduction are the most effective, and for parties outside of the company to verify the information disclosed. The voluntary nature of emission reporting leads to information gaps and possibly also the withholding of information that can have a negative impact on a company's reported emissions (Helfaya et al., 2023; Kozlowski et al., 2015)

The lack of transparency in the reports is also a documented limitation (Heuer, 2018; United Nations, 2021a). It is challenging to trace the reported GHG emission status and reductions back to the actions that lead to the reduced emissions.

While efforts are seen to overcome these challenges, a common reporting structure that includes a linkage between actions taken and emissions reduced is not available for companies today.

3.3.2 Ideal Reporting Flow for GHG Emission Disclosure

Based on the limitations documented in the literature, a proposed ideal reporting flow for GHG emission reduction in the textile industry has been identified as outlined in table 3 below. For companies that are already using the GRI standards and GHG Protocol methods in their approach to GHG emission reductions, most of the steps described in Table 3 below are well known. The additions that can improve report quality and transparency in the industry are public disclosure of steps 3) produce a detailed plan of where to take action to achieve emission reduction targets, 4) estimate yearly reduction per detailed plan, plus the addition of detailed disclosed emissions from year to year as per step 5). Including these steps in the GHG emission disclosures will provide both the company and the audience of the report with valuable information on which actions have the most impact, and where improvements can be made. To ensure that GHG emissions are reduced in accordance with targets set, Step 6) adjust plan/actions according to results to ensure target achievement within the set timeline, cannot be overlooked.

Table 3: GHG emission reporting flow proposed by Author

	Steps	Details
1	Conduct a GHG inventory in accordance with GHG Protocol and GRI 305-standards	Make sure that the distinction between scope 1, 2, and 3 is clear
2	Set emission reduction targets in accordance with the SBTi	Include both targets that are required and recommended
3	Produce a detailed plan of where to take action to achieve targets set in Step 2	While this step is likely done by reporting companies today, no evidence of such detailed plans has been seen by the author
4	Estimate yearly reduction per detailed plan	This step will help companies evaluate what planned actions are likely to have the most impact, and how resources should be prioritised
5	Report and verify actual emissions reduced per detailed plan (step 3), in accordance with GRI Standards	By comparing anticipated emission reductions with actual

6	Adjust plan/actions according to results to ensure target achievement within the set timeline	achievements, priorities can be adjusted to have the most impact
7	Disclose information from all steps above in yearly reports	Disclosure of this information can help other industry actors, looking to reduce their GHG emissions, know how best to approach their targets

4 Case Study – Inditex

Inditex is a Spanish retail company with a large global presence. The company originates from a small dressmaking workshop, Confecciones GOA, that was opened in the city of A Coruña in 1963 by Amancio Ortega (Inditex, 2022b). In 1975 the first Zara store was opened, marking the expansion of the company from dressmaking to retailer, and in 1985, Inditex was founded. From this date, Inditex has continued its expansion with several brands and the company now includes the brands Zara and Zara Home, Pull&Bear, Massimo Dutti, Bershka, Stradivarius, and Oysho (Inditex, 2022a). Today, Inditex has a physical presence with stores on five continents and is considered the world's largest fast fashion company, holding more than 7% of global market shares (The Business Research Company, 2023). Their net turnover in 2021 amounted to 27 716 million EUR, where more than 70% was earned through Zara (Inditex, 2022a).

Inditex aims at delivering affordable fashion to their customers across the globe and doing so without the traditional seasonal update of clothing lines in store (Tatiana Destiny Sitaro, 2020). Rather, the company produces and distributes clothes year-round as a response to customer demands, making them a typical fast-fashion company.

4.1 Inditex Ecosystem

While Inditex's global presence largely consists of company-owned stores, the company does not solely rely on 3rd party provision of services in their value chain. Company-owned facilities and services include: Headquarters housing company leadership, designers, sales; retail sales; company-owned factories; logistics centres; construction; financial services, real estate, insurance, and buyers.

Figure 5 provides a detailed map of Inditex' global presence divided by activities.

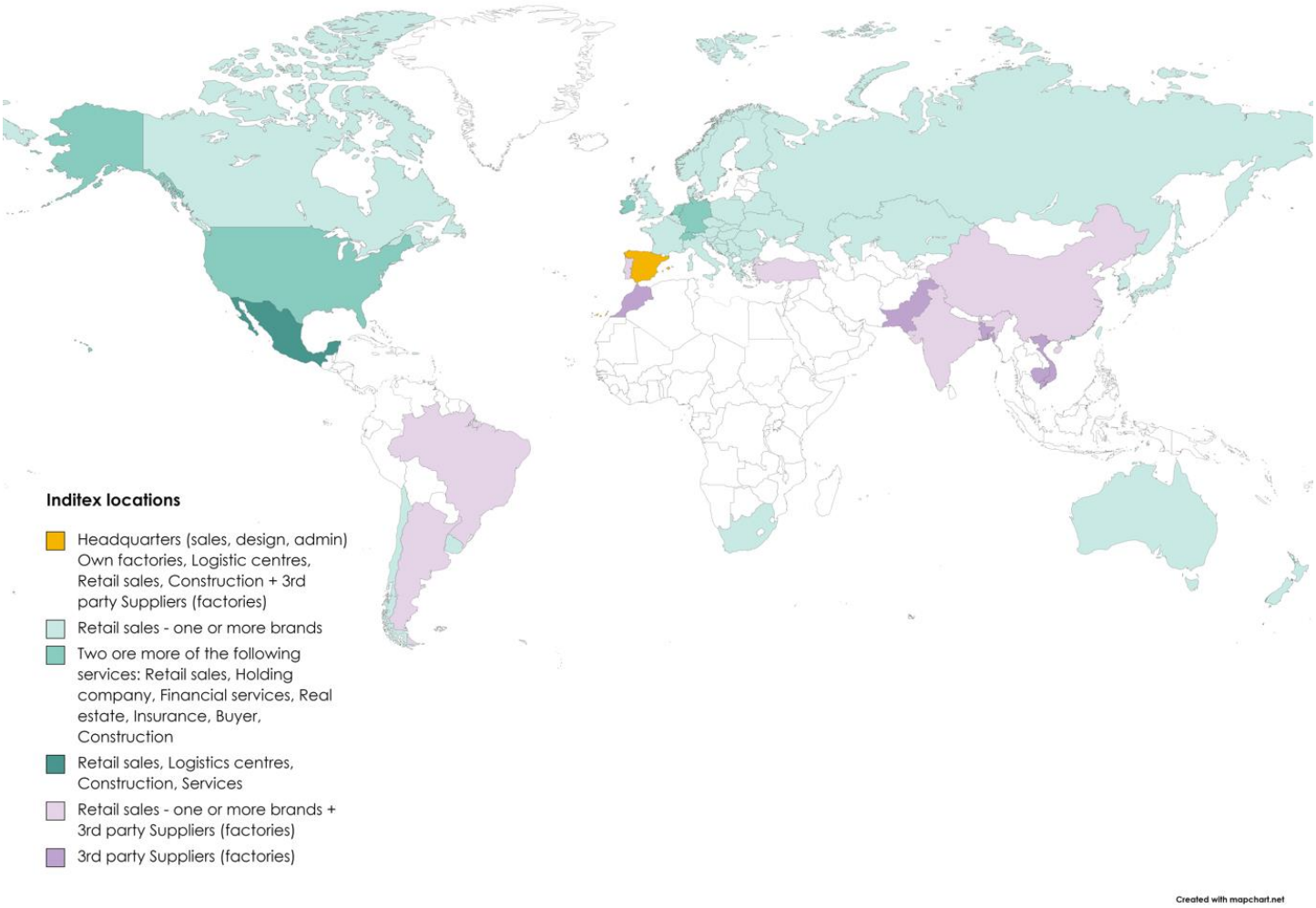

Figure 5: Inditex global presence. Map by Author, information sourced from Inditex Annual report 2021(Inditex, 2022a, pp. 115-120, 327)

4.2 Annual Report 2021

The Inditex Annual Report 2021 is an 844-page long document published on the Inditex Group web page (Inditex, 2022a). The report is in reality several reports and statements combined, where the first part includes a statement about the contents of the financial annual report, an audit report on consolidated annual accounts and a 99-page Consolidated Annual Accounts (financial information). The second part of the annual report is the Integrated Directors' Report. Herein lies a Consolidated Directors' Report, an Independent Verification Report, Report on Internal Control Systems, Annual Corporate Governance Report, Annual Report on Remuneration, and the 451-page Inditex Group's Statement on Non-Financial Information, which is where they,

among other topics, report on sustainability. The Non-Financial Information is divided into 6 main chapters: 1) Executive Chairman's statement; 2) CEO's statement; 3) Get to know Inditex; 4) Transforming with a unique model; 5) Collaborating to have a positive impact; 6) Reporting principles and indicators.

Inditex is utilising the GRI standards for reporting on sustainability, and reference is made to both GRI disclosures (either by material topic in general or specific topic disclosures) and SDGs targeted throughout the Non-Financial report. Inditex also refers to disclosures linked to the GRI Apparel and Footwear sectoral guidance (Inditex, 2022a, p. 540, footnote 120). However, this guidance is currently only a draft and not available to the public from the GRI site (GRI, 2023). Disclosures and references to the A&F sectoral guidance will not be included in further assessment of the report.

Inditex has prepared several various policies that combine to make up the company's sustainability policy. From these policies, their commitment to sustainability is expressed and a sustainability roadmap including milestones and objectives is outlined. An overview of policies, commitments, and the sustainability roadmap is presented in Figure 6.

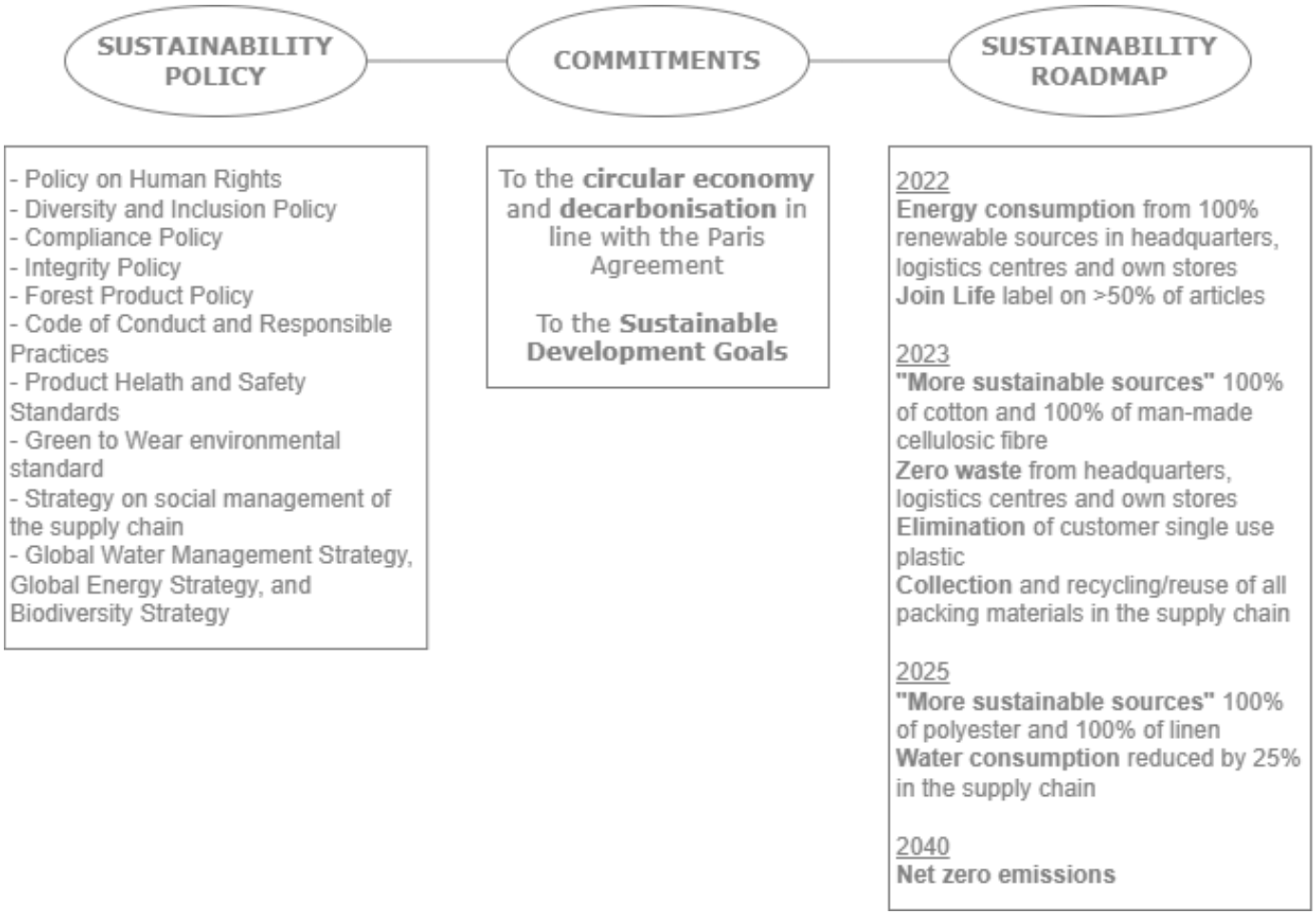

Figure 6: Inditex sustainability policy, commitments, and roadmap. Figure by Author, information sourced from Inditex Annual Report (Inditex, 2022a, pp. 185, 187)

The chapters relevant to evaluating Inditex' sustainability- and GHG emission reporting practices are Chapters 4 through 6. Chapter 4, "Transforming with a unique model", provides details on Inditex's approach to sustainability and commitment to the SDGs. Chapter 5, "Collaborating to have a positive impact", dives deeper into specific collaboration initiatives and efforts on how Inditex cares for their employees, customers, and shareholders, how they manage their products, their suppliers, and the planet sustainably. The chapter also includes culture and ethics in company governance, and risk management. Inditex emissions by scope are documented under the risk management section of Chapter 5. Chapter 6, "Reporting principles and indicators", describes Inditex's approach to reporting in detail.

4.2.1 GHG Emissions in the Report

Inditex committed and got approval of GHG emission reduction targets in line with SBTi in 2020 (Inditex, 2022a; SBTi, 2021). Using 2018 as a base year, their specific targets are to **reduce combined scope 1 and 2 emissions by 90%** by 2030, and **reduce scope 3 emissions, category purchased goods and services, by 20%** within the same timeframe (Inditex, 2022a). Their annual emissions from 2018 to 2021 are disclosed in the annual report, with boundaries of Scope 1 and 2 emissions set to: company headquarters in A Coruña and concepts' headquarters located in Spain, company-owned factories in Spain, all the logistics centres and all company-owned stores. GHG emissions from offices and factories outside of Spain are not included. It is uncertain if this also applies to the consumption of renewable energy.

As a basis to evaluate the progress towards targets, chapters referring to the GRI 300 standards for environment reporting, will be used. These chapters include:

5.4 – Collaborating to transform through sustainable management of our products

5.4.1 – Our approach to circularity (306-4)

5.4.2 – Design and selection of materials (306-1, 306-2, 306-3, 301-1, 301-2, 301-3, 304-2)

5.4.5 – Use and end-of-life products (306-1, 301-1, 301-2, 301-3)

5.5 – Collaborating so our suppliers grow

5.5.1 – Sustainable management of the supply chain (308-1, 305-6, 303-2)

5.6 – Collaborating to safeguard the planet

5.6.1 – Our approach to decarbonisation and energy management (302-1, 302-2, 302-3, 302-4, 302-5, 305-1, 305-2, 305-3, 305-4, 305-5, 305-6, 308-2, 304-2)

5.6.2 – Our approach to water management (303-1, 303-2, 303-3, 303-4, 303-5, 308-2, 304-2)

5.6.3 – Our approach to biodiversity (308-2, 304-2)

5.6.4 – Our approach to waste (306-1, 306-2, 306-3, 306-4, 306-5, 308-2, 304-2)

6.1 – Additional indicators

6.1.1 – Sustainable management of the supply chain indicators (308-1)

6.1.2 – Health and safety indicators of our products (303-2)

6.1.3 – Environmental impact management indicators (305-1, 305-2, 305-4, 305-5)

Inditex seems to be approaching GHG emission reduction in accordance with the latest standards and recommendations. They have SBTi-approved science-based targets that they are working towards, and they report in accordance with the GRI standards. Why is it then so difficult to identify their concrete actions and achievements related when reading their report? In the following section, an evaluation of the information disclosed in the Inditex Annual Report 2021 will be done in comparison with GRI standards and the proposed reporting improvement steps described in Chapter 3 of this thesis. Findings from this evaluation should reveal whether or not Inditex are living up to its responsibility in terms of GHG emission reductions.

4.3 Assessment

4.3.1 Inditex GRI Reporting

To be compliant with the GRI standards, a company must start by determining material topics that have the most significant impacts for the company, and publicly report information on these impacts (GRI, 2021a). There are no specific requirements as to how and in what format this information is made publicly available. What is required is that the company provides a GRI Content Index with an overview of the organisation's reported information and references to where the information is disclosed. Information on GRI Disclosures does only have to be reported on place – if the information is publicly available on i.e., a company's website, it does not have to be repeated in a specific report. In such cases, a reference or link to the information must be made available in the GRI Content Index. An Inditex GRI Content Index is available in the 2021 Annual Report (Inditex, 2022a, p. 552).

Inditex report on the GRI 300 Topic Standards and related Disclosures as listed in Table 4 below. The colours in column *Information disclosed in Annual Report 2021, as evaluated by the author* refers to whether GRI Disclosures are evaluated to fulfil requirements, partially fulfil requirements, or not fulfil requirements. A full description of GRI requirements and recommendations related to each disclosure is provided in Appendix II. While only the GRI 305 Disclosures relate directly to GHG emission reporting, efforts in the other 300-Topic Standards will have an impact on emissions generated. As documented by Ellen MacArthur Foundation (2017), the production of fibres and clothes, management of waste in all lines of the value chain, after-use treatment of clothes, and energy consumption are all activities leading to GHG

emissions. Any changes in these areas will have an impact on the GHG emissions generated following the change.

Table 4: GRI Topic Standards and Disclosure referenced in Inditex Annual Report (Inditex, 2022a)

Topic Standards	Disclosure	No. of references made in the report	Information disclosed in Annual Report 2021, as evaluated by the author
GRI 301: Materials	301-1: Materials used by weight or volume	2	Ch: 5.4.2: Information disclosed on tonnes of raw materials *from more sustainable sources*, and how this makes up 42% of total materials consumed Ch: 5.4.5: No information disclosed on materials use in weight or volume
	301-2: Recycled input materials used	2	Ch 5.4.2: Tonnes of recycled materials put on market in 2021 disclosed Ch 5.4.5: *Green to Pack* programme for recycled materials in packing processes
	301-3: Reclaimed products and their packaging materials	2	Ch 5.4.2: No information on reclaimed products and their packing materials identified Ch. 5.4.5: Reclaimed cardboard from recycling of *Green to Pack* boxes used to manufacture other boxes, no volume disclosed
GRI 302: Energy	302-1: Energy consumption within the organization	1	Ch. 5.6.1: Compiled global energy consumption and % of renewable energy of Inditex from 2018 to 2021 disclosed
	302-2: Energy consumption outside of the organization	1	Ch. 5.6.1: Energy consumption outside of the organization (Scope 3 activities) disclosed in MWh per transportation, franchised stores, and business travel
	302-3: Energy intensity	1	Ch. 5.6.1: No disclosures of energy intensity identified
	302-4: Reduction of energy consumption	1	Ch. 5.6.1: Reduction in energy consumption compared to 2018 disclosed
	302-5: Reductions in energy requirements	1	Ch. 5.6.1: Information on own projects for efficiency in transport and distribution that could

	of product and services		lead to reduced energy requirements disclosed, no specific numbers included
GRI 303: Water and Effluents	303-1: Interactions with water as a shared resource	1	Ch. 5.6.2: No description of interaction with water as a shared resource identified, but reference is made to *Care for Water Improvement* programme that is aimed at reducing and improve water consumption in the supply chain
	303-2: Management of water discharge-related impacts	3	Ch. 5.5.1: Reference made to *Green to Wear.* Inditex work with their suppliers to "publish the results of water waste analyses on the ZDHC Gateway platform" (Inditex, 2022a, p. 330) Ch. 5.6.2: No information on management of water discharge-related impacts identified Ch. 6.1.2: Reference made to *Clear to Wear, Safe to Wear,* and *The List*
	303-3: Water withdrawal	1	Ch. 5.6.2: No information on water withdrawal identified
	303-4: Water discharge	1	Ch. 5.6.2: No information on water discharge identified
	303-5: Water consumption	1	Ch. 5.6.2: Inditex water consumption from 2018 to 2021 disclosed
GRI 304: Biodiversity	304-2: Significant impacts of activities, products, and services, on biodiversity	5	Ch. 5.4.2: Reference made to Biodiversity Strategy Ch. 5.6.1: Disclosure on Inditex environmental impact assessment is provided, but not on biodiversity specifically. No breaches were found in 2021 Ch. 5.6.2: Water reduction as a means to protect marine and freshwater habitats Ch. 5.6.3: Information on current impact of biodiversity not disclosed, but reference is made to the *Biodiversity Strategy* and improvement initiatives and collaborations that seek to protect biodiversity. Ch. 5.6.4: No information on biodiversity identified
GRI 305: Emissions	305-1: Direct (Scope 1) GHG emissions	2	Ch. 5.6.1: Direct GHG emissions from 2018 to 2021 disclosed in tCO_2eq

			Ch 6.1.3: Description of Scope 1 emissions, calculation methodology, and emission factors used are disclosed
	305-2: Energy indirect (Scope 2) GHG emissions	2	Ch. 5.6.1: Energy indirect GHG emissions from 2018 to 2021 disclosed in tCO_2eq Ch. 6.1.3: Description of Scope 2 emissions, calculation methodology and emission factors for both location- and market-based disclosed
	305-3: Other indirect (Scope 3) GHG emissions	1	Ch. 5.6.1: Total emissions from other indirect GHG emissions disclosed in tCO_2eq for 2021
	305-4: GHG emission intensity	2	Ch. 5.6.1: No information on GHG emission intensity identified Ch. 6.1.3: No information on GHG emission intensity identified
	305-5: Reduction of GHG emissions	2	Ch. 5.6.1: GHG emissions from base year 2018 to 2021 disclosed per scope 1 and scope 2 revealing reductions. No link to specific activities leading to said reductions disclosed Ch. 6.1.3: No information on reduction of GHG emissions identified
	305-6: Emissions of ozone-depleting substances (ODS)	2	Ch. 5.5.1: No information on emissions of ODS identified Ch. 5.6.1: No information on emissions of ODS identified
GRI 306: Waste	306-1: Waste generation and significant waste-related impacts	3	Ch. 5.4.2: Increased recycled materials put on the market from previous year Ch. 5.4.5: Reference made to *Closing the Loop* programme and tonnes of clothes collected in 2021, reference made to *Green to Pack* programme with a goal of ensuring 100% reused or recycled packaging in the supply chain Ch. 5.6.4: Reference made to *Zero waste* programme

	306-2: Management of significant waste-related impacts	2	Ch. 5.4.2: Efforts towards circularity (recycled materials) and *Zero waste* programme Ch. 5.6.4: Reference made to *Zero waste* programme
	306-3: Waste generated	2	Ch. 5.4.2: No information on waste generated identified Ch. 5.6.4: Information on waste generated sorted by type disclosed
	306-4: Waste diverted from disposal	2	Ch. 5.4.1: *Closing the loop* programme for recycling, *Zero waste* programme to eliminate waste generated at Inditex's own facilities, *t2t* programmes, *Green to Pack* programme, use of recycled polyester Ch. 5.6.4: Information on waste diverted from disposal and their destination disclosed (92% in 2021)
	306-5: Waste directed to disposal	1	Ch. 5.6.4: Information on waste directed to disposal and their destination disclosed (8% in 2021)
GRI 308: Supplier Environmental Assessment	308-1: New suppliers that were screened using environmental criteria	2	Ch. 5.5.1: Information disclosed on number of pre-assessment audits of new suppliers performed in 2021 Ch. 6.1.1: Supply chain assessment, including new suppliers disclosed
	308-2: Negative environmental impacts in the supply chain and actions taken	4	Ch. 5.6.1: General information on commitments to renewable energies and decarbonisation. Vague information on atmospheric emissions from combustion and noise pollution from distribution and supply of products at night-time. Ch. 5.6.2: Reference made to *Care for Water* and *Green to Wear* programmes, no specific information on actual negative environmental impacts in the supply chain identified Ch. 5.6.3: Reference made to the *LEAF Coalition, Biodiversity Strategy,* and *Forest Product Policy.* No information on negative impacts identified

			Ch. 5.6.4: Reference made to *Zero waste* programme, applicable to Inditex-owned facilities. No information on negative impacts identified

Figure 7 shows the distribution of Inditex's level of fulfilment of GRI Disclosure requirements, as evaluated by the author. For fulfilled disclosures, the required information as described in Appendix II is identified in the Inditex Annual Report 2021. Partially fulfilled disclosures are either lacking some information or the information disclosed is unclear, while for Not fulfilled disclosures, no information as per requirements is identified in the report.

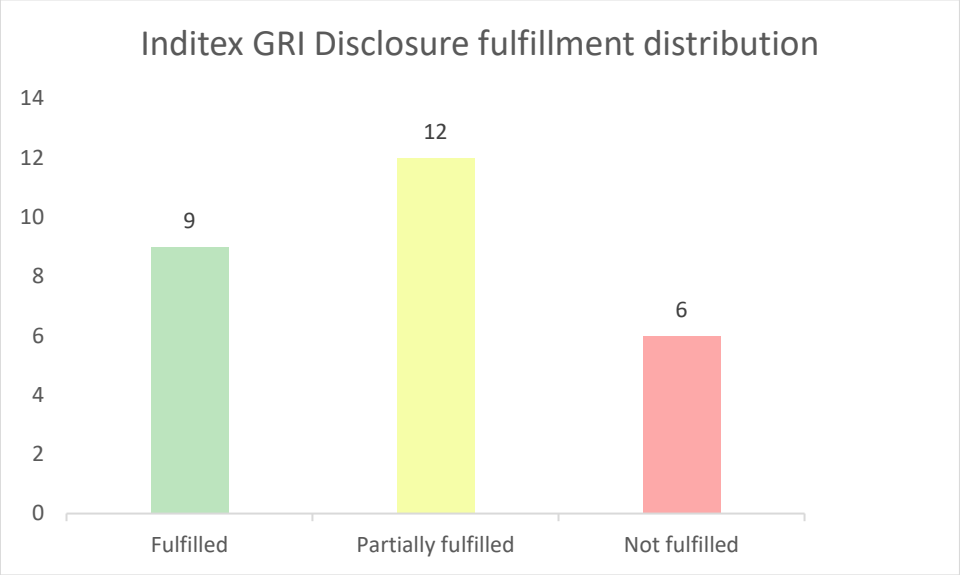

Figure 7: Distribution of level of fulfilment of GRI Disclosure requirements as evaluated by Author

There are some discrepancies between what Inditex claims to provide information on, and how the information is understood by the author. One specific example is GRI 304-2: Significant impacts of activities, products, and services on biodiversity where most of the information refers to information outside of the annual report. When evaluating the Inditex GRI Content Index, one could assume that reference would be made to the information disclosed elsewhere, but that is not the case.

One of the requirements in the GRI 305-2 Energy indirect (Scope 2) GHG Emission Disclosure, is to report on Scope 2 Location-Based GHG emissions. This information is not provided in chapter 5.6.1 where reference is made to the Disclosure. However, in chapter 5.10.4 of the Inditex Annual

Report, information is disclosed, but no reference is made to the specific GRI Disclosure (Inditex, 2022a, pp. 489, 504).

In Chapter 6.1.3, Information is disclosed in accordance with GRI 305-3 Scope 3 GHG emissions Disclosure. However, no reference is made to this Disclosure in the chapter, nor in the GRI Content Index.

4.3.2 Science Based Targets

Inditex's science-based targets are to

- Reduce combined Scope 1 and Scope 2 GHG emissions by 90% by 2030 compared to 2018 base year emissions,
- Reduce Scope 3 GHG emissions in the purchased goods and services category by 20% by 2030 compared to 2018 base year emissions.

The targets are approved by SBTi, and published on the SBTi progress dashboard (SBTi, 2021). The Scope 2 emissions disclosed at SBTi are location-based, but information on both material-based and location-based emissions is published in the annual report (Inditex, 2022a). For the Scope 3 emissions, Inditex uses the category delineation defined by the GHG Protocol, which, according to Inditex, includes: raw material extraction, raw material processing, material production, wet processes, and final product assembly (Inditex, 2022a, p. 518). However, the GHG Protocol Corporate Value Chain (Scope 3) Accounting Reporting Standards also includes the transportation of purchased goods and services in this category (GHG Protocol, 2011, p. 34). In chapter 5.6.1, Inditex also states that Scope 3 includes emissions from transportation and discloses energy equivalents in MWh from this activity. Thus, it is unsure whether or not the transportation of purchased goods and services is included in the Scope 3 SBTs.

Progress to date on the achievement of the SBTs, as presented in the Inditex Annual Report, are displayed in Table 5 below. The table also shows Scope 3 emissions divided by tonnes of articles placed on the market each year, giving a representation of the relative emission decrease as opposed to the absolute emission decrease represented for scope emissions. The Inditex Annual Report 2022 was released in April 2023 and as such is not subject to evaluation in this thesis, however, emission numbers are included in Table 5 for reference.

Table 5: Inditex reported GHG emissions per scope and Scope 3 emissions per article placed on market. Table by Author, information sourced from Inditex Annual Report 2021 and 2022 (Inditex, 2022a, p. 504; 2023, pp. 199, 115)

Emissions (tCO2eq)						
	2022	2021	2020	2019	2018	2018-2021 *(2022)* % change
Scope 1	*11 232*	14 575	11 859	15 804	19 172	-24% (-41%)
Scope 2 Location-Based	*451 430*	541 493	363 718	589 547	651 266	-17% (-31%)
Scope 2 Market-Based	*0*	47 770	98 676	293 981	419 448	-89% (-100%)
Total scopes 1 and 2 Location-Based	*462 662*	556 068	375 577	605 351	670 438	-17% (-31%)
Total scopes 1 and 2 Market-Based	*11 232*	62 345	110 535	309 785	438 620	-86% (-97%)
Scope 3	*17 223 485*	17 097 801	13 341 462	17 988 897	18 325 553	-7% (-6%)
Scope 3 Emissions per tonne of Articles on the market						
Articles placed on the market in tonnes	*621 244*	565 027	450 146	545 036	528 797	7% *(17%)*
Scope 3 Emissions per tonnes	*27.7*	30.3	29.6	33	34.7	-12% *(-20%)*

As the table shows, reported emissions have a fairly steady decrease in Scope 1, Scope 2 Location-Based and Scope 3 emissions from 2018 to 2022. What is worth noting is the sudden drop in emissions in all scopes, and especially Scope 1 and 2, in 2020, which is likely a consequence of the coronavirus restrictions imposed that year. Reported emissions increased to nearly the same level as 2019 from 2020 to 2021, except for Scope 2 Market-Based which continued to drop, even reaching 0 in 2022.

Scope 3 emissions exceed Scope 1 and 2 emissions by far throughout the timeline reported. There is a slight decrease of -7% from 2018 to 2021, but when 2022 numbers are added, the decrease is only -6%. However, if we look at the relative emissions of tonnes of articles placed on the market between 2018 and 2022 and Scope 3 emissions, we see that Scope 3 emissions per tonne of articles actually decrease by -20%. The discrepancy between the decreasing trend of Scope 3

absolute emissions reported (-6%) and Scope 3 relative emissions per tonne of articles (-20%), is a clear representation of the rebound effect and how GHG emission reduction initiatives implemented are “eaten up” by the continuous growth in production.

4.3.3 Transparency

Throughout the annual report, Inditex claims commitment to being transparent on information regarding sustainability. The word “transparency” is mentioned a total of 61 times in the report, and their main commitment is to be transparent towards their stakeholders: “Transparency is one of the pillars of our sustainability strategy, as provided in our Sustainability Policy. To achieve it, we share comprehensive information regarding our supply chain with stakeholders” (Inditex, 2022a, p. 330). The Inditex stakeholders are defined as “customers, employees, suppliers, shareholders, the community as a whole, and the environment” (Inditex, 2022a, p. 208).

Inditex does share a substantial amount of its efforts towards improved sustainability within the company in their annual report. What seems to be lacking is transparency on the specific achievements gained from all these efforts and a clear definition of the boundaries that apply to each initiative and reported information. Another challenge when trying to gain insight into GHG emission reduction commitments, efforts, and resulting impact, is that the information provided in the report is highly dispersed. For instance, it takes a great deal of effort to identify reported information related to the GRI Disclosures referenced, where information is scattered over multiple sections in some cases. And understanding what specific changes have resulted in the GHG emission reductions documented is close to impossible. One exception is Scope 2 energy indirect emissions, where the transition to renewable energy is the only source of emission reduction. However, if the general boundaries defined also apply to the Scope 2 emissions, which can be assumed, the GHG emissions reported do not tell the full story.

4.3.4 GHG Emission Reporting Flow Applied to Inditex

The “GHG emission reporting flow” presented in Chapter 3 is an effort to improve report quality and transparency on disclosed information. While conducting a GHG inventory as per GHG Protocol and GRI Standards (Step 1) and setting emission reduction targets through SBTi (Step 2) is common practice for many actors in the fashion industry, the introduction of steps 3 through 7

in reporting practices should be a means to ensure consistency and transparency. Through unambiguous disclosure of GHG emission reduction action plans (Step 3), including anticipated impact per step in the plans (Step 4), it will be much easier to determine the actual impact per effort, and for readers to interpret information disclosed in reports (Step 5). Completing Steps 3 to 5 is a prerequisite for the ability to complete Steps 6 and 7, which relates to adjusting plans according to findings from the preceding steps and including information in annual reports.

Table 6 below shows how the Inditex Annual Report 2021 fulfils the steps in the proposed GHG emission reporting flow.

Table 6: Proposed *GHG emission reporting flow with Inditex disclosures*

	Steps	Inditex fulfilment
1	Conduct a GHG inventory in accordance with GHG Protocol and GRI Standards	Inditex appears to have a good overview of its GHG inventory in its value chain. Their emission calculations are done using GHG Protocol tools and they base their reports on GRI Standards. Reported emissions are divided into scopes, and boundaries between scopes and their inclusion are documented (with some confusion regarding scope 3)
2	Set emission reduction targets in accordance with the SBTi	Targets for both combined scope 1 and 2 emissions and one category of scope 3 emissions are set and approved by SBTi
3	Produce a detailed plan of where to take action to achieve targets set in Step 2	Several collaboration initiatives, strategies, policies, and programmes are referred to in the annual report. It is challenging to identify the specific contributions from all these efforts towards emission reductions in the company. While a sustainability roadmap with specified goals and commitments is announced, no detailed plan is publicly available
4	Estimate yearly reduction per detailed plan	No detailed plan is publicly available. Information on estimated future emission reductions per year is not disclosed in the report

5	Report and verify actual emissions reduced per detailed plan (step 3), in accordance with GRI standards	Historical GHG emissions are included in the report from the 2018 base year, and thus emission reductions are disclosed. Information on specific actions resulting in emission reduction is not disclosed. Inditex has confirmation from a 3rd party company that their reporting is done in accordance with GRI standards. However, when comparing the information disclosed in the 2021 annual report with specific GRI Disclosure requirements for the GRI 300 Standard Topics, some information seems to be missing
6	Adjust plan/actions according to results to ensure target achievement within the set timeline	Unknown
7	Disclose information from all steps above in yearly reports	Not done

When applying information disclosed in the Inditex annual report 2021 to the proposed GHG emission reporting flow, as done in Table 6, it is clear that Inditex has room for improvement in the way that they report their GHG emissions. While Steps 1 and 2 are okay, Inditex lacks to disclose unambiguous information on how their GHG emission reduction efforts relate to actual emissions reduced. We know what their science-based targets are, and that they have a goal of achieving net zero by 2040, but the specifics of how to do so are lacking. As are disclosures on how much emission reduction is expected from each specific action implemented. When this information is missing, completing Steps 5 to 7 to satisfaction is not possible.

4.4 Case Study Results in View of the Literature

Inditex is the subject of evaluation in published literature. For the relevance of this thesis, literature concerning both Inditex and sustainability-related topics has been evaluated for comparison purposes. Four publications using Inditex as a use case were evaluated: *Transition to the Circular Economy in the Fashion Industry: The Case of the Inditex Family Business* (Esbeih et al., 2021), *Inditex and Sustainability: Are Inditex's commitments enough to make the company a sustainable fashion brand?* (Kelly Mutz, 2021), *Fast Fashion and Sustainability – The Case of*

Inditex-Zara (Tatiana Destiny Sitaro, 2020), *Effective Disclosure in the Fast-Fashion Industry: from Sustainability Reporting to Action* (Garcia-Torres et al., 2017), and *A UN SDG perspective for sustainable textile and apparel supply chain management* (Ya-Jun & Tsan-Ming, 2020).

Esbeih et al. (2021) evaluated Inditex's efforts and achievements in transitioning to a circular economy, looking at changes made to, i.e., improve raw material sourcing, waste reduction, and end-of-use recycling initiatives as disclosed in annual reports from 2013 through 2018. Through initiatives and programmes such as "Sustainable raw materials", "Green to Pack" and "Closing the Loop", the conclusion is that Inditex is a company concerned not only with generating profit but also transitioning to a circular economy with care for the community and sustainable use of resources. Kelly Mutz (2021) researched commitments disclosed in annual reports from 2014 through 2018 to evaluate the environmental impact of the Inditex supply chain. She concludes that even with the many programs and initiatives in place within the company, Inditex cannot be labelled a sustainable company before rethinking its business model based on continuous growth. The "Closing the Loop" programme which was mentioned as a positive effort by Esbeih et al. is accused of being a form of greenwashing by Mutz due to a lack of information and transparency regarding the programme. Mutz also comments on the lack of consistency in report structure from year to year. A consistent structure would allow for better comparison of information disclosed. Authors of both papers based their findings on information available from Inditex Annual Reports over a similar timespan (2013-2018 for Esbeih and 2014-2018 for Mutz). As such, it is interesting to see how differently the information disclosed is interpreted.

Tatiana Destiny Sitaro (2020) looked at the Inditex 2018 Annual Report, comparing it with a fixed three-split definition of sustainability (people, planet, and profit), to investigate the relationship between sustainability and the fast fashion business model of Inditex and whether the two are compatible. Through a thorough analysis of the definition of sustainability and efforts reported by Inditex, she concludes that despite the unsustainable nature of a fast fashion business model that aims to produce and sell at high speed, it is possible to incorporate a sustainable business model for fast fashion companies such as Inditex. However, the actual effect of this incorporation is difficult to assess, as we can only rely on information disclosed by the company itself.

Garcia-Torres et al. (2017) address documented issues with company sustainability reporting practices, financial performance focus, and corporate boundaries. They introduce a framework to help fast fashion companies move beyond reporting on sustainability and rather take action, and to work towards sustainable value creation both in the company and in the broader supply chain ecosystem. Inditex and H&M sustainability reports from 2015/2016 and the UN SDGs are the basis for their research. The outcome is a Fast-Fashion Sustainability Scorecard, comprising of five key elements identified for fast-fashion sustainability. While the study does not evaluate the specific performance of the companies, it addresses limitations and proposes a solution to how sustainability disclosures in the fast fashion industry can be improved to benefit and support action across industry actors.

5 Discussion

As one of the largest global actors in the fashion industry, Inditex has a responsibility to also be a forerunner and one of the largest contributors to GHG emission reductions in the industry. From evaluating the scientific literature and current target setting- and reporting practices, today, that responsibility means setting ambitious science-based targets as defined by SBTi and reporting following the GRI Standards. However, both the target setting and reporting practices come with some limitations, as made evident through the review of information reported by Inditex in their Annual Report from 2021.

Starting with target setting, SBTi uses a contraction method for the A&F sector, meaning all companies reduce emissions at the same rate and based on the same carbon budget (SBTi, 2020). (*In a broader perspective, it could be argued that A&F in the global south may have the possibility for less strict targets as they were not a part of causing the climate change problem in the first place.)* The carbon budget estimated by the Intergovernmental Panel on Climate Change (IPCC) and published in the Fifth Assessment Report (AR5) in 2013 was about 500 $GtCO_2$ for a +1.5^oC scenario (BonPote, 2021). Between the release of AR5 in 2013 to AR6 from Working Group I (WGI) in 2021, the estimates of the remainder of this budget were updated. A +1.5^oC scenario with a 50% chance, adds about 300 $GtCO_2$ to the budget compared to AR5, which could relax the reduction rate. It is uncertain whether SBTi has made changes to its methods and targets after this update, as the starting year of SBTi was set to 2015. However, with each year of not acting, more of the budget, regardless of what the estimated total is, is eaten up.

Inditex is present with company-owned facilities and operations in multiple countries of the world, including office buildings, logistic centres, factories, and stores (Inditex, 2022a). But their science-based targets, which have been approved by SBTi, are only valid for headquarters and company-owned factories in Spain, and logistics centres and company-owned stores globally. Any emissions generated from activities outside of these boundaries, such as Inditex-owned factories in Portugal, Turkey, and Morocco, are not included in targets or reports. It is uncertain how these emissions can be excluded from Scope 1 and 2, without further disclosure. Similar uncertainties with undisclosed information were reported by Kelly Mutz (2021). Her approach was to

investigate Inditex's impact on the environment by looking at the volume of garments produced each year, and the respective impact on pollution, resource use, and waste treatment. However, information on the volume of clothes produced was not available, Inditex only disclosed information on the volumes of clothes put on market. The discrepancy between produced items versus items on market is therefore unknown.

Inditex Scope 2 emissions are reported as both location- and market-based. Where GRI requires the disclosure of location-based emissions, reflecting the average emissions intensity of the grids where energy consumption occurs, the Scope 2 emissions used to disclose SBT progress, are market-based. Market-based emissions reflect emissions from electricity purposefully chosen by the company. As Inditex reported in the 2022 annual report, they are now using 100% renewable energy in the company, on sites as defined by the boundaries mentioned, resulting in zero Scope 2 market-based GHG emissions (Inditex, 2023).

The Inditex Scope 3 SBTs are set for "purchased goods and services" and from the 2021 Annual Report, it is unclear whether transportation is included in this category. Even though the chosen category is likely the most emission intense of all Scope 3 categories, with or without the inclusion of transportation, other Scope 3 activities such as franchises, investments, and the processing, use, and end-of-life treatment of sold products are also a big part of the Inditex value chain, being the source of more than 20% of total GHG emissions in 2022 (Inditex, 2023). The target set for Scope 3 is to reduce emissions by 20% by 2030. In 2021, Scope 3 emissions made up 99.6% of total GHG emissions (market-based Scope 2 emissions), or 96.9% (location-based Scope 2). When Scope 3 emissions are such a substantial part of Inditex's total emissions, it is perhaps worth asking whether the emission reduction target should be adjusted to reflect this. In addition, if we look at the relative GHG emission decrease in Scope 3 as presented in Table 5, Scope 3 GHG emissions per tonne of articles placed on market were down by 20% in 2022, eight years before the target year, showing that the simple act of producing less, or even maintaining a steady production rate, has a great effect in terms of GHG emission reduction. This would also relieve suppliers in the value chain, especially production factories located in developing countries, from some of the pressure to take emission reduction actions. Garcia-Torres et al. (2017) address the challenges related to sustainable value creation and collective impact in the supply chain from

the viewpoint of the reporting (focal) company, in this case, Inditex. The A&F supply chain both rely heavily on the services from global supply chain actors, and employs millions of workers, especially women, globally. Because of this, "there is an urgent need to leverage their [the supply chain actors] developing power for local producers, communities, and the environment, as well as reverse the negative impacts of their growth: that is, to create sustainable value within and beyond company and supply chain boundaries" (Garcia-Torres et al., 2017, p. 2).

For reporting practices, the GRI Standards are the most commonly used standard for reporting on sustainability and GHG emissions. The standards have been developed over two decades and cover a vast number of topics. The biggest challenge with the GRI Standards is that they leave great room for interpretation and for companies to "pick and choose" what topics they wish to report on. In addition, GRI does not provide any control mechanism or approval system for companies to verify that their reports are living up to the intended purpose. In the GRI 1 Foundation Standard, the following is stated on reporting practices (GRI, 2021a, p. 7)

> If the organization intends to publish a standalone sustainability report, it does not need to repeat information that it has already reported publicly elsewhere, such as on web pages or in its annual report. In such a case, the organization can report a required disclosure by providing a reference in the GRI content index as to where this information can be found (e.g., by providing a link to the web page or citing the page in the annual report where the information has been published).

In the case of Inditex, the room for interpretation and lack of specific reporting requirements is visible in the way the company refers to the disclosure of the GRI 300 Standards in Chapters relevant to sustainability- and GHG emission reporting in the 2021 Annual Report. As shown in Table 4 and Figure 7, only 9 of the 27 GRI Disclosures referenced, within 7 Topic Standards, are evaluated to be reported as fulfilled. 12 are partially fulfilled, and 6 are not fulfilled. The disclosures where Inditex delivers on both reference and information disclosed are related to: volumes of materials used in production, and the distribution of virgin materials compared to

recycled materials put on market; energy consumption from Scope 3 activities; water consumption; waste management, waste generation, and waste diverted and directed to disposal; and environmental screening of new suppliers. The disclosures where no information, as required by GRI, was identified in the report relates to reclaimed products; energy intensity; water withdrawal and discharge; GHG emission intensity; and emission of ozone-depleting substances. Information was lacking or evaluated as unclear on 12 disclosures within 6 out of 7 Topics: energy; water and effluents; biodiversity; emissions; waste; and supplier environmental assessment.

Under the Topic of emissions, there are no disclosures evaluated as fulfilled, information is lacking or unclear for both Scope 1, 2 and 3 GHG emissions, as per GRI requirements. This, combined with the SBT boundaries leaving out crucial parts of the company-owned activities that would impact both Scope 1 and 2 emissions, makes it difficult to evaluate how well Inditex are actually doing in reducing its GHG emissions and which of its efforts are most impactful.

Inditex claims to be committed to traceability and transparency (Inditex, 2022a, p. 288). But as an example, nowhere in the annual report is the origin of the cotton used in textile production stated. Nor is the information, to the author's knowledge, publicly available anywhere else. According to Fashion Revolution (2022), raw material origin is the topic of which brands are typically least transparent, and Inditex is no exception. With a score of 1/100 on "Supply chain traceability", where suppliers of raw materials are one of three disclosure levels, it is apparent that this information is not available for the public eye. Inditex is also committed to produce products with "more sustainable" raw materials, but a definition of what "more sustainable" means, is not shared.

Inditex takes pride in having a business model that enables an extremely short period of time from the identified need (want) from the market to the product being available for purchase. They call this their «proximity manufacturing model» and claim that this model "gives Inditex the ability to react swiftly to changing market circumstances and hold minimal stock. As a result, inventory surpluses are not significant" (Inditex, n.d., p. 2). At the same time, however, Inditex reports on wanting to be a contributor in consumer behaviour change and help increase the

lifetime of sold products, initiate repair- and reuse services etc (Inditex, 2022a, p. 287). This is an example of trying to integrate a fast-fashion business model with a business model focused on sustainability. As documented by Tatiana Destiny Sitaro (2020), it is questionable whether these two approaches are compatible. While sustainable practices, such as reuse, repair, and recycling initiatives, can be incorporated into a fast-fashion business model, but "ultimately the company will never become completely sustainable according to the incompatibility of the business structures" (Tatiana Destiny Sitaro, 2020, p. 4)

When reviewing literature where Inditex is evaluated with reference to sustainability, findings are not consistent. While the general perception is that the company does focus on sustainability in the supply chain, and invests resources in collaborations and improvement programmes, documentation of their outcome is lacking. This viewpoint coincides with both findings in this thesis, and the Fashion Transparency Index by Fashion Revolution. While Inditex scores 90/100 on the topic "Policies & Commitments" and 91/100 on "Governance", their score on topic "Supply Chain Traceability" is only 1/100.

Similar to the Fashion Transparency Index, Business of Fashion provides a ranking of Sustainability performance by companies year-on-year (BoF, 2022). A summary of the key findings from 2022, including company rankings, is available from their website. In the BoF Sustainability Index 2022, Inditex ranks number 9 out of 30, five below H&M at 4th place. Inditex' overall score is 40/100, while their score on emissions is 50/100, where H&M only receive a 36/100. This information, however, is based on information disclosed by the companies themselves, and for emissions, actual reduction is not measured, only a company's efforts towards reducing emissions, such as setting science-based targets.

The evaluation of Inditex responsibilities of, and efforts towards, reducing GHG emission in their value chain can only be done based on information disclosed by the company itself. Given the voluntary nature of reporting on these topics, and Scope 3 emissions being such a substantial part of the value chain emissions (Garcia-Torres et al., 2017; Inditex, 2022a; Kozlowski et al., 2015; Olatunji et al., 2019), makes it challenging to get an honest, full picture of Inditex' actual GHG emissions. The Non-Financial disclosures of Inditex Annual Report 2021 can be interpreted as an

advertisement of the company and their contributions towards making fast fashion more sustainable. Leaving out information such as reasoning behind boundaries set for Scope 1, 2, and 3 emissions makes one question the validity of the progress reported on GHG emission reduction by the company, and a business model based on continuous production growth contradicts the nature of sustainable development (Kelly Mutz, 2021; Tatiana Destiny Sitaro, 2020; WCED, 1987).

6 Conclusion and Outlook

Through the evaluation of scientific literature, best practices in target setting- and reporting of GHG emission reduction, compared with information disclosed in the Inditex Annual Report 2021, the textile industry today is not delivering according to its responsibilities. While the starting point is good, with science-based GHG emission reduction targets in line with the Paris Agreement, and a commitment to reaching net-zero even ten years before the recommendation of 2040, boundaries, and disclosures of what part of the value chain is included in the targets are lacking. The structure of the report, with disclosures of measures related to GHG emission reduction dispersed over several chapters, further complicates the evaluation of Inditex's achievements. It is also difficult to extract GHG emission reporting from sustainability reporting in general. For instance, efficiency in operation and reductions of waste generated in production are both efforts that contribute to reduced emissions but are difficult to enumerate.

As a global leader in the fashion industry, Inditex has a responsibility to be a forerunner in reducing GHG emissions in the industry and be a source of knowledge and inspiration for smaller actors in the industry. The implementation of the proposed GHG reporting flow, and especially Steps 3 through 6, with a detailed plan of where to take action, estimated emission reduction per plan, and report and evaluation of actual emission reduction versus anticipated reductions, will help companies specify their targets and prioritise their resources to achieve these targets. It will also increase the transparency of the information disclosed and help other industry actors in their efforts to reduce GHG emissions.

Other proposed frameworks and systems to improve GHG emission and sustainability reporting, are the "Fast-fashion Sustainability Scorecard" as introduced by Garcia-Torres et al. (2017) and the UNFCCC Climate Neutral Now initiatives' bronze, silver, and gold levels (UNFCCC, 2015). Both systems are using scores, either by numbers or medals, to encourage companies to take concrete action, rather than focus on reporting, evidence of the need for more transparency in what is actually being done in the fashion industry.

Supporting the need for more transparency and less GHG emissions in the fashion industry supply chain is the European Commission's proposed introduction of a Digital Product Passport (DPP)

(CISL & the Wuppertal Institute, 2022). A DPP is a way of providing information on where a product originates from, what it is composed of, and how it can be repaired, disassembled, and recycled or disposed of. Making this information available on product-level can "enable the upscaling of circular economy strategies such as predictive maintenance, repair, remanufacturing, and recycling. It also informs consumers and other stakeholders of the sustainability characteristics of products and materials" (CISL & the Wuppertal Institute, 2022, p. 9). Implementing DPPs will force the transparency of detailed supply chain information, provide a common way for companies to disclose information on their products, and help educate consumers on both the environmental impact of the products they purchase and how to maintain and dispose of it. While it is not a tool to improve GHG reporting practices, it is definitely a way of boosting circular business models, as outlined in the EU Strategy for Sustainable and Circular Textiles (European Commission, 2022a).

A scientific review of best practice GHG emission reporting in the textile industry is lacking. There are numerous guidelines and concepts, but documented information on what practices give the most versatile and accurate picture of actual GHG emissions is not available. The actual impact of coalitions, initiatives, and partnership between businesses should also be assessed. Inditex is involved in more than 70 various partnerships and initiatives all aimed, to some degree, at reducing climate change or ensuring achievement of the UN SDGs in the apparel industry (Inditex, 2022a). An evaluation of the effect of these initiatives on a global level would provide much needed insight in how valuable such efforts are. Are business leaders making actual change, or are they just adorning themselves and their companies with "green" efforts that distract and lead nowhere?

It is evident that the current practices of the fashion industry, and fast fashion in particular, is not sustainable. While clothes are a necessity that must be available for everyone at an affordable price, there is a need for change in how clothes are both produced and consumed to be able to limit global warming in line with goals set in the Paris Agreement. And while reporting on GHG emissions is not necessarily a direct contribution to achieving the goals, using the most transparent and inclusive way of reporting, will help reveal where changes must be made to achieve the goals.

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Appendix

Appendix I – Science Based Targets Criteria and Recommendations for the Apparel and Footwear Sector

Table 7: Science Based Targets criteria and recommendation. Table by Author, information sourced from SBTi A&F Sector Guidance (M. Sadowski et al., 2019)

Scope	Topic	Criteria	Details	Recommendations	Details
1 & 2	GHG emissions inventory and SBT boundary	C1 - Scopes	Targets are required to cover scope 1 and 2 for the entire company. GHG Protocol Corporate Standard applies	R1 - Subsidiaries	The recommendation is for only parent companies to submit targets. If subsidiaries submit targets of their own, boundaries between the two must be made clear (inclusion or exclusion of subsidiary targets)
		C2 - Significant thresholds	< 5% of combined scope 1 and 2 emissions may be excluded (?)	R2 - Direct land-use change emissions	Land-use change emissions are encouraged to be included when relevant. If included, calculation method should be disclosed
		C3 - Greenhouse gases	Targets are required to cover all GHGs as per GHG Protocol Corporate Standard		
		C4 - Bioenergy accounting	CO_2 emissions from biomass and biofuel combustion, plus bioenergy feedstock CO_2 removals must be included		

1 & 2	Time frame	C5 - Base and target years	5 < 15 year target coverage from date of submission	R3 - Base year	Most recent year with emission data available
		C6 - Progress to date	Targets achieved prior to submission to SBTi will not be accepted. For assessment of forward-looking ambition: GHG inventory < 2 years prior to submission	R4 - Target year	Long-term targets covering > 15 years encouraged
				R5 - Consistency	Base- and target years for all mid-term targets should be the same. As should long-term target base- and target years
1 & 2	Ambition	C7 - Level of ambition	Scope 1 and 2 targets consistent with well below 2◦C trajectory, but preferably, decarbonization targets should be consistent with a 1.5◦C trajectory	R6 - Choosing an approach	Recommendation is for companies to be as ambitious as possible in both decarbonization efforts and target years
		C8 - Absolute vs Intensity	Intensity targets only eligible when leading to absolute emission reductions in line with well below 2◦C trajectory, or when modeled using an approved sector pathway Absolute reduction targets eligible only when ambition level is within the minimum		

			range of well below 2◦C trajectory, or in line with Sectoral Decarbonization Approach (SDA) relevant for A&F sector reduction		
		C9 - Method validity	The latest SBTi-approved methods and tools should be used for modeling of targets		
		C10 - Combined scope targets	Companies can combine scopes. Target ambition criteria still apply for scope 1+2 targets		
		C11 - Offsets	Offsets are not considered emission reductions within the SBTi and company targets		
		C12 - Avoided emissions	Avoided emissions are not included in SBT emission reductions		
2	Scope 2	C13 - Approaches	For scope 2 emissions: Disclose whether a location- or market-based approach (as defined in GHG Protocol Scope 2 Guidance) is used and stay consistent with their approach	R7 - Heat and steam	Heat and steam emissions should be modeled as scope 1 (direct) emissions
		C14 - Renewable electricity	Companies can choose to either (or both) actively source renewable electricity, or set	R8 - Efficiency	Efficiency gains and decarbonization projected should be taken into account

			scope 2 emission reduction targets. Thresholds for renewable energy set by SBTi: 80% by 2025 and 100% by 2050		when modeling electricity-related scope 2 targets
1, 2 & 3	Reporting	C21 - Frequency	Progress towards targets and company-wide GHG emission inventory shall be publicly reported on an annual basis	R11 - Where to disclose	No specific requirement other than public. Suggestions from SBTi: Annual- and sustainability reports, company website, annual questionnaire from CDP
1, 2 & 3	Recalculation and Target validity	C22 - Mandatory target recalculation	Minimum frequency of revalidation and recalculation is every 5 years. Recalculation must be done in accordance with the most recent applicable criteria	R12 - Triggered target recalculation	Significant changes in the company that should trigger a recalculation of targets
		C23 - Target validity	Companies must announce their SBTi approved targets on the SBTi website no longer than six months after targets are approved. Unannounced targets are no longer considered approved	R13 - Validity of target projections	It is recommended that companies perform annual target projection validity checks. Significant changes should be reported both to the SBTi and publicly
1, 2 & 3	Sector-specific guidance	C20 - Requirements from sector-	Relevant sector-specific guidelines should be followed both for target setting and ambition level		

		specific guidance			
3	Scope 3	C15 - Scope 3 screening	A scope 3 screening must be completed for all relevant categories for determination of their significance as defined by the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard	R9 - Supplier engagement	Companies should encourage their suppliers to set targets in compliance with SBTi guidance. SBTi validation of these targets is recommended
		C16 - Requirements to have a scope 3 target	Scope 3 targets are required if scope 3 emissions exceed 40% of total scope 1, 2, and 3 emissions	R10 - Indirect use-phase targets	Initiatives such as education campaigns and customer engagement targets are encouraged when emissions from end users and/or corporate customers are significant. Targets targeting indirect use-phase emissions will not count towards the ⅔ threshold (C17)
		C17 - Boundary	At least ⅔ of total scope 3 emissions must be covered by emission reduction- and/or customer engagement targets if criteria C16 is met		
		C18 - Time frame	See C5		

		C19 - Level of ambition for scope 3 emission reductions targets	To be considered ambitious, scope 3 emission targets must fulfill one of the three criterias listed below: - Absolute: targets consistent with well below 2◦C trajectory - Economic intensity: targets resulting in > 7% year-on-year emission reduction per unit value added - Physical intensity: targets cannot lead to absolute emissions growth and linear annual intensity improvements must be > 2%		
		C19.1 - Supplier or customer engagement targets	Approval of targets regarding supplier or customer engagements requires: - Boundary: relevant upstream/downstream categories - Formulation: % of emissions covered - Time frame: < 5 years to fulfill target - Level of ambition: in line with SBTi resources		

		C19.2 - Fossil fuel sale, transmission, and distribution	NA - Relevant for companies selling fossil fuel		

Appendix II – GRI 300 Disclosure Requirements and Recommendations

Table 8: GRI 300 Disclosure requirements and recommendations. Table by Author, information copied from GRI Topic Standards (GRI, 2018a, 2018b, 2018c, 2018d, 2018e, 2021b, 2022)

GRI disclosure no	Description	Requirements	Recommendations
GRI 301: Materials 2016		The reporting organization shall report how it manages materials using Disclosure 3-3 in GRI 3: Material Topics 2021	
301-1	Materials used by weight or volume	**Report:** total weight or volume of materials that are used to produce and package the organization's primary products and services during the reporting period by i) non-renewable materials used ii) renewable materials used	**Include:** raw materials used for conversion to products or services, such as ores, minerals, and wood; associated process materials needed for the manufacturing process but not part of the final product, such as lubricants for manufacturing machinery; semi-manufactured goods or parts, including materials and components other than raw materials that are part of the final product; materials for packing purposes, including paper, cardboard and plastics **Report:** whether each material type was purchased from external suppliers or sourced internally; either these date are estimated or sourced from direct measurements; methods used if estimation is required

301-2	Recycled input materials used	**Report:** percentage of recycled input materials used to manufacture the organization's primary products and services. When compiling the information specified in Disclosure 301-2, the reporting organization shall: Use the total weight or volume of materials used as specified in 301-1 Calculate the percentage of recycled input materials used by applying the formula specified in the guidance.	**Report:** methods used if estimation is required when compiling information specified in Disclosure 301-2
301-3	Reclaimed products and their packaging materials	**Report:** percentage of reclaimed products and their packaging materials for each product category; how the data for this disclosure have been collected. When compiling the information specified in Disclosure 301-3: Exclude rejects and recalls of products. Calculate the percentage of reclaimed products and their packaging materials for each product category using the formula specified in the guidance.	
GRI 302: Energy 2016		The reporting organization shall report how it manages energy using Disclosure 3-3 in GRI 3: Material Topics 2021	

302-1	Energy consumption within the organization	**Report:** total fuel consumption within the organization from non-renewable sources in joules or multiples, and including fuel types used;Total fuel consumption within the organization from renewable sources, in joules or multiples, and including fuel types used.Total electricity, heating, cooling, and steam consumption in joules, watt-hours or multiplesTotal electricity, heating, cooling, and steam sold in joules, watt-hours or multiplesTotal energy consumption within the organization, in joules or multiples Standards, methodology, assumptions, and/or calculation tools usedSource of the conversion factors usedWhen compiling information, the organization shall:Avoid double-counting of fuel consumption, when reporting self-generated energy consumption. If the organization generates electricity from a non-renewable or renewable fuel source and then consumes the generated electricity, the energy consumption shall be counted once under fuel consumption;Report fuel consumption separately for non-renewable and renewable fuel sources;Only report energy consumed by entities owned or controlled by the organization;calculate the total energy consumption within the organization in joules or multiples using the formula specified in the guidance.	When compiling information specified in Disclosure 302-1:Apply conversion factors consistently for the data disclosed;Use local conversion factors to convert fuel to joules, or multiples when possible;Use the generic conversion factors, when local conversion factors are unavailable;If subject to different standards and methodologies, describe the approach to selecting them;Report energy consumption for a consistent group of entities. When possible, the group of entities should also be consistent with the group of entities used in Disclosure 305-1 and 305-2;Where it aids transparency or comparability over time, provide a breakdown of energy consumption data by: business unit or facility; country; type of source; type of activity

302-2	Energy consumption outside of the organization	**Report:** Energy consumption outside of the organization in joules or multiples; Standards, methodologies, assumptions, and/or calculation tools used; Source of the conversion factors used. When compiling the information specified in Disclosure 302-2, the reporting organization shall exclude energy consumption reported in Disclosure 302-1.	When compiling information specified in Disclosure 302-1: If subject to different standards and methodologies, describe the approach to selecting them; List energy consumption outside of the organization, with a breakdown by upstream and downstream categories and activities
302-3	Energy intensity	**Report:** Energy intensity ratio for the organization;Organization-specific metric (the denominator) chosen to calculate the ratio;Types of energy included in the intensity ratio; whether fuel, electricity, heating, cooling, steam, or all;Whether the ratio uses energy consumption within the organization, outside of it, or both.When compiling information specified in Disclosure 302-3: Calculate the ratio by dividing the absolute energy consumption (the numerator) by the organization-specific metric (the denominator). If reporting an intensity ratio both for the energy consumed within the organization and outside of it, report these intensity ratios separately.	When compiling information specified in Disclosure 302-3, the reporting organization should, where it aids transparency or comparability over time, provide a breakdown of the energy intensity ratio by: business unit or facility; country; type of source; type of activity

302-4	Reduction of energy consumption	**Report:** Amount of reductions in energy consumption achieved as a direct result of conservation and efficiency initiatives in joules or multiples; Types of energy included in the reductions; whether fuel, electricity, heating, cooling, steam, or all; Basis for calculating reductions in energy consumption, such as base year or baseline, including the rationale for choosing it; Standards, methodologies, assumptions, and/or calculation tools used. When compiling the information specified in Disclosure 302-4, the reporting organization shall exclude reduction resulting from reduced production capacity or outsourcing; Describe whether energy reduction is estimated, modelled, or sourced from direct measurements. If estimation or modelling is used, the organization shall disclose the methods used.	When compiling the information specified in Disclosure 302-4, the reporting organization should, if subject to different standards and methodologies, describe the approach to selecting them
302-5	Reductions in energy requirements of products and services	**Report:** Reductions in energy requirements of sold products and services achieved during the reporting period, in joules or multiples; Basis for calculating reductions in energy consumption, such as base year or baseline, including the rationale for choosing it; Standards, methodologies, assumptions, and/or calculation tools used.	When compiling the information specified in Disclosure 302-5, the reporting organization should, if subject to different standards and methodologies, describe the approach to selecting them; refer to industry use standards to obtain this information, where available (such as fuel consumption of cars for 100 km at 90 km/h)

GRI 303: Water and Effluents 2018		The reporting organization shall report how it manages water and effluents using Disclosure 3-3 in GRI 3: Material Topics 2021	
303-1	Interactions with water as a shared resource	**Report:** A description of how the organization interacts with water, including how and where water is withdrawn, consumed, and discharged, and the water-related impacts the organization has caused or contributed to, or that are directly linked to its operations, products, or services by its business relationships (e.g., impacts caused by runoff);A description of the approach used to identify water-related impacts, including the scope of assessments, their timeframe, and any tools or methodologies used;A description of how water-related impacts are addressed, including how the organization works with stakeholders to steward water as a shared resource, and how it engages with suppliers or customers with significant water-related impacts;An explanation of the process for estimating any water-related goals and targets that are part of the organization's approach to managing water and effluents, and how they relate to public policy and the local context of each area with water stress	The reporting organization should report the following additional information:An overview of water use across the organization's value chain;A list of specific catchments where the organization causes significant water-related impacts

303-2	Management of water discharge-related impacts	**Report:** A description of any minimum standards set for the quality of effluent discharge, and how these minimum standards were determined, including: how standards for facilities operating in locations with no local discharge requirements were determined; any internally developed water quality standards or guidelines; any sector-specific standards considered; whether the profile of the receiving waterbody was considered.	

303-3	Water withdrawal	**Report:** Total water withdrawal from all areas in megalitres, and a breakdown of this total by the following sources, if applicable: Surface water; Groundwater; Seawater; Produced water; Third-party water; Total water withdrawal from all areas with water stress in megalitres, and a breakdown of this total by the following sources, if applicable: Surface water; Groundwater; Seawater; Produced water; Third-party water, and a breakdown of this total by the withdrawal sources listed under Produced water; A breakdown of total water withdrawal from each of the sources listed in Disclosure 303-3 in megalitres by the following categories: i) Freshwater (≤1000 mg/L Total Dissolved Solids); ii) Other water (>1000 mg/L Total Dissolved Solids); Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used. When compiling the information specified in Disclosure 303-3, the reporting organization shall use publicly available and credible tools and methodologies for assessing water stress in an area	The reporting organization should report the following additional information: A breakdown of total water withdrawal in megalitres by withdrawal source categories listed in Disclosure 303-3, at each facility in areas with water stress; Total water withdrawal in megalitres by suppliers with significant water-related impacts in areas with water stress

303-4	Water discharge	**Report:** Total water discharge to all areas in megalitres, and a breakdown of this total by the following types of destination , if applicable: Surface water; Groundwater; Seawater; Third-party water, and the volume of this total sent for use to other organizations, if applicable;A breakdown of total water discharge to all areas in megalitres by the following categories: i) Freshwater (≤1000 mg/L Total Dissolved Solids); ii) Other water (>1000 mg/L Total Dissolved Solids);Total water discharge to all areas with water stress in megalitres, and a breakdown of this total by the following categories: i) Freshwater (≤1000 mg/L Total Dissolved Solids); ii) Other water (>1000 mg/L Total Dissolved Solids);Priority substances of concern for which discharges are treated, including: how priority substances of concern were defined, and any international standard, authoritative list, or criteria used; the approach for setting discharge limits for priority substances of concern; number of incidents of non-compliance with discharge limits;Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used. When compiling the information specified in Disclosure 303-4, the reporting organization shall use publicly available and credible tools and methodologies for assessing water stress in an area	The reporting organization should report the following additional information:The number of occasions on which discharge limits were exceeded;A breakdown of total water discharge to all areas in megalitres by level of treatment, and how the treatment levels were determined;Percentage of suppliers with significant water-related impacts from water discharge that have set minimum standards for the quality of their effluent discharge

303-5	Water consumption	**Report:** Total water consumption from all areas in megalitres; Total water consumption from all areas with water stress in megalitres; Change in water storage in megalitres, if water storage has been identified as having a significant water-related impact; Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used, including whether the information is calculated, estimated, modelled, or sourced from direct measurements, and the approach taken for this, such as the use of any sector-specific factors	The reporting organization should report the following additional information: Total water consumption in megalitres at each facility in areas with water stress; Total water consumption in megalitres by suppliers with significant water-related impacts in areas with water stress
GRI 304: Biodiversity 2016		The reporting organization shall report how it manages biodiversity using Disclosure 3-3 in GRI 3: Material Topics 2021	

304-2	Significant impacts of activities, products, and services on biodiversity	**Report:** Nature of significant direct and indirect impacts on biodiversity with reference to one or more of the following: Construction or use of manufacturing plants, mines, and transport infrastructure; Pollution (introduction of substances that do not naturally occur in the habitat from point and non-point sources); Introduction of invasive species, pests, and pathogens;Reduction of species; Habitat conversion; Changes in ecological processes outside the natural range of variation (such as salinity or changes in groundwater level). Significant direct and indirect positive and negative impacts with reference to the following:Species detected; Extent of areas impacted;Duration of impacts;Reversibility or irreversibility of the impacts.	
GRI 305: Emissions 2016		The reporting organization shall report how it manages emissions using Disclosure 3-3 in GRI 3: Material Topics 2021 When reporting on GHG emissions targets, the reporting organization shall explain whether offsets were used to meet the targets, including the type, amount, criteria, or scheme of which the offsets are part	

305-1	Direct (Scope 1) GHG emissions	**Report:** Gross direct (Scope 1) GHG emissions in metric tons of CO2 equivalent; Cases included in the calculation; whether CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, or all; Biogenic CO2 emissions in metric tons of CO2 equivalent; Base year for the calculation, if applicable, including: the rationale for choosing it; emissions in the base year; the context for any significant changes in emissions that triggered recalculations of base year emissions; Source of the emission factors and the global warming potential (GWP) rates used, or a reference to the GWP source; Consolidation approach for emissions; whether equity share, financial control, or operational control; Standards, methodologies, assumptions, and/or calculation tools used. When compiling the information specified in Disclosure 305-1, the reporting organization shall exclude any GHG trades from the calculation of gross direct GHG emissions and report; Report biogenic emissions of CO2 from the combustion or biodegradation of biomass separately from the gross direct GHG emissions. Exclude biogenic emissions from other types of GHG, and biogenic emissions of CO2 that occur in the life cycle of biomass other than from combustion or biodegradation.	When compiling the information specified in Disclosure 305-1, the reporting organization should: Apply emission factors and GWP rates consistently for the data disclosed; Use the GWP rates from the IPCC assessment reports based on a 100-year timeframe; Select a consistent approach for consolidating direct and energy indirect (Scope 2) GHG emissions, choosing from the equity share, financial control, or operational control methods outlined in the "GHG Protocol Corporate Standard"; If subject to different standards and methodologies, describe the approach to selecting them; Where it aids transparency or comparability over time, provide a breakdown of the direct GHG emissions by: business unit or facility; country; type of source (stationary combustion, process, fugitive); type of activity

305-2	Energy indirect (Scope 2) GHG emissions	**Report:** Gross **location-based** energy indirect (Scope 2) GHG emissions in metric tons of CO2 equivalent; If applicable, gross market-based energy indirect GHG emissions in metric tons of CO2 equivalent;If available, the gases included in the calculation;Base year for the calculation, if applicable, including: the rationale for choosing it; emissions in the base year; the context for any significant emissions that triggered recalculations of base year emissions;Source of the emission factors and the global warming potential (GWP) rates used, or a reference to the GWP source;Consolidation approach for emissions; whether equity share, financial control, or operational control.Standards, methodologies, assumptions, and/or calculation tolls used.When compiling the information specified in Disclosure 305-2, the reporting organization shall exclude any GHG trades from the calculation of gross energy indirect GHG emissions; Exclude other indirect (Scope 3) GHG emissions that are disclosed as specified in Disclosure 305-3;Account and report energy indirect GHG emissions based on the location-based method, if it has operations in markets without product or supplier-specific data;Account and report energy indirect GHG emissions based on both the location-based and market-based methods, if it has any operations in markets providing product or supplier-specific data in the form of contractual instruments.	When compiling information specified in Disclosure 305-2, the reporting organization should:Apply emission factors and GWP rates consistently for the data disclosed;Use the GWP rates from the IPCC assessment reports based on a 100-year timeframe;Select a consistent approach for consolidating direct (Scope 1) and energy indirect (Scope 2) GHG emissions, choosing from the equity share, financial control, or operational control methods outlined in the "GHG Protocol Corporate Standard";If subject to different standards and methodologies, describe the approach to selecting them;Where it aids transparency or comparability over time, provide a breakdown of the energy indirect GHG emissions by: business unit or facility; country; type of source (electricity, heating, cooling, and steam)

305-3	Other indirect (Scope 3) GHG emissions	**Report:** Gross other indirect (Scope 3) GHG emissions in metric tons of CO2 equivalent;If available, the cases included in the calculation;Biogenic CO2 emissions in metric tons of CO2 equivalent;Other indirect (Scope 3) GHG emissions categories and activities included in the calculation;Base year for the calculation, if applicable, including: the rationale for choosing it; emissions in the base year; the context for any significant changes in emissions that triggered recalculations of base year emissions;Source of the emission factors and the global warming potential (GWP) rates used, or a reference to the GWP source;Standards, methodologies, assumptions, and/or calculation tools used.When compiling the information specified in Disclosure 305-3, the reporting organization shall exclude any GHG trades from the calculation of gross other indirect GHG emissions;Exclude energy indirect (Scope 2) GHG emissions from this disclosure. Energy indirect GHG emissions are disclosed as specified in Disclosure 305-2;Report biogenic emissions of CO2 from the combustion or biodegradation of biomass that occur in its value chain separately from the gross other indirect (Scope 3) GHG emissions. Exclude biogenic emissions of other types of GHG, and biogenic emissions of CO2 that occur in the life cycle of biomass other than from combustion or biodegradation.	When compiling information specified in Disclosure 305-3, the reporting organization should:Apply emission factors and GWP rates consistently for the data disclosed;Use the GWP rates from the IPCC assessment reports based on a 100-year timeframe;If subject to different standards and methodologies, describe the approach to selecting them;List other indirect GHG emissions, with a breakdown by upstream and downstream categories and activities;Where it aids transparency or comparability over time, provide a breakdown of the other indirect GHG emissions by: business unit or facility; country; type of source; type of activity

305-4	GHG emission intensity	**Report**: GHG emissions intensity ratio for the organization; Organization-specific metric (the denominator) chosen to calculate the ratio; Types of GHG emissions included in the intensity ratio; whether Scope 1, 2, and/or 3; Gases included in the calculation; whether CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, or all. When compiling the information specified in Disclosure 305-4, the reporting organization shall calculate the ratio by dividing the absolute GHG emissions (the numerator) by the organization-specific metric (the denominator); If reporting an intensity ratio for other indirect (Scope 3) GHG emissions, report this intensity ratio separately from the intensity ratios for Scope 1 and 2 emissions.	When compiling the information specified in Disclosure 305-4, the reporting organization should, where it aids transparency or comparability over time, provide a breakdown of the GHG emissions intensity ratio by: business unit of facility; country; type of source; type of activity

305-5	Reduction of GHG emissions	**Report:** GHG emissions reduced as a direct result of reduction initiatives, in metric tons of CO2 equivalent;Gases included in the calculation;Base year or baseline, including rationale for choosing it;Scopes in which reduction took place;Standards, methodologies, assumptions, and/or calculation tools used.When compiling the information specified in Disclosure 305-5, the reporting organization shall exclude reductions resulting from reduced production capacity or outsourcing;Use the inventory or project method to account for reductions;Calculate an initiative's total reductions of GHG emissions as the sum of its associated primary effects and any significant secondary effects;If reporting two or more Scope types, report the reductions for each separately;Report reductions from offsets separately	When compiling the information specified in Disclosure 305-5, the reporting organization should, if subject to different standards and methodologies, describe the approach to selecting them

305-6	Emissions of ozone-depleting substances (ODS)	**Report:** Production, imports, and exports of ODS in metric tons of CFC-11 (trichlorofluoromethane) equivalent; Substances included in the calculation; Source of the emission factors used; Standards, methodologies, assumptions, and/or calculation tools used. When compiling the information specified in Disclosure 305-6, the reporting organization shall calculate the production of ODS as the amount of ODS produced, minus the amount destroyed by approved technologies, and minus the amount entirely used as feedstock in the manufacture of other chemicals; Exclude ODS recycled and reused	When compiling the information specified in Disclosure 305-5, the reporting organization should; If subject to different standards and methodologies, describe the approach to selecting them; Where it aids transparency or comparability over time, provide a breakdown of the ODS data by: business unit or facility; country; type of source; type of activity
GRI 306: Waste 2020		The reporting organization shall report how it manages waste using Disclosure 3-3 in GRI 3: Material Topics 2021	
306-1	Waste generation and significant waste-related impacts	**Report:** For the organization's significant actual and potential waste-related impacts, a description of: the inputs, activities, and outputs that lead or could lead to these impacts; whether these impacts relate to waste generated in the organization's own activities or to waste generated upstream or downstream in its value chain	The reporting organization should report a process flow of inputs, activities, and outputs that lead or could lead to significant waste-related impacts

306-2	Management of significant waste-related impacts	**Report:** Actions, including circularity measures, taken to prevent waste generation in the organization's own activities and upstream and downstream in its value chain, and to manage significant impacts from waste generated;If the waste generated by the organization in its own activities is managed by a third party, a description of the processes used to determine whether the third party manages the waste in line with contractual or legislative obligations;The processes used to collect and monitor waste-related data	
306-3	Waste generated	**Report:** Total weight of waste generated in metric tons, and a breakdown of this total by composition of the waste; Contextual information necessary to understand the data and how the data has been compiled. When compiling the information specified in Disclosure 306-3, the reporting organization shall exclude effluent, unless required by national legislation to be reported under total waste; use 1000 kilograms as the measure for a metric ton	

306-4	Waste diverted from disposal	**Report:** Total weight of waste diverted from disposal in metric tons, and a breakdown of this total by composition of the waste; Total weight of hazardous waste diverted from disposal in metric tons, and a breakdown of this total by the following recovery operations: Preparation for reuse; Recycling; Other recovery operations; Total weight of non-hazardous waste diverted from disposal in metric tons, and a breakdown of this total by the following recovery operations: Preparation for reuse; Recycling; Other recovery operations; For each recovery operation listed in Disclosure 306-4, a breakdown of total weight in metric tons of hazardous waste and of non-hazardous waste diverted from disposal: onsite; offsite; Contextual information necessary to understand the data and how the data has been compiled. When compiling the information specified in Disclosure 306-4, the reporting organization shall exclude effluent, unless required by national legislation to be reported under total waste; use 1000 kilograms as the measure for a metric ton	The reporting organization should report the total weight of waste prevented, and the baseline and methodology for this calculation

306-5	Waste directed to disposal	**Report:** Total weight of waste directed to disposal in metric tons, and a breakdown of this total by composition of the waste;Total weight of hazardous waste directed to disposal in metric tons, and a breakdown of this total by the following disposal operations: Incineration (with energy recovery); Incineration (without energy recovery); Landfilling; Other disposal operations;Total weight of non-hazardous waste directed to disposal in metric tons, and a breakdown of this total by the following disposal operations: Incineration (with energy recovery); Incineration (without energy recovery); Landfilling; Other disposal operations;For each disposal operation listed in Disclosure 306-5, a breakdown of the total weight in metric tons of hazardous waste and of non-hazardous waste directed to disposal: onsite; offsite;Contextual information necessary to understand the data and how the data has been compiled.When compiling the information specified in Disclosure 306-5, the reporting organization shall exclude effluent, unless required by national legislation to be reported under total waste; use 1000 kilograms as the measure for a metric ton	
GRI 308: Supplier Environmental Assessment 2016		The reporting organization shall report how it manages supplier environmental assessment using Disclosure 3-3 in GRI 3: Material Topics 2021	

308-1	New suppliers that were screened using environmental criteria	**Report:** Percentage of new suppliers that were screened using environmental criteria	
308-2	Negative environmental impacts in the supply chain and actions taken	**Report:** Number of suppliers assessed for environmental impacts; Number of suppliers identified as having significant actual and potential negative environmental impacts; Significant actual and potential environmental impacts identified in the supply chain; Percentage of suppliers identified as having significant actual and potential negative environmental impacts with which improvements were agreed upon as a result of assessment; Percentage of suppliers identified as having significant actual and potential negative environmental impacts with which relationships were terminated as a result of assessment, and why	When compiling the information specified in Disclosure 308-2, the reporting organization should, where it provides appropriate context on significant impacts, provide a breakdown of the information by: the location of the supplier; the significant actual and potential negative environmental impact