

# Cutting the footprint of fashion



A synthesis of recent releases,  
and implications for companies

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# Summary

Lately, many reports have been published on the topic of reducing the climate footprint in the apparel industry. However, actions discussed are often on an industry level, which can be difficult for individual companies to translate to their own business.

To facilitate for companies to navigate among possible actions, this report summarizes insights and possible actions from three prominent reports by *McKinsey & Company (2020)*, *World Resources Institute and Apparel Impact Institute (2020)*, and *The UN and Partnerships for sustainable textiles (2020)*.

Possible actions gathered from the reports are divided into four categories:

- *Suppliers*
- *Consumer behavior and new business models*
- *Transport and distribution*
- *Own operations*

The majority of the actions fall under the Suppliers category.

Key takeaways from the actions include:

- ▶▶ Develop a clear climate strategy and connect it to the business strategy.
- ▶▶ Work both with contractual requirements and voluntary development of suppliers.
- ▶▶ Investigate new types of business models.
- ▶▶ Get started straight away with own operations.
- ▶▶ Use of consumer data can support efficiency and result in financial gain.

When aiming for change, companies further need to consider cost implications, country-specific challenges as well as impact from policy and legislations, which can all affect the choices made.

Suggested next steps are to align climate strategy with business strategy, expand governance, and begin to work with the low-hanging fruits from the action lists.

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# Introduction and purpose

## Background

With a greater focus on environmental issues, the apparel industry is currently facing an intense period of analysis and growing expectations. Reports and roadmaps are being published with the aim to support a more sustainable industry, and terms such as *net-zero*, *climate neutral* and *climate positive* are being used to describe the future of fashion.

Since many of these publications take on an industry approach, individual companies face difficulties when trying to translate industry action to their own business.

The purpose of this synthesis is therefore to summarise actionable insights from three prominent reports from a company point of view, as well as to categorize and label these actions in order to help companies navigate among possible activities.

This report also aims to point out key actions brands and retailers should take to enable the transition, and elaborate on financial, geographical and policy implications, and how these can help or hinder companies to take action.

## Sources of information

- ▶▶ **McKinsey & Company – *Fashion on Climate (2020)***  
Present an analysis of the total greenhouse gas emissions from the fashion industry, and highlight areas where different stakeholders can focus their efforts. The authors quantify and estimate effects from groups of actions across the value chain, and analyze different trajectories. The report has a strong industry focus.
- ▶▶ **World Resources Institute and Apparel Impact Institute – *Roadmap to Net Zero (2020)***  
Aims to map sources of greenhouse gas emissions across both apparel and footwear value chains, highlight actions companies can take and point out challenges and possible solutions. (Currently unpublished in preliminary draft stage. Final version soon to be published.)
- ▶▶ **The UN and Partnerships for sustainable textiles – *Fashion industry charter for climate impact (2020)***  
Aims to drive the fashion industry to net-zero greenhouse gas emissions by 2050 to stay in line with keeping global warming below 1.5°C. The authors develop a playbook with actions for fashion companies, many practical examples and introductions to the topic, targeted towards less experienced companies.

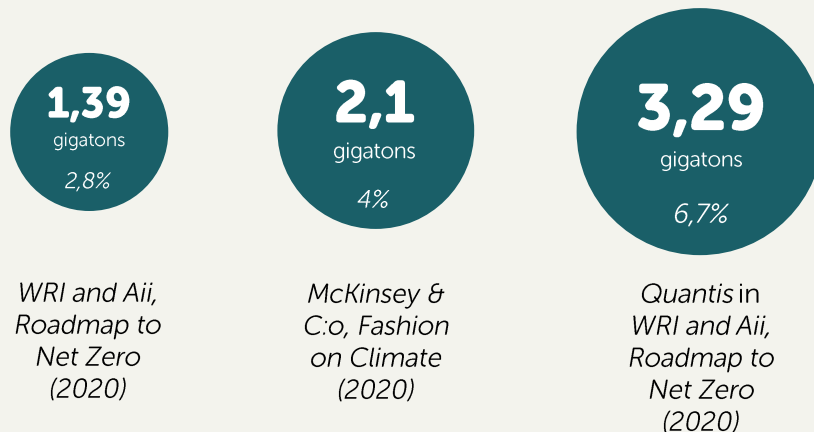
# What is the footprint of fashion?

## Total emissions from the apparel industry range from an estimation of 1.39 gigatons CO<sub>2</sub>e to 3.29 gigatons CO<sub>2</sub>e

Both *Fashion on Climate* (McKinsey & Company) as well as *Roadmap to Net Zero* (WRI and Aii) present their own estimations for total emissions from the apparel industry, while *Fashion industry charter for climate action* does not present any quantification.

In *Roadmap to Net Zero* (WRI and Aii), estimations from other reports are also presented. In this report, *Measuring fashion* by Quantis (2018) is included, in which an estimation of 3,29 gigatons is presented.

Reported below are the total emissions from the apparel industry as stated in the reports discussed above, as well as the corresponding share of global emissions, as calculated in the reports respectively.



## Difficulties lie in unifying the footprint of fashion due to different scopes of calculation

The reports that quantify emissions have analysed different parts of the industry footprint:

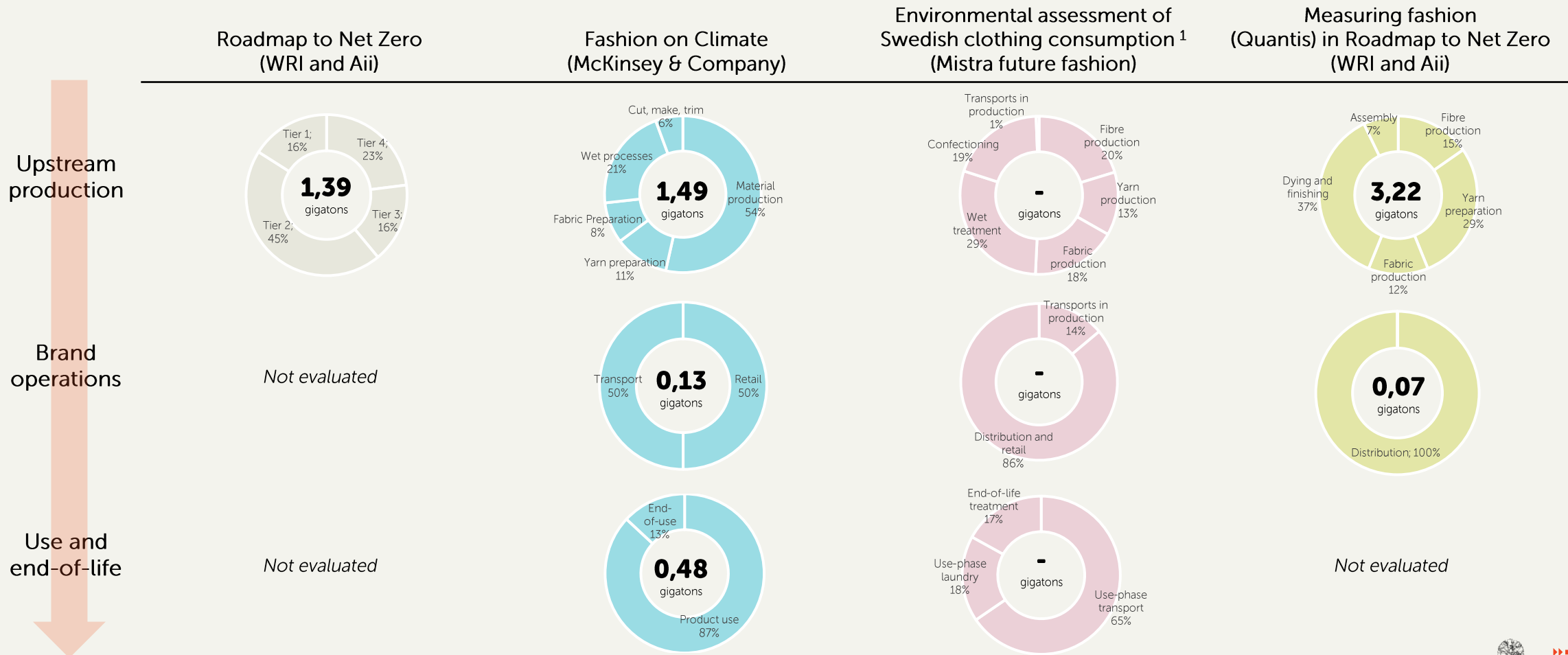
- *Roadmap to Net Zero* calculates emissions in Tier 1-4.
- *Fashion on Climate* takes on the entire value chain including end-of-life.
- *Measuring Fashion*, presented in *Roadmap to Net Zero*, estimates the beginning of the value chain as well as distribution.

In addition, a fourth report by *Mistra Future Fashion* titled *Environmental assessment of Swedish clothing consumption (2019)* divides emissions into shares for different activities and estimates the total emissions from the Swedish market to 3,27 gigatons CO<sub>2</sub>e.

In the next figure, an illustration of the varying approaches and calculations are presented. Even though the different scopes can provide a challenge for readers, there is a clear consensus about where the majority of emissions stem from in the fashion value chain.

# The dissenting footprint of fashion

This figure aims to illustrate the difference in calculations of the global footprint of fashion. Here, the reports' total amount of CO<sub>2</sub>e has been divided into stages and activities in the same way as it is presented in that specific report. This will therefore vary between the four reports, but there is a clear consensus about the main emissions stemming from the beginning of the value chain.



<sup>1</sup> Mistra future fashion only includes the Swedish market in their estimation, and these figures are therefore not included.



# Three reports – three perspectives

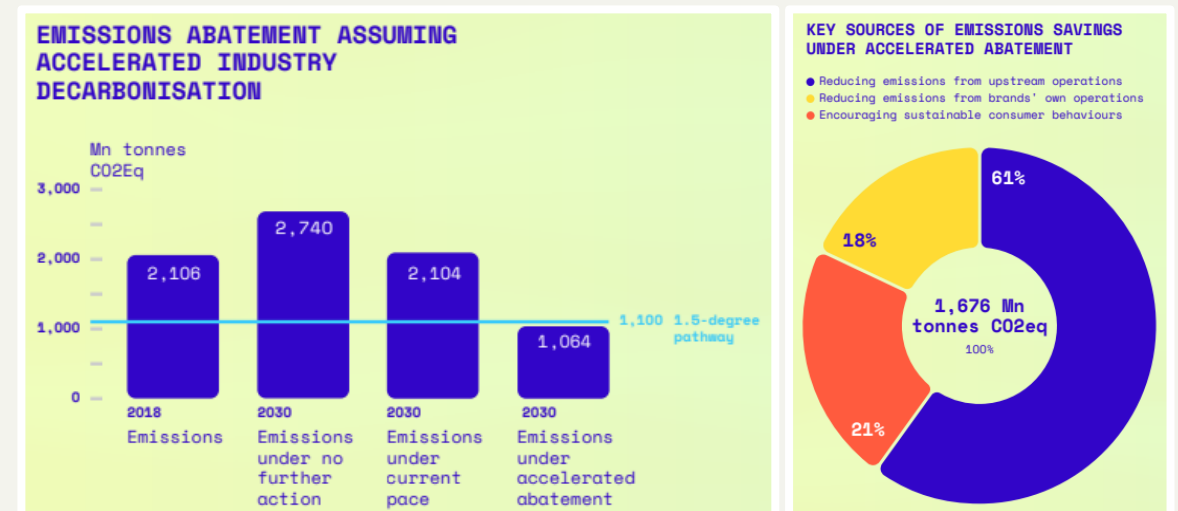
The three reports contain many actions for reducing emissions in different parts of the value chain. However, both the focus and level of detail vary greatly, and actions range from highly specific to very general, making it difficult to apply to the individual company. A suggestion on how companies could use each report is outlined below:

- ▶▶ *Fashion on Climate* (McKinsey & Company) can work as a source for quantifications of emission reduction as well as cost estimates for proposed actions.
- ▶▶ *Roadmap to Net Zero* (WRI and Aii) discusses barriers and solutions of included actions in greater detail, which can provide more advanced readers with an added solution-oriented approach to reducing emissions.
- ▶▶ *Fashion Industry Charter for Climate Action* (UN) can work as a starting point and overview for companies that wish to learn more about GHG emissions and begin tracking and setting climate targets.

In the upcoming chapter, the different actions mentioned in the reports will be presented.

The McKinsey & Company report is the only report out of the three that quantifies how much emissions can be reduced by taking action. This is however done at an industry level, and not specifically for an individual company.

The McKinsey & Company report also compares abatement under three scenarios, indicating that the current pace of change is not sufficient to reach the required 50% reduction. The majority of reductions (61%) stems from reducing emissions from upstream operations.



McKinsey & Company, *Fashion on climate*, p. 08-09

# Presenting and grouping actions

This chapter presents a summary of actions that are mentioned in the reports. In order to simplify, the possible actions are categorised based on topic in the following categories and subcategories:

- **Suppliers**
  - Energy
  - Fibre production and material choices
  - Process choice and development
  - Waste
- **Consumers and business models**
- **Transport and distribution**
- **Own operations**

Next, we attempt to group the possible actions by how directly actionable they are under the following labels:

## INVESTIGATE

Includes more complex actions that individual companies could need to research further, to efficiently apply in their own business and value chains.

*Example: Shift from wet to dry processing.*

## INFORM

Includes actions that companies could advice or inform primarily their suppliers about.

*Example: Substitute coal boilers to electric, and condensate recovery.*

## IMPLEMENT

Includes actions that most companies can start addressing right now.

*Example: Increase use of rail transport.*

Where applicable, industry-wide actions and important consumer drivers are highlighted.

**Industry-wide actions** are those deemed not suitable for a single company to achieve, but rather for an entire industry or multiple companies working together. Actions can apply outside of the strict definition of the fashion industry, such as recycling or development of new technologies.

### Industry-wide actions

▶▶ *Example: Improve farming practices for cotton*

**Important consumer drivers** include changes that need to happen on consumer level, such as increased awareness for certain topics. While companies can contribute, there are no specified actions for these changes.

### Important consumer drivers

▶▶ *Example: Increased awareness for up/down/re-cycling*



# Suppliers

## Industry-wide actions

- ▶ Reduce chemical use with more efficient technology

## ENERGY

### INVESTIGATE

- Energy improvement in sewing through new technology and equipment upgrades.
- Conduct an energy audit to determine uses of energy in a facility.

### INFORM

- Substitute coal boilers for electric, and condensate recovery.
- Reduce energy consumption across heating, ventilation and air conditioning (HVAC) technology.
- Switch to LEDs to improve energy use for lighting.
- Ensuring that HVAC systems are automatically switched off when windows are open.
- Improve lighting efficiency.
- Improve boiler efficiency.
- Condensate recovery in mill operations.
- Gain efficiency in spinning, weaving and knitting stages through for example motor and air pressure modifications in the machinery.
- Establish a submetering plan.
- Improve insulation in the buildings.
- Use cogeneration systems generating heat and electricity at the same time.
- Ensure the minimum and maximum temperatures considers energy consumption.
- Turn off, or reduce, heating and cooling during non-working hours.
- Turn off lights and unused equipment during non-use hours.

### IMPLEMENT

- Use 100% renewable energy in processing stages.
- Use 100% renewable energy in manufacturing stages.
- Shift from coal to carbon-free energy sources in textile mills and manufacturing facilities.
- Switch to low or no-carbon fuel.

# Suppliers

## FIBRE PRODUCTION AND MATERIAL CHOICES

### INFORM

- Reduce fertilizer and pesticides usage in cotton manufacturing through targeted pesticide use.

### IMPLEMENT

- ❑ Improve material efficiency by reducing the amount of material in each product, for example, less grams of cotton per t-shirt.
- ❑ Use alternative, new, recycled or sustainable materials (e.g., rPoly).
- ❑ Select materials and other product inputs with a lower carbon footprint.
- ❑ Use fewer materials in products to facilitate recycling.

## PROCESS CHOICE AND DEVELOPMENT

### INVESTIGATE

- Adopt processing technologies that consumes less energy.
- Shift from wet to dry processing.
- Use modernised cutting machines (replace manual with automatic) resulting in minimized wastage.
- Switch to low impact coloration methods (e.g., dope dyeing vs. piece dyeing, waterless dyeing).

## WASTE

### INFORM

- Improve waste collection rates in material preparation, processing and product manufacturing (e.g., through training and incentivization of factory employees).

### IMPLEMENT

- ❑ Reduce waste through targeted design (with education for designers).

## Industry-wide actions

- ▶ Advance sorting technique to improve and increase closed-loop-recycling (CLR).
- ▶ Investment in textile blend identification and recycling technology to increase closed-loop-recycling (CLR).
- ▶ Improve farming practices for cotton.
- ▶ Invest in technologies that can be used to manufacture certain types of apparel with little to zero waste.
- ▶ Reduce waste generated in the processing stages from fibre to textile, in general.
- ▶ Increase the percentage of raw materials utilized in final products, reducing waste.

# Consumer behavior and new business models

## NEW BUSINESS MODELS

### INVESTIGATE

- Rental models: subscriptions or one-time rental offerings.
- Refurbished/upcycled product offerings.
- Secondhand sales (direct or through platforms).
- Professional product repair services.

*While not explicitly discussed, the reports mention other actions to facilitate new business models such as improving logistical capabilities to facilitate rental and re-commerce models.*

## SUPPORT SUSTAINABLE CONSUMER BEHAVIOUR

### IMPLEMENT

- ❑ Better care instructions to reduce washing and drying frequencies.
- ❑ Provide easily digestible information to consumers at point of sale.

### Important consumer drivers

- ▶▶ Increased awareness and associated behavioral changes regarding washing and drying practices.
- ▶▶ Increased awareness for up/down/recycling.
- ▶▶ Behavioral change to reduce purchases with intent to return the pieces.

# Transport and distribution

## SUSTAINABLE TRANSPORT

### INVESTIGATE

- Investment in more demand-focused regional supply chains.
- Localization and nearshoring.

### IMPLEMENT

- Shift to sea transport instead of air.
- Increase use of rail transport.
- Increase use of short sea shipping and inland waterways.
- Fleets use low emissions energy source (e.g., electric hybrids, biofuels, hydrogen).

## PACKAGING ASPECTS

### INFORM

- Increase recycled content use in corrugated boxes.
- Increase recycled LDPE content in polybags.
- Reduce number of layers in corrugated boxes from five to four or three.

### IMPLEMENT

- Use two garments per polybag (through improved folding technique).

## Industry-wide actions

- ▶▶ Increased possibilities for electrifying last-mile transports, through incentives, improved battery life and improved suitability for heavy payloads.
- ▶▶ Make fleets energy efficient (e.g., driving behaviour, fleet maintenance, high-capacity vehicles).
- ▶▶ Share transport and use them to the max (e.g., load optimization, load consolidation).

# Own operations

## OWN OPERATIONS

### INVESTIGATE

- Investment in technology that forecasts demand and better production planning tools to reduce overproduction.
- Technological improvements to reduce return rates due to size and fit issues.
- Increase up/down/re-cycling (e.g., through in-house recycling technology).

### IMPLEMENT

- ❑ Use 100% renewable energy in retail/operations.
- ❑ Reduce energy consumption across heating, ventilation and air conditioning (HVAC) technology (in retail).
- ❑ Reduce overall energy consumption for example through LED lights or adjustment of temperature (see supplier actions for further inspiration).
- ❑ Reduce miles traveled by employees for business purposes.
- ❑ Install onsite renewable energy to charge vehicles.

## GOVERNANCE

*Governance actions are not emission reduction actions but rather enablers to succeed with other actions:*

- Track, analyse and benchmark performance within the company's own operations.
- Set a climate strategy.
- Set Science Based targets.
- Develop clear timelines and governance structures that support operationalisation of climate strategy.
- Prioritize transparency.



# Key takeaways from the reports

- ▶▶ **Develop a clear climate strategy and connect this to the business strategy**

Measure, follow up, and set clear goals in order to define actions plans, and incorporate these into a climate strategy. Align this with your business strategy.
- ▶▶ **Work with both contractual requirements and voluntary development of suppliers**

Actions targeted towards suppliers include both contractual requirements and cooperation with others to develop the suppliers. Many actions can be done as an individual company, while others are better suited for an industrial context. Consider the value to the supplier's business to ensure your interests align.
- ▶▶ **Investigate new types of business models**

While new business models are mainly unexplored and can seem challenging from a conventional business point of view, it is important to investigate these in order to understand the potential in terms of both climate impact and business value. For many companies, these are crucial for reaching required reductions.
- ▶▶ **Get started straight away with your own operations**

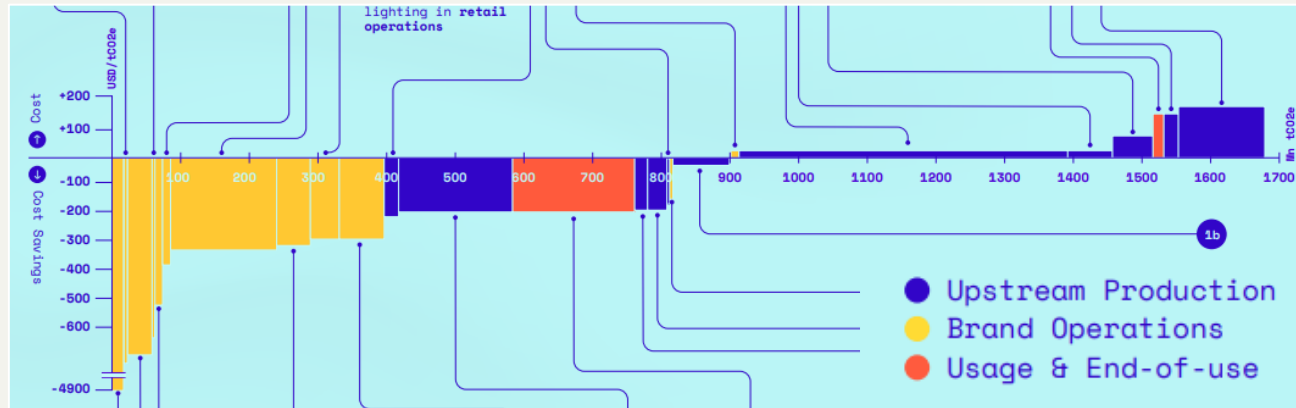
In your own operations, a majority of actions can be implemented straight away. Reducing your own emissions in scope 1 and 2 is a hygiene factor today. It is just a matter of setting targets and taking efficient action.
- ▶▶ **Use of consumer data can support efficiency and result in financial gain**

Consumer behavior has a large impact on the business, but data is becoming more and more accessible and can be utilized to, for example, reduce overproduction with subsequent cost reduction.



# Cost implications of corporate climate action

Financial considerations are discussed for many actions in the reviewed reports, but it mainly revolves around the cost perspective and not the revenue. In *Fashion on Climate* (McKinsey & Company), this is illustrated with the following image, where cost savings are shown as pillars below the line, and increased costs are shown above the line.



*Fashion on Climate/McKinsey & Company p. 18*

## COST SAVINGS

- Efficiency measures in own operations, e.g. reducing energy consumption and waste.
- Efficiency measures or waste reduction for suppliers.

## COSTS

- Measures for suppliers that relates to investments for efficiency, new equipment or process development (CAPEX).
- Improvement of material mix with an increase of recycled or preferred material (OPEX).

In *Roadmap to Net Zero* (WRI and Aii), difficulties with investments in the value chain are presented where manufacturers can face a dilemma where they could invest their own capital to make improvements, but their customers may take their business elsewhere, thus “stranding” the investment.

## ANALYSIS

- ▶▶ The presented actions are, in general, cost saving both for companies and suppliers if efficiently implemented.
- ▶▶ Especially actions for increasing efficiency within own operations (scope 1&2) are cost saving and important to work with.
- ▶▶ Informing and advising suppliers is not a major cost saving measure or a cost driver for individual companies but could be important for supplier cost savings.
- ▶▶ Change of individual materials and demands for renewable energy sources can be cost drivers, especially short-term, but can be assumed to become industry standard later.
- ▶▶ Reducing the number of suppliers and deepening the collaboration with those you have, is a way to reduce the costs and complexity of climate action.
- ▶▶ Co-purchasing of material can be a facilitator for setting requirements for materials along the value chain.

# Country specific challenges and opportunities

For many companies, the country-specific challenges for climate action mainly revolve around energy aspects of supplier location. The discussion in the reviewed reports mainly focus on difference in renewable energy options as well as differences in energy efficiency program between different supplier countries. In *Roadmap to Net zero* (WRI and Aii), energy profiles are discussed for key sourcing countries. Examples of grid mixes in included countries:

- **Vietnam:** As of 2020, 16% of electricity was sourced from renewable energy.
- **Indonesia:** In the beginning of 2020, 12.3% of generation came from renewables, with little change since 2011.
- **China:** Renewable energy has grown rapidly. At the end of 2019, 26% of the total electricity generation was from renewables.
- **Bangladesh:** As of August 2020, the share of capacity that is renewable was 3% of the total installed capacity.

In *Fashion industry charter for climate action* (UN), renewable energy profiles for common supplier countries are presented:

	TYPE OF RENEWABLE ENERGY							
	SELF-OWNED ON SITE	LEASING	PHYSICAL PPA	FINANCIAL PPA	CAPEX OFFSITE INVESTMENT	LOCAL CERTIFICATES	INTERNATIONAL RENEWABLE ENERGY CERTIFICATES	FUNDING OPPORTUNITIES/SUBSIDIES
<b>CHINA</b>	Yes	Yes	Piloting in few provinces only	N/A	Available	GEC – not validated by RE100	iREC GoldPower TIGRs	Feed in Tariff (FIT) based onsite projects offer good potential savings opportunities (in many cases without the incentive)

*Fashion industry charter for climate action/UN, p. 66*

Measures mentioned for companies in the value chain are:

- **Power purchase agreements (PPA)** where brands can offer their probable higher credit rating to secure more favorable terms. Rising use in China, India, Vietnam.
  - PPAs can allow buyers to meet renewable energy and climate change targets and have greater certainty in long-term electricity costs since the pricing terms for the off-take of electricity are locked into the contract.
- Purchase of unbundled **Energy Attribute Certificates**. Value chain players can purchase these certificates, brands can offer support by incentivising or rewarding purchases.

## ANALYSIS

- ▶▶ It is becoming increasingly important to evaluate where you have your suppliers geographically, and companies should aim towards a strategic placement of suppliers.
- ▶▶ It is important to consider country specifics beyond tier 1; for example, you will be affected by challenges in countries from which raw materials are sourced.
- ▶▶ Consider both the present status of a country but also the future ambition. For example, you can consider country commitments to the Paris agreement (NDCs) and both make use of, and support, this journey.
- ▶▶ It can be beneficial to map out origin of other products in the value chain and consider using countries as a determinant for purchases.

# Impact from policy and legislations

In *Fashion on Climate* (McKinsey & Company), three general actions are highlighted for policy makers:

- Drive sustainable practices and consumption
- Incentivise key decarbonisation levers
- Engage with industry players

In addition, more specific regulatory incentives are included such as emission targets for EU, subsidies in China, and the Waste Framework Directive in the EU.

Individual companies on the other hand, should aim to engage with policy makers, support roll-out of renewable energy and drive end-of-use collections for recycling.

In *Roadmap to Net Zero* (WRI and Aii), a suggestion is raised to remove government subsidies and pricing in the externalities of fossil fuel consumption in order to level-set the cost of energy and make efficiency more appealing. However, approaching macro factors are stated to be a significant challenge.

## ANALYSIS

- ▶▶ Policy and legislations can have large impact on businesses, for example through future laws and taxes on CO<sub>2</sub>. This can both be a risk but also an opportunity, if handled correctly. Companies should aim to foresee and act upon opportunities when they come.
- ▶▶ Companies should aim to map out and create a strategy for handling risks (specified for different risks and situations), for example according to the TCFD recommendations.
- ▶▶ Companies should push for an ambitious climate policy – EU policy becomes increasingly more important for apparel industry due to the carbon border adjustment mechanism and transport and trade policy.
- ▶▶ It is increasingly important to include considerations of policy and legislations when choosing a production country, due to the national nature of legislation. Larger companies have greater possibilities to have better relations to politics in production countries.

# Take it from here

## ▶▶ **Align climate strategy with business strategy**

Identify strengths and weaknesses of your business model from a climate perspective, set ambitious goals, play on your strengths and target your weaknesses. Concretize and consider the climate implications of your business and aim to improve within your segment, or pivot to business 2.0.

## ▶▶ **Conquer your governance**

A crucial step to achieve efficient and cohesive climate action is to measure, define a strategy, and set targets. KPIs need to be expanded from including only financial tracking to include climate performance. An action plan can be developed, where it is important to include supplier activities.

## ▶▶ **Start with low-hanging fruits**

Start working on actions that are straight-forward and easy to begin implementing, depending on your business model. Avoid letting the “perfect solution” stand in the way of action today. Getting changes done sends a strong signal both internally and externally.

## **ENABLERS FOR COMPANY ACTION**

- ▶▶ Identify and profit on the business case for transition.
- ▶▶ Build long lasting supplier relations and cooperate on making climate actions financially viable for all parties.
- ▶▶ Conscious design and planning for the entire life-cycle with reuse and recycling.

▶▶ **Contact information:**  
Majken Tottenhammar,  
majken.tottenhammar@2050.se

## About 2050

2050 works for prosperous business on a planet in balance. We help our clients to increase sustainability and profitability through analysis, communication and business development. We operate in the borderland between politics, research and business. *Read more on [www.2050.se](http://www.2050.se).*

## About STICA

The aim of The Swedish Textile Initiative for Climate Action (STICA) is to support apparel and textile companies, as well as the entire Nordic apparel and textile industry, to reduce its climate impacts in line with the 1.5°C pathway while strengthening its global competitiveness. Ultimately, STICA's aim is to ensure Sweden and the Nordic region do more than their share well before 2050. STICA believes this is the only way to avert a climate crisis. [www.sustainablefashionacademy.org/stica](http://www.sustainablefashionacademy.org/stica)