

# Practical Steps Towards Net Zero for E-Commerce

A guide to concrete actions you can take in the next 12 months – reducing, avoiding, and removing GHG emissions within and outside of your value chain – and how you can profit from them





# Contributors

This guide highlights many actions that are already implemented by industry front-runners. Some are well-known climate heroes who have put sustainability at the core of their value proposition, and others are making the transition step by step. Their initiatives can serve as an inspiration and prove that sustainability and economic success should enable one another.

Below you can see just some companies who are contributing to global carbon neutrality, many of whom are active members of our community who generously shared their insights, projects, and knowledge with us in order to bring you this guide.





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# Intro

The online retail sector has grown exorbitantly in recent years. According to Shopify, the e-commerce share of total global retail sales has grown from 7.4% in 2015 to 14.1% in 2019. This growth has come with an increase in carbon emissions directly caused by digital infrastructure, production of goods, packaging, and delivery. Hence the question arises: how can e-commerce companies reduce, avoid, and remove emissions, instead of causing more?

At LFCA we see ourselves in the unique position to gather knowledge from our members and partners, in order to share it with others who are on the same journey. More precisely, we highlight some of the key environmental pressure points and recommend operational measures that any e-commerce company can take within just a few months.

This guide is a part of the bigger LFCA community initiative, 'E-commerce climate action spotlight' through which we believe collective information exchange can facilitate essential change in each individual company. Seeing this as a continuously evolving document, we invite you to share your personal insights, struggles, and ambitions in our community (please contact us via [anna@lfca.earth](mailto:anna@lfca.earth)).



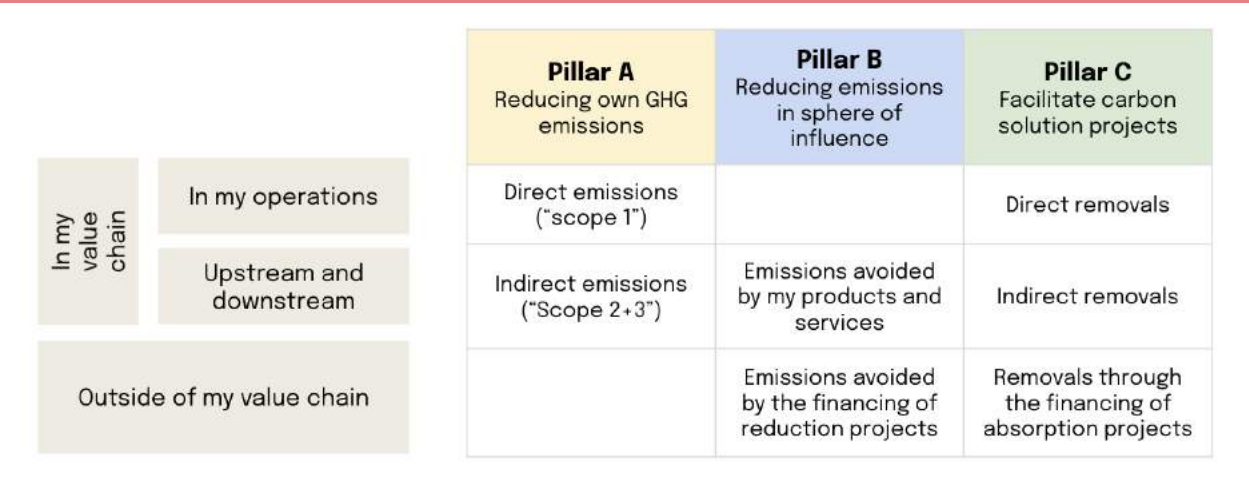
# Take a holistic approach to Net Zero

We suggest that you adopt the [Net Zero framework developed by Carbon 4](#), changing the focus of your sustainability efforts from corporate 'climate neutrality' to systemic industry change.

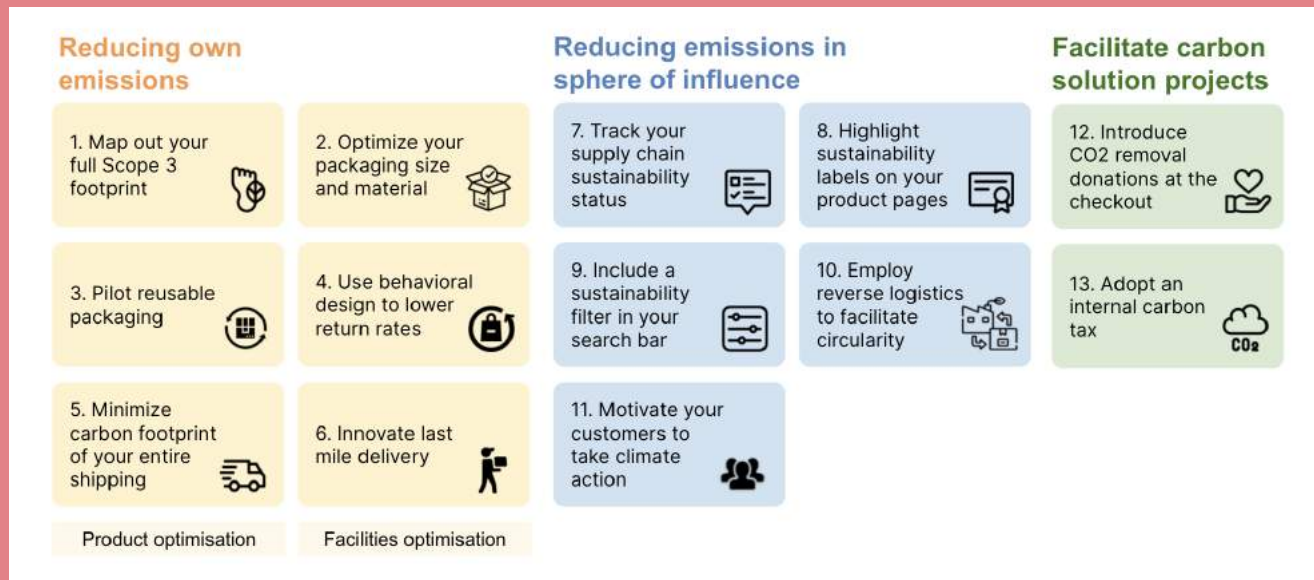
The Net Zero Initiative provides organizations with a way to describe and organize their climate action to maximize their contribution within achieving global carbon neutrality. The framework is based on several key principles:

- 1. The word "carbon neutrality" (or "net zero") refers only to the global goal of balancing the emissions and removals. It does not apply to an organization.
- 2. Organizations can only contribute to the trajectory towards global carbon neutrality.
- 3. Emission reductions and negative emissions (also called "removals") are rigorously distinguished and counted separately.
- 4. The concept of "contribution to global neutrality" is broadened to include the marketing of low-carbon products and services. "Avoided emissions" are separated into two groups: those that correspond to a real absolute decrease in the level of emissions, and those that provide only a "smaller increase" compared to the initial situation.
- 5. Carbon finance can trigger avoided or negative emissions, but it cannot "cancel" the company's operational emissions; it has to have a separate account for this.

A holistic approach to Net Zero



Following these principles from the Net Zero Initiative, in this guide we suggest that you head to the dashboard to choose projects focused on each of the pillars, making sure that you cover all of the impact areas: within and outside of your value chain, reducing your own and others' emissions, and developing carbon sinks.



## Scope of the project

While a significant part of the corporate footprint lays in the product area, we do not cover any product-specific measures and facility improvements in this document, since this guide is made for e-commerce companies that work with very different product types and different business models.



# 1. Map out your full Scope 3 footprint

Assessing and measuring your whole Scope 3 footprint can be a complex process, but you can tackle it step by step. The objective of this project is to guide you through identifying your Scope 3, mapping your Scope 3 emissions, and identifying the biggest contributors to your carbon footprint.

As an e-commerce company, The main emissions are mostly caused by production and logistics steps. As the initial step, you can start by focusing on just one specific supplier in your value chain or a specific product type to then scale up these steps across your whole supply chain.



## Impact

**Major reduction.** On average, supply chain emissions account for 5.5 times more emissions than a company's direct emissions ([Source](#)). This figure can be even higher in the e-commerce sector. Reducing the emissions in the supply chain leads to tackling one of the highest contributors to environmental impacts.

**A platform for change.** You can't manage what you don't measure. You can only build a meaningful climate protection strategy and set adequate reduction goals once you have your full Scope 3 measured.

## Benefits

### Not costly for customers.

The [World Economic Forum](#) suggested that a Net Zero Supply Chain will only increase end consumers' costs by 1-4%.

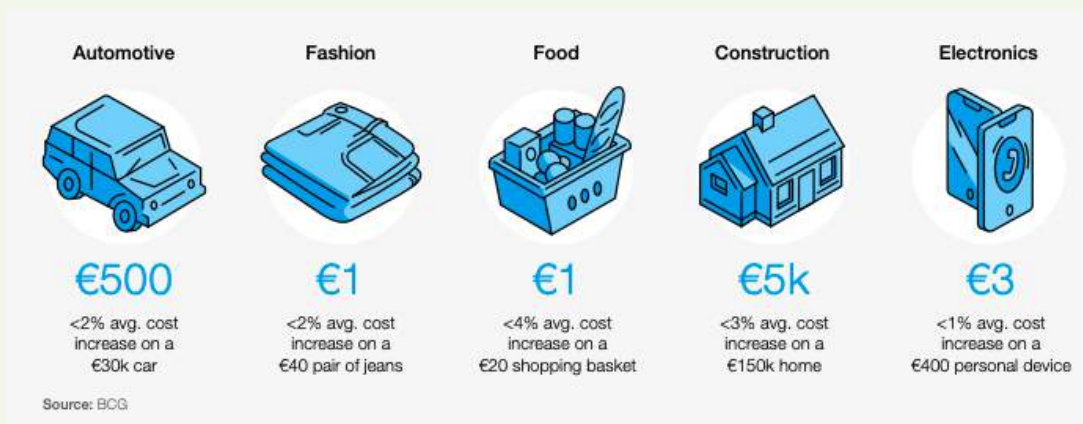


Image 1. Zero upstream emissions at low consumer costs in the medium term ([Source](#))

### Improved brand reputation.

Being engaged with an unsustainable supply chain can negatively impact brand reputation, with direct and indirect costs much higher than those necessary to implement reduction strategies. In 2010, Nestlé famously entered into a controversy with Greenpeace over unsustainably sourced palm oil.





This caused Nestlé to be suspended from the sustainable palm oil group, with the consequential downturn in stock prices and a rising environmental damage cost.

## Cost reduction.

An optimized Scope 3 not only lowers environmental impact but also energy, transportation, and environmental compliance costs, lowering the risk of non-compliance with environmental regulations.

## Reduced risk.

Disclosing suppliers reported 619 million metric tons in annual emission savings while saving over 33.7 billion USD. (Source) Companies could face 120 billion USD of increased costs from environmental risks in their supply chain within 5 years.

TYPE	DESCRIPTION	AVERAGE RESULTS	COMPARED TO SUSTAINABLE PROCUREMENT PROGRAMME COSTS	IMPLEMENTATION PROBABILITY
1. Cost reduction	Reduction in total cost of ownership linked to reduced energy costs, reduced over-specification, reduced consumption and reduced social and environmental compliance costs	0.05% of total revenue per project <sup>1</sup>	Up to 6 times payback	High
2. Risk reduction	Financial impact on brand value from bad supplier practices (e.g., child labour, local pollution); economic cost of supply chain disruptions (e.g., noncompliance with environmental regulations)	Additional direct costs as a 0.7% of total revenue	Up to 85 times payback	Low
		Decrease of 12% in market cap	NA	Low
3. Revenue growth	Additional revenue through innovation of eco-friendly products/services, price premium or income from recycling programmes	0.5% of total revenue	Up to 58 times payback	Medium

According to the above model, it appears that the cost reduction impact of Sustainable Procurement (on those categories where cost savings and sustainability benefits are aligned) outweighs the implementation costs in almost all of the cases studied.

Image 2. Impact of a sustainable supply chain (Source)



## Examples

In this project, we mainly talk about the measurement of your Scope 3 emissions which, most importantly, gives you an opportunity to set clear reduction targets.



**Carlsberg** has a target to reduce its “beer-in-hand” footprint by 30% by 2030. This includes refrigeration emissions in bars and shops, emissions in the supply chain, and distribution. Since ~85% of emissions are out of Carlsberg’s direct control, the company is encouraging suppliers to commit to science-based targets. As of February 2020, 110 suppliers in Carlsberg’s supply chain have already committed. ([Source](#))



**IKEA** group committed to science-based targets to keep warming levels to 1.5°C or below by 2030. To do so, IKEA commits to reducing absolute Scope 3 GHG emissions caused by home furnishing, food, component, and catalog suppliers by 80%. The group also commits to reducing travel and home-delivery GHG emissions by 50% per person for customers and co-workers. ([Source](#))



**Decathlon** has committed to science-based targets to keep warming levels to 1.5°C or below by 2026. Regarding Scope 3 emissions, the company is committed to urge 90% of its suppliers to set science-based targets by 2024. ([Source](#))



## Implementation





### Identify major product and service categories that contribute to your Scope 3 emissions

- ▶ Consider your company's largest categories of procurement expenses and categories that are critical to business operations. You can choose to focus on a specific supplier or to make the full Life Cycle Assessment (LCA) of a product, or even focus only on a specific region. Prioritizing criteria can include procurement costs or sales volumes for a product or service. If many similar products are produced, it might be useful to focus on individual components and raw materials.
- ▶ You can ask for support from experts in the field in any implementation step, to name a few [Envizi](#), [BSR](#), [CarbonFootprint](#) and [Supplyshift](#).

### Choose an online calculator

- ▶ By having your supply chain in mind, you can choose an online calculator to measure the carbon footprint. You will find some free options linked below. Several available software and databases offer a view on the overall supply-chain footprint, others offer an approximate view of the carbon footprint of a single product.
- ▶ Tools that can help you to calculate it are [MyClimate](#), [Climate Partner](#), [Planetly](#), [Climate Neutral](#), and many more.

Some of the tools that focus precisely on the supply chain are:

-  **Tool:** [Billerudkorsnas -Supply Chain Calculator](#)
-  **Tool:** [GZA - Supply Chain Calculator](#)
-  **Tool:** [Quantis - Scope3 Calculator](#)
-  **Tool:** [2030 Calculator - Footprint of Product](#)



## Define the information and data you need to collect

- ▶ Throughout the steps of measuring your carbon footprint, you should revise your sustainability strategy and map the most critical points to start from. The main step is to identify a set of questions that will help you find this information. An example of questions can be found at [KMU Kompass](#):

- Which raw materials have the highest purchasing volumes and/or are strategically relevant for your company?
- In which countries are your direct and indirect suppliers located? In which countries are your products sold or your services provided?
- What criteria does your company use to select suppliers and customers, and have suppliers been obliged to meet your company's requirements (code of conduct, purchasing conditions, etc.)?
- Is the transport of goods optimized (tailored packaging, use of renewable energy, no empty trucks)?
- Are there already internal processes to address sustainability risks?
- Do customers, investors or other actors have specific sustainability requirements for your company?
- ... and many more.

## Check benchmarks for your sectors

- ▶ Through companies such as [Ecochain](#), [Right.Based on Science](#) and [KlimaMetrix](#) you can define values of reference for your GHG emissions.

## Gather information on the environmental impact of every contributor in the supply chain of the selected supplier or product

- ▶ Define Criteria for environmental responsibility you want to focus on apart from carbon footprint- here you can find examples from the [Bavarian Environment Agency](#):

- Reducing emissions (airborne pollutants, noise),
- Improving waste management (avoiding, utilising and properly disposing of waste),



- Treating and discharging wastewater in an environmentally friendly way,
- Reducing resource consumption (including energy and water) and bolstering energy efficiency,
- Protecting natural ecosystems and biodiversity
- Explore knowledge within the company, bringing people together who can contribute to the topic.

- ▶ Ask your direct suppliers whether they have already mapped their supply chains (e.g. self-assessment, audits, certificates, etc.). If not, try to understand if they would like to conduct this research together.

## Set reduction goals

- ▶ You can set your own emission reduction goals and ask suppliers to do the same. For example, Walmart's Project Gigaton initiative does not impose standards; instead, it allows suppliers to set specific, measurable and achievable emission reduction goals for themselves.
- ▶ To set real reduction goals, the best way to proceed is to define Science Based Targets (SBTs). Reduction goals can be considered SBTs if they follow the latest scientific research and if their final objective is to meet the Paris Agreement goals - therefore, to limit warming to 1.5°C.

 [Guide: World Economic Forum - Reductions overview per sector](#)

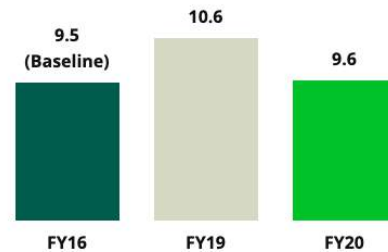
## Disclose your carbon footprint transparently and publicly

- ▶ Share with your customers details about your footprint and the progress you are making. Show the current state of your scope 1, 2, and 3 emissions on your website in a clear way, possibly with graphs and breaking the numbers down into different categories.



- For example, IKEA shares the footprint of its value chain divided by emission sources, from food ingredients to transportation of goods. They always show progress throughout the years in a bar chart, as shown in image 3

The largest portion of the IKEA climate footprint can be attributed to raw materials extraction and processing. Our aim for FY30 is to only use renewable or recycled materials. While wood is our most-used material, metals have a higher climate footprint since they are more energy-intensive to produce and rely on the use of coal. In FY20, we increased the share of recycled polyester in textile products and reached 83% (up from 59% in FY19).



Climate footprint (million tonnes CO<sub>2</sub> equivalent)

Image 3. IKEA's raw materials Footprint over the years ([Source](#)).

- Decathlon shares a breakdown of their GHG emissions by scope in their annual declaration of extra-financial performance. You can find an example here below:



Image 4. Decathlon's carbon footprint disclosure ([Source](#))

## ☹ Extra Mile

### Educate your supplier

- You can directly help your suppliers in learning how to lower their impact.



- ▶ For example, Tesco has established the Tesco Supplier Network, an online engagement platform, where suppliers are educated on carbon reductions and environmental footprint, receiving practical advice and insights.

## Invest in projects to accelerate carbon neutrality

- ▶ Take responsibility for the full scope. No company can be climate neutral by itself but can contribute to global climate neutrality. While the most important focus for long-term sustainability should be emission reduction, investing in carbon sinks or facilitating projects to implement emission reduction in the supply chain can contribute to achieving the Paris Agreement goals. You can develop carbon sinks with any GS or VCS certified offsetting provider, or look into insetting projects along your company's value chain.

## Account product emissions, including Scope 4

- ▶ A way to win customer's trust is to report transparently on why your emissions are increasing and decreasing. When working on your product, you can also consider how to make it more environmentally efficient, not only in terms of Scopes 1,2, and 3, but also considering Scope 4.
- ▶ Scope 4 emissions, as outlined in the GHG protocol, are those emissions that can be avoided by using a specific service or product. Reporting on these emissions can give a better view of a company's carbon footprint as they often risk being "concealed". For example, a product designed to avoid emissions could face a rise in sales because of its higher level of efficiency, making the corporate carbon footprint look higher if the scope 4 is not calculated. (Source)
- ▶ Taking avoided emissions into account both in management and reporting, not only improves a company's credibility but also incentivizes the production of energy-efficient and low-carbon products. (Source)

 Tool - Product Optimization Platform

 How to - Comparative estimation and report of products' impact

 Inspiration - Impact of sustainable sourcing on communities





## 2. Optimize your packaging size and material

This action focuses on the two main ways you can make your packaging less environmentally impactful and reduce your carbon footprint:

1. Optimize your packaging in terms of size, material, and shape, to accurately match the dimensions of your products. This change will allow you to efficiently store, consolidate, and deliver your products - not air!
2. Adjust the materials of your single-use packaging, when reusable packaging is not a possibility. Conventional plastics and cardboard are the most chosen options, but it is possible to use alternative raw materials that are less impactful in terms of waste generated, energy and water used in production, and recycling processes.



## Impact

### Reduced waste and fewer emissions - with optimized packaging.

Impact comes from any of these adjustments:

- more precise packaging size allows shipping more goods in one truck,
- reduced weight of packaging allows using less fuel for deliveries,
- reduced filling material causes less waste,
- optimized packaging design (e.g. using less ink and glue) makes recycling easier.

In Image 1. you can see an overview of the environmental impact of the most common types of packaging.

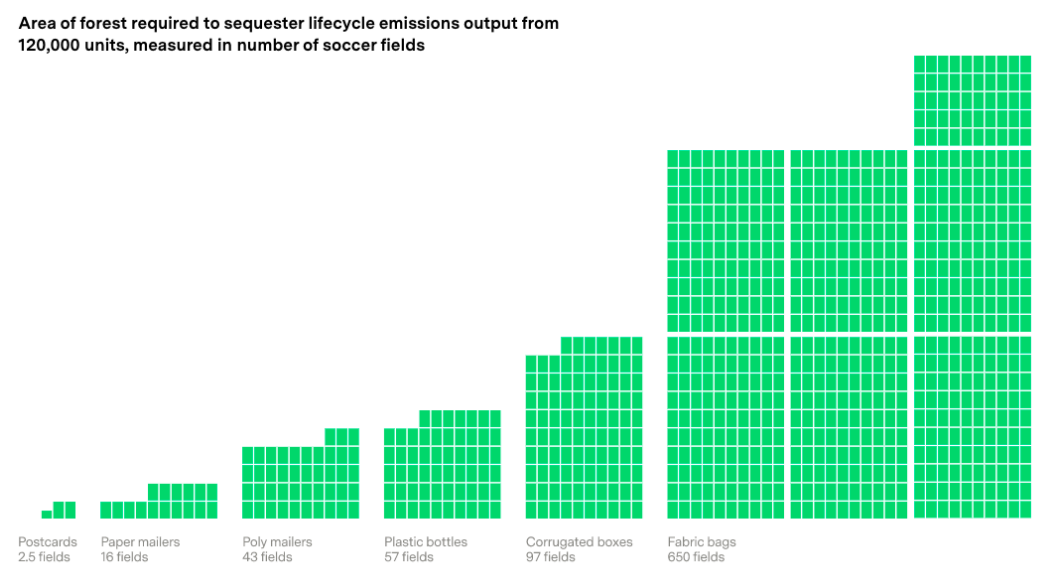


Image 1. Areas of forest required to sequester lifecycle emissions of common packaging ([Source](#))

### Lower carbon footprint - with alternative materials.

Single-use plastic continues to have a high carbon footprint. Research has shown that approximately 79% of plastic accumulates in landfills or in the environment due to low post-consumer recycling rates ([Source](#)).

To fight that, many shops are switching to paper bags, but the environmental advantage of this choice is not clear. Plastic is less readily recyclable, but its production has a lower carbon footprint. The only way for some alternative materials to be better than plastic in terms of footprint is to re-use them several times: paper bags should be re-used 43 times and organic cotton bags 20,000 times according to a Danish study.



## Benefits

### Lower shipping costs.

According to Mixmove the average fill rate per truck in Europe is 52% meaning that most trucks are transporting 48% air. Higher efficiency and a 90% fill rate would bring this up to 50% less CO2 and 35% less shipping costs.

### More efficient use of space in distribution centers.

It is not only the space in trucks that gets wasted with non-optimized packaging, but also in distribution centers and warehouses.

### Reduced product damage.

Packaging with optimized shape and size means a more protected and stable product inside, which results in lowering the possibility of damages.

### Higher interest in the product.

Higher interest in the product. Report findings show that 68% of consumers associate plastic with ocean pollution considering it as harmful packaging. Consequently, according to research, 74% of consumers are willing to pay more for sustainable packaging that does not constitute harm to the environment. (Source)

It can also be a sales argument in case the product packaging carries more positive side effects (e.g. flower seeds in compostable material, nutrition for flora & fauna, edibility such as NotPla).



## Examples



**DELL** reduced its box sizes by about 10% in 2008, developed bamboo cushioning to replace the foam, and produced wheat straw packaging from agricultural waste, thus eliminating 20m pounds of packaging and saving \$18m in energy, water, transportation, and production costs. As a consequence, greenhouse gas emissions fell by 8%.



**Alter Eco**, a French fair-trade company, also reduced the cardboard packaging of its chocolate bars from 220 g/m2 to 205 g/m2 (a 7% reduction). Saving 1.5 euro cents per bar amounts to a significant saving considering that the company sells around 3.6 million units per year.



**Bol.com**, the largest online retail platform in the Benelux, implemented a series of measures to minimize the impact of their packaging.

- By 2025, 100% of the cardboard boxes they use will be carbon neutral or recycled.
- If the original packaging of an item is sturdy enough, they don't use their own shipment boxes.
- The residual cardboard waste is 100% recycled.
- They send 75% of their packages without filling material. And they work with a growing number of advanced packaging machines that pack precisely to size to limit 'empty air' in packages, save cardboard, and arrange logistics more efficiently.



# Implementation

## Map and assess all packaging used for your products

- ▶ Check if all of your products have the most fitting package size, if they have unnecessary filling materials, estimate the environmental impact of your packaging (e.g. water consumption, energy in production, waste streams) by using environmental impact assessment tools.
- ▶ Perform a Life Cycle Assessment (LCA) to measure the carbon footprint of your existing packaging. This allows you to understand your current impact but also to choose the most viable alternative.
  - 🧰 Guide: [How to calculate your packaging emissions](#)
  - 🧰 Tool: [Boxes footprint calculator](#)
  - 🧰 Tool: [LCA of packaging](#)

## Necessity check

- ▶ Eliminate your shipment packaging completely when the original packaging of the product is safe enough.

## Avoid single-use plastic

- ▶ While it is often impossible to completely avoid using plastic packaging across your supply chain, you can launch cooperations to recycle the plastic used in your packaging.
- ▶ Internally, adjust the design of your polybags to make them more recycling-friendly. Some examples are: no stickers, less ink, pillowcase type of closing instead of glue, etc.
- ▶ Externally, join initiatives like [The Single Use Plastics Project](#) run by the European Outdoor Group, which can help you to have an impact on a larger scale.




## Involve your supply chain partners


- ▶ Involve your supply chain partners
  - Approach fulfilment centers and suggest them to start collaborative projects to improve packaging & handling.
  - Ask your suppliers to redesign your packaging in terms of material use, filling-material necessity, individual sizing, and waste streams.


## Choose alternative types of packaging

- ▶ Compare alternative materials in terms of CO2 savings, costs, reusability, recycling potential, and choose the best option to implement.

Below you can find some links and materials that should help:

 **Guidelines:** In this [WRAP's guide](#) you can find a wide variety of approaches to optimize your packaging including tips from improving the recyclability of paper to choosing the right polymers.

 **Database:** [Guacamole Airplane](#). Here you can find an extensive list of the most innovative suppliers offering alternative packaging

 Find our overview of the most common alternative materials in the Appendix at the end of this guide.

## Test the packaging

- ▶ Order samples and run trials for real case studies, i.e. fulfil dummy orders to test durability and practicality of the alternative. Gather feedback from all stages: fulfilment, dispatch, delivery, customer and rate options accordingly. Here below some possible providers:



## Extra Mile

### Install equipment that produces efficient packaging in-house

- ▶ Consider localizing your packaging production by using an in-house machine. For example, this [machine by Valtin](#) is designed for e-commerce companies to produce a wide variety of tailor-made cardboard packaging types on site. In doing this, the machine ultimately contributes to the reduction of your B2C emissions, by way of scanning your products' dimensions to produce the most resource efficient packaging.

### Optimize bulk shipment packaging

- ▶ Discuss with your suppliers different options for the packaging they use to ship to your warehouse - do not only cut excess waste downstream but also upstream. Consider returning bulk packaging back to your suppliers, thus re-using it several times.

### Make product packaging more compact and recyclable

- ▶ As said in [Wrap.org](#) "*The primary role of packaging is to protect the product and help eliminate product waste. This is paramount since the carbon impact of the product generally far outweighs that of the packaging*". However, it is also possible to reduce the footprint of the packaging itself by making sure it has been designed with its recycling potential in mind.





Here are some ideas to make your packaging easy to recycle:

**Make the different materials of your packaging easy to separate -**

Avoid foil barriers, aluminum closure, and water-resistant lids. Example: Alpro's 500g pots are made in recyclable plastic with paper wrap. Paper and plastic are made to be easy to separate so that the materials can be divided in the respective bins.

**Reduce the number of chemicals and additives to keep the material**

**"pure"** - Example: Mammut re-designed their poly-bag packaging to ensure 100% recyclability at its end-of-life. This was done by eliminating adhesives and by using as little ink as possible on paper/cardboard packaging.

**Make the different materials of your packaging easy to separate -**

Avoid foil barriers, aluminum closure, and water-resistant lids. Example: Alpro's 500g pots are made in recyclable plastic with paper wrap. Paper and plastic are made to be easy to separate so that the materials can be divided in the respective bins.



**Guide:** [Design tips for more recyclable paper packaging](#)



**Guide:** [Design tips for more recyclable plastic packaging](#)



### 3. Pilot reusable packaging

In packaging, one of the most impactful levers you have is to avoid single-use materials. This lowers your CO2 emissions on individual orders and overall waste.

One highly promising innovation in this regard is the implementation of reusable packaging - i.e., boxes, bags, or containers that survive more than two life cycles.

This solution is still in its early stages, so it will only have an impact if customers actually return it, meaning that it requires some marketing efforts from you to educate your customers on how to use it. Although the initial cost is higher, this switch can save you money over time. Moreover, some shops share this cost with their customers by asking for a fee or deposit for each parcel.



## Impact

**Direct emission saving.** Your emission saving potential solely depends on the number of times the packaging is used. For example, when using ReZip boxes, you can save up to 87% of emissions compared to conventional cardboard packaging only after 10 cycles.



Image 1. Emissions saved by Re-Zip Bag over time ([Source](#)).

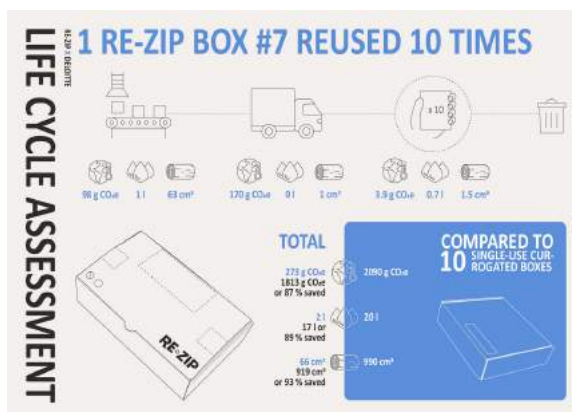


Image 2. Emissions saved by Re-Zip Box over time ([Source](#)).

**Shifting industry norms.** Reusable packaging is not the norm yet, so customers might need time and explanations to get used to it. The next goal is to trigger the domino effect: the more online shops in your area offer this option, the sooner customers consider it a new industry standard and start demanding it from the rest of the companies.



## Benefits

### Customers' preference.

A 2020 [Study](#) from Shorr Packaging found that two-thirds of shoppers are paying more attention to packaging now than before the pandemic. 58% of respondents reported being "likely" or "very likely" to select products that use recyclable or reusable packaging. Additionally, in a [survey](#) from Buying Green, 83% of younger consumers (under 44) affirmed they are willing to pay more for reusable packaging options.



## **Innovative brand image.**

While it is still not common to offer this option, you can be the first among your competitors, thus creating an image of being a forward-thinking company which is open to innovation and taking tangible actions to reduce emissions.

## **Lower climate anxiety.**

Knowing that the packaging of their order will be re-used can help the most environmentally responsible customers to decrease consumer guilt. Climate anxiety was first defined in the US, where in a 2018 survey 51% of the population declared feeling "helpless" when thinking about climate change. Similar results are seen in Europe.

## **Lower packaging costs.**

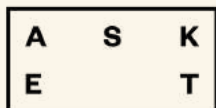
According to the research of the GWP group, the investment in reusable packaging pays off quickly: it costs 40-70% less to run a cycle with reusable alternatives over conventional packaging, with profit from the first year onwards.

## **Lower fees & taxes.**

Within Europe, there are several attempts to limit the use of disposable packaging, which means that tackling the issue in advance will likely save businesses from higher fees in the future. For example, in Germany, every distributor of products wrapped in disposable packaging has to pay a mandatory fee into the Dual System. Alternatively, joining RePack's Marketplace platform can exempt them from paying this fee.



## Examples



**Praxpack** is a “cooperation laboratory” that took place in 2020-2021 between the Otto Group, Tchibo, Avocadostore, and RePack, to test “[...] concrete solution elements for the setup of practicable and economically viable reusable packaging systems.” The trial has shown promising results: for example, 40% of customers of Avocado Store chose RePack compared to “conventional” packaging, accepting an additional fee of €3.95 per shipment.

**ASKET** a Swedish slow fashion brand, offers its customers the option to receive their purchase in a reusable sachet by RePack. This is a voluntary option that customers can choose for an additional fee of €3.

**Cdiscount** one of France's biggest e-commerce shops, has been testing living packets since 2019, offering their boxes as a voluntary option at the price of €2, leaving the option to pay for it to the customer or to the vendor.



## Implementation

### Estimate your current packaging footprint

- ▶ Get an overview of packaging currently in use and a measure the average carbon footprint of the current packaging used:
  - How many units of packaging materials do you purchase each year?
  - What materials (cardboard, plastics) do you use?
  - What are the average emissions caused throughout the production process?
  - What is the resulting footprint of end-of-life processes (emissions caused by incineration, decomposition in a landfill, and recycling)?
- ▶ After gathering this information, use a specialized footprint calculator, e.g. [eQopack](#).



## Build a case for the environmental and business benefits of reusable packaging

1. Calculate your current packaging costs.
2. Evaluate which products from your assortment line can be shipped in returnable packaging: consider material, security, durability, and price.
3. Evaluate financial costs of your packaging waste streams, some of the reference data you can find in [this report](#) by WRAP
4. Based on your packaging footprint, build up scenarios and estimate emission and costs reduction for scenarios when one packaging unit can be used again more than 5 times.

## Choose a reusable packing provider

- There are many packaging options on the market right now - below you can find an overview of just a few of them operating in Europe.

Name	Details	Products	Industry	Example
<b><u>Pack-it Eco</u></b>	Sustainable and/or reusable alternatives	Wide range of options	Any, including fragile items	
<b><u>Memobox</u></b>	Boxes made from recycled plastic waste.	Reusable boxes	Any, including fragile items	
<b><u>Living Packets</u></b>	Self-locking systems, and digital address display allows remote control and security.	Reusable boxes	Any, including fragile items	
<b><u>Packoorang</u></b>	Recycled packaging delivered carbon free. Customers can return it to collection points	Reusable bags	Any, including fragile items	
<b><u>Crafting future</u></b>	Reusable products for the catering industry	Take-away food packaging	Food	



## Plan a take-back and cleaning procedure

- ▶ Some providers offer a centralized cleaning service - in this case, your main effort is on the logistic side. If such service is not available, arrange a collection and cleaning station in one of your facilities
- ▶ Take into consideration that when returning packages you have the following options, depending on your product type ([Source](#)):

- **Refill at home** - the customer can buy the packaging once and get refills through a subscription service.
- **Return from home** - A pick-up service takes back the packaging directly from the customer's house
- **Refill on the go** - Users can get refills through dispensers or distribution points.
- **Return on the go** - Packaging can be returned to a drop-off collection point.

## Run live tests offering your customers the reusable packaging option at checkout

- ▶ You can offer customers a reusable packaging option for an additional fee, or you can cover its costs yourself.  
You can also decide to use this type of packaging only in certain locations or with select product types first.

## Extra Mile

### Explore the potential of reverse logistics

- ▶ The reusable packaging you offer doesn't have to be sent back empty - customers can use it within your closed-loop projects. For example, [Swedish Fall's](#) customers can use the cardboard boxes in which they receive their products to send back used clothing, which will be then recycled or re-sold. For further information on reverse logistics, check project #10.

### Use reusable packaging in click&collect stations

- ▶ Often customers choose "buy-online, pickup-in-store" options. If your e-commerce site offers such an option, you can consider integrating reusable packaging in this service. The store can then become a collection point for returned packaging.





## 4. Use behavioral design to lower return rates

Behavioral design for lower return rates incorporates three different dimensions of a company's operations: business goals, sustainability goals, and customer needs. It takes into account that sustainability and business are largely congruent when it comes to returns (apart from pure growth strategies) - claiming that the fewer, the better.

While you are likely already working on lowering return rates from a business perspective, the good news is that using behavioral design with a focus on environmental responsibility can help you to improve this metric even further. Based on the latest findings in behavioral sciences, frameworks can be applied to design effective triggers that reduce customers' intentions to make a return during or after the order process.



## Impact

Returns currently cost retailers €70 billion a year, with fashion retailers at 56% seeing the highest level of returned goods. The cost to the environment is even greater. Indeed, in the US only, returns create 5 billion pounds of landfill waste and produce 15 million tonnes of carbon emissions annually. This is equivalent to the amount of waste produced by 5 million people in a year. (Source)

An active returns management is still greatly underestimated as an influencing factor in sustainability efforts in e-commerce. Even if you only consider the individual motorized traffic to the return locations by consumers, approximately five hundred thousand tons of CO<sub>2</sub>-equivalents additionally arise per year in Germany alone (1). Here, you have to add further emissions related to re-integrating products into the distribution process such as packaging, overhauling, and destruction. Online retailing causes less CO<sub>2</sub> emissions compared to multi-channel shopping, but unfortunately, high return rates may change the adventurousness in favor of traditional shopping (2).



## Benefits

### Go beyond traditional measures.

First of all, everything has to be done to help customers to order the products which fulfill their demand and will not be returned nor disposed of later. That starts with giving users the best possible product information. Until now, retailers mostly apply traditional return reducing measures, i.e. making return processes more difficult and using financial incentives and penalties. But with these measures, the effectiveness falls short of expectations. The current high return rates (e.g. up to >50% in the fashion sector!) are unacceptable from an environmental point of view. Therefore, traditional measures need an extension from the discipline that currently understands human behavior best: behavioral science. Behavioral Design is considered the only way to meet sustainability objectives and to engage customers in responsible consumption while avoiding a competitive disadvantage. Current research shows that Behavioral Design can be a much more effective and customer-friendly approach than commandments or prohibitions.



## Invite customers to cooperate for climate action.

In reference to a 2019 survey from IPSOS, approximately 69% of global consumers have changed the products and services they purchase and use due to concern about climate change. ([Source](#)) By referring to environmental sustainability in your communications, you respond to the existing demand. Contemporary customers appreciate it when you give them an opportunity to make more sustainable choices.

## Shift industry standards.

By using behavioral triggers and nudges listed below, you educate customers and influence their consumer habits in general. Many online retailers offer free returns. As a result, customers often order more than they are planning to keep. [Research by Barclaycard](#) found that 30% of shoppers purposely over-order and then return unwanted items. So, if retailers removed free returns, customers might think twice before ordering additional products. ([Source](#))



## Examples

**patagonia**

[Patagonia](#)'s Black Friday campaign "[Don't Buy This Jacket](#)" was developed in partnership with the Common Threads Initiative. This eye-catching ad aimed to address the issue of consumerism and make publicly aware that businesses need to produce fewer things, but in high quality. Similarly, Patagonia's use of the line "Don't Buy This Shirt" in a catalog essay was meant to prompt as many people as possible to read the full ad and then nudge them to go to the Patagonia website to take the Common Threads Initiative pledge.

**A leading European fashion retailer** tested the impact of an additional question in the order confirmation which triggered people's intuitive tendency to behave consistently: "Will you help us to avoid returns?" Hundreds of unnecessary returns were prevented in this way (in the short test period alone).



## BESTELLBESTÄTIGUNG

**BESTELL-NR. 8351538972**

Hallo

Vielen Dank für Ihre Bestellung und das damit verbundene Vertrauen! Ihre Bestellung ist soeben bei uns eingegangen. Wir bedanken uns bei Ihnen und wünschen Ihnen viel Freude mit den bestellten Artikeln. Sie können Ihre Bestellung mit der Nr. 8351538972 in Ihrem Konto unter Bestellhistorie einsehen.

In Kürze bestätigen wir Ihren Auftrag mit einer E-Mail, die noch einmal alle Daten zu den bestellten Artikeln, Liefer- und Rechnungsanschrift enthält.

Sollten Sie noch Fragen zu Ihrem Auftrag, Lieferung o.ä. haben, erreichen Sie unser Beratungsteam von Mo - Sa 08:00 bis 20:00 Uhr unter 0800-XXXX-XXXX.

Schauen Sie doch bald wieder vorbei!

[MEINE BESTELNHISTORIE ANSEHEN](#)

**Bitte beantworte uns noch eine Frage:**

Weniger Retouren sind nicht nur gut für die Umwelt, sondern ermöglichen unserem Service für dich weiter zu verbessern.

Mit einem bewussten Bestellverhalten kannst du uns dabei unterstützen.

Ja, ich versuche bei der Vermeidung von Retouren –so gut es geht– zu unterstützen.

1

2

3

4

5

Stimme nicht zu

Stimme voll zu

[Absenden](#)

**SO GEHT'S WEITER**

1. Sie erhalten eine E-Mail Auftragsbestätigung
2. Ihre Bestellung wird bearbeitet und verpackt
3. Ihre Lieferung wird Ihrem gewählten Zusteller übergeben
4. Das Paket wird zugestellt

[ZURÜCK ZUM SHOP](#)

„Yes, I support the avoidance of returns“

**Return rate: -9,6%**

Image 1: Influencing return intentions in the order confirmation email (experiment with >10.000 transactions; source: Behamics, 2020)



## Implementation

### Define goals

- ▶ Define individual ambitious goals to reduce return rates. Be customer-centric for responsible consumers and increase barriers for eco-unfriendly behavior.

### Detect allies

- ▶ Find a group of likewise companies to ideate and benchmark your return reducing activities.

### Apply Behavioral Design strategies

- ▶ Apply a Behavioral Design framework (e.g. Fogg Behavior Model ([Source](#)) or PsyConversion® ([Source](#))) to create effective return-reducing triggers that are suitable for your business and your customers. Some examples include:

**EGO Trigger:** Display in the shopping cart how much co2 emissions a user would save by avoiding a return

**SOCIAL Trigger:** Communicate how many other customers (i.e. the exact percentage) refrain from ordering different sizes, e.g. when detected that customers are about to buy shoes in sizes 39 and 40.



**PERCEPTION Trigger:** Bring transparency to the emissions directly linked to the return that a customer is preparing. Show individual return behavior in the customer's dashboard and announce at what point you may be forced to take action, such as charging a handling fee for additional returns from that customer. This kind of threat-related trigger highly increases awareness. Communicate in detail how much carbon is generated by each return and explain your sustainability efforts to reduce carbon emissions before a return occurs. Finally, ask for a responsible order (behavior pattern: reciprocity).

**COGNITION Trigger:** Use mental shortcuts to bring the ecological consequences of a return into the customers' perceived reality (e.g. equivalent to leaving the light in your living room on for 6 months).

**CONSISTENCY Trigger:** Present your company's and eventually the product's advantages on information brochures in parcels. Users tend to behave in a consistent manner when being reminded of their initial decision and the former reasons to buy.

## Inform your customers

- ▶ Educate your customers by explaining the implications of opportunistic and careless consumption; show examples of a responsible product choice and consultation of your customer support in order to reduce returns.

## 🕒 Extra Mile

### Educate your customers about the impact of returns

- ▶ Develop campaigns for consumers on the importance of conscious purchase behavior ([Source](#))

### Support research

- ▶ Cooperate with other organizations (e.g., universities, market researchers, consulting companies, and Leaders for Climate Actions) to identify the actual effective levers for reducing the volume of returns and publish the results.



## **5. Minimize carbon footprint of your entire shipping**

In this project, we suggest you to map and analyze your logistic processes, estimate their carbon footprint, define the highest emission contributors, and set up projects aimed at reducing emissions. Below you can find several ideas and tools that might be helpful. Consider taking a holistic approach to this project and implementing several of the suggested improvements at the same time. Please note that Last-Mile Delivery optimization is covered in a separate project.

For example, you can opt for slow delivery, highlight products from local warehouses close to your customer, use green energy/fuel, etc. Such steps will only help you to significantly reduce carbon emissions across all steps of your shipment process collectively.



## Impact

**Direct emission reduction.** The transport and logistics sector contributes around 24% of global CO<sub>2</sub> emissions. (Source) In general, for e-commerce companies, transport-level emissions can be responsible for upwards of 13% of their corporate carbon footprint. This is why this project's suggestions can help you to have a significant reduction in carbon footprint.

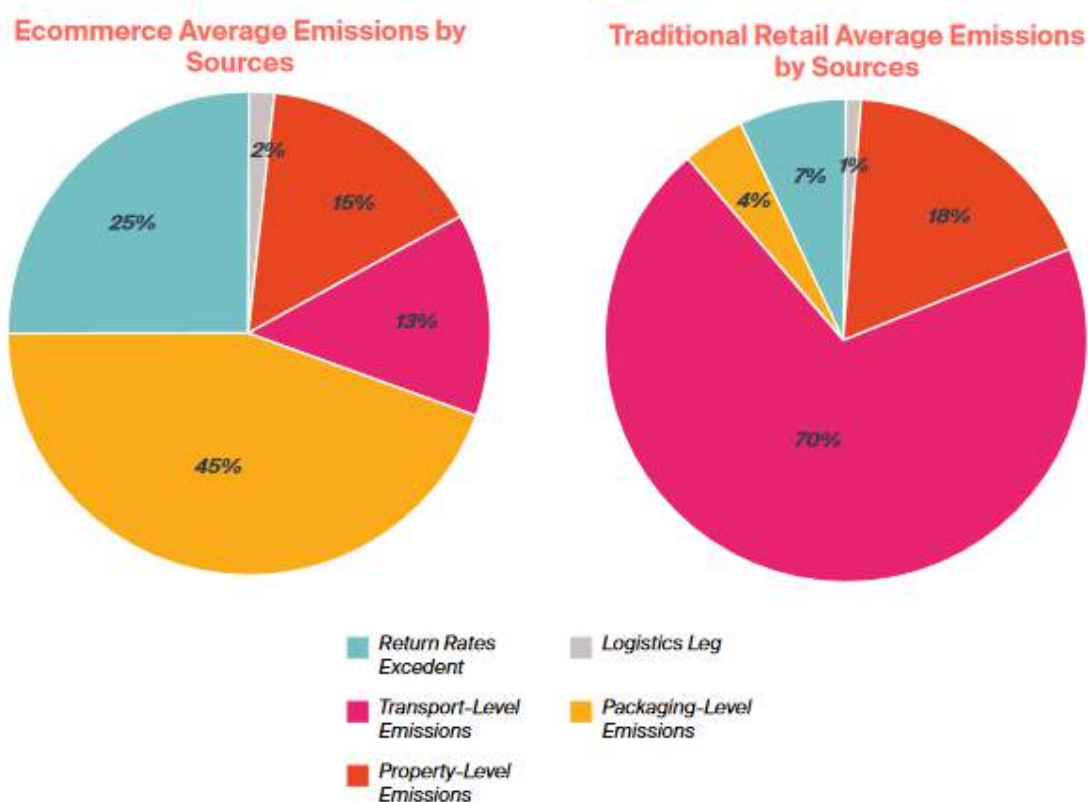


Image 1. Average footprint breakdown for e-commerce and traditional retail company ([Source](#)).

**Support developing technologies that can change the picture.** As logistic streams are powered by fuels and electricity, the key to footprint reduction is choosing the right sources of it.

It is important to take into account Well-to-wheel (WTW) emissions, which include all emissions related to fuel production, processing, distribution, and use. It is not representative enough to calculate just Tank-to-wheel emissions, which include combustion only. With WTW compared, the environmental benefits of using renewable energy become even more vivid.





The image below shows the emission reduction potentials of alternative technologies and fuels.

©forto

**Emission reduction technology under development - demand signaling & collaboration needed to decrease lead time of 5+ years**

New Technologies/ Fuels	CO <sub>2</sub> Reduction	Challenges
<b>Sea Freight</b> LNG (Liquified Natural Gas) Biofuels Alternative Fuels (Hydrogen, Ammonia, Methanol)	15-25% 75-85% Zero emission	Infrastructure redesign Sustainable sourcing of biofuels (second generation) Infrastructure and engine redesign
<b>Air Freight</b> SAF (Sustainable Aviation Fuels) Hydrogen Electrofuels	75-80% 70-90% up to 100%	Availability of SAF, sourcing & supply infrastructure Availability of green hydrogen High energy needs (renewable sources)
<b>Rail Freight</b> Electrified Rail HEMU (hydrogen electric) Biofuels / Synthetic fuels	Zero emission Zero emission up to 100%	Energy & infrastructure needs Availability of green hydrogen & supply infrastructure Expensive, availability & supply infrastructure
<b>Truck</b> Electric Vehicles Hydrogen Biofuels / Synthetic fuels	Zero emission Zero emission up to 90%	Energy & infrastructure needs, distance restrictions Availability of green hydrogen & supply infrastructure Expensive, availability & distance restrictions

Source: Georgetown University X Forto Research Project 2021

Image 3. A comparison of alternative solutions in the logistic industry (Source: Georgetown University x Forto)

While the production of crops for biofuels is emission-intensive on its own, the overall impact of using biofuels shows a positive dynamic. For example, in 2018, Germany's increase in the use of biofuels by 6% (in comparison to 2017), avoided 9.5 million tonnes (approx. 84%) of CO<sub>2</sub> equivalent. ([Source](#)).

Additionally, it is possible to use second- or third-generation biofuels (biomass waste products e.g. waste vegetable oil, used frying oil) instead of first-generation biofuels that are competing with food crops that could be used for feeding humans.

## Benefits

### Resilient partnership.

Considering the long-term perspective, you have the opportunity to build a sustainable and climate change resilient partnership network by including the customer and your logistics providers. Scientific research shows that there is a huge potential for major logistic ecosystem players, such as sea lines, to become more sustainable, but they are too slow to change because they don't see enough signals from their customers.



## Reduced costs.

Slow sea freight costs are much lower than air freight. It requires longer term planning, but it is beneficial both for business and environment. Also, LCL shipments cost much less than shipping a half-empty container.



## Examples

**3M**

**3M** - a multinational conglomerate corporation that produces over 60,000 products under several brands - partnered with **MIXMOVE** to address the issue of their product shipments only being 35%-45% full. After partnering with MIXMOVE and implementing the personalized software to streamline their operations, delivery trucks in Europe were more efficiently filled (up to 70-90%), which led to a 35% reduction in transportation costs for 3M and reduced CO2 emissions by 50%.



**Mammut** - in coalition with **Ship it Zero – Shady Ships** - has set ambitious goals to achieve net-zero in their shipping vessels by 2030 (Source). The first step will be to opt for 'slow steaming' shipping vessels. Followed by other reduction measures, this should reduce their footprint considerably, and for the rest they plan to use carbon removal projects. (Source)

**H&M**

**H&M Group** - in partnership with **Maersk** - has developed an ECO Delivery initiative to reduce the company's carbon footprint in transportation. "The initiative uses sustainable biofuel to power selected Maersk-vessels and helps H&M to make progress towards its ambitious sustainability goals." (Source)



# Implementation

## Calculate your shipment carbon footprint

- ▶ Calculate the transportation emissions related to your imports, exports, dispatched parcels, etc. For this, you will need to request information and review your current logistics and courier providers, who can assist you to create transparency.

### Emissions vary depending on distances, transport modes and vessels

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Image 3. Emission variation for different modes of transport (Source: Forto research & internal data) Please note that this is a strong simplification to depict the differences.



**Tool:** EcoTransit - a solution to calculate emissions of global freight transports



**Tool:** Carbon Care - a global CO<sub>2</sub> calculator for transport and logistics



**Tool:** Carbon Calculator by DHL - to compare scenarios where different shipment legs are used.



**Service:** forto - offering individual emissions reports that are more detailed and accurate than high-level estimations.



## Survey your logistics providers & freight forwarders

- ▶ Get a better idea of your indirect emissions, and discover reduction potentials, by surveying your logistic partners.

Find out whether they offer any services of that kind:

- Compensation initiatives
- Use of biofuels
- Consolidation services
- Slow steaming shipping
- Coalition initiatives, etc.

## Opt for slow delivery (sea freight)

- ▶ When considering the importation of your products, opting for importing companies that prioritize slow shipping, is a crucial way to directly cut emissions.

For example, if a ship transporting goods reduces its' speed by 10%, the ship's emissions associated with that trip could be reduced by approximately 27% reduction. (Source)

Going a step further, at a 20% reduction, there is not only a reduction of emissions (including black carbon) by 24-34%, but it could cut underwater noise pollution by 66%, reduce the number of fatal whale strikes by 78%, decrease the number and seriousness of accidents, and save money in shipping costs altogether. (Source)

Consider implementing a "no air freight" policy for your goods.



## Address your Less than Container Load shipping (LCL)

- ▶ When planning low-volume shipments, opt for LCL options instead of half-empty containers. This does not only reduce emissions but saves money for all parties involved. For example, considering that transporting empty containers costs the shipping industry more than \$20bn a year, there is a large economic gain associated with this sustainable practice. ([Source](#)).

Several digital services work to make LCL shipments more efficient, examples include:



**Service:** [forto](#) is offering digital logistics technology and services that go beyond point-to-point transportation. Compensation through offsetting can be booked for all transport modes, while all sea LCL shipments are climate-neutral by default at no additional cost.



**Service:** [Flexport](#) connects all the parties in global trade through a single, secure cloud-based platform. They offer an alternative to LCL, called [Ocean Match](#), that helps you to match empty space in your containers with other companies.



**Service:** [Container Xchange](#) is a platform that makes it simple to lease, buy and sell containers.



**Service:** [Clean Cargo](#) - a b2b leadership initiative working toward the sustainable transportation of goods and promoting responsible shipping - offers data and tools, including the [Sustainable Freight Procurement Framework](#) to enable companies to effectively benchmark themselves against their peers and to evaluate their progress in supplier management, within the context of sustainability practices in logistics.





## Optimize truck loads

- ▶ The average truck in Europe is filled to only 52% capacity, leading to almost half of the capacity is carrying air (Source)

You can approach it from different angles:

1. Develop a sharing model and create partnerships for full deliveries (e.g. to avoid half-filled trucks you can combine your orders with other e-commerce shops) as for the example 3M did. (Source)
2. Use route optimisation solutions. Use AI systems for capacity forecasting, route planning and efficient shipping (Source)  
Some helpful software tools you can find below.
  - a. For example, 2006 UPS implemented its Route Optimization programme bringing to 1,100 fewer trucks per day on the road. The savings amounted to \$8 million in fuel procurement and a reduction of 32,000 tons of CO2 emissions year on year.
3. Reduce shipping weight by using lighter cardboard for your packages and consider alternative pallets. E.g. CONE PAL offers cardboard lightweight pallets that optimize space in shipping containers, reduce shipping weight, and requires less of returning logistics, as it's easier to recycle than conventional wooden alternative.

 **Tool:** MIXMOVE is a cloud based software that ensures maximum capacity utilization on all transportation modes through the use of innovative IT solutions.

 **Tool:** ShippyPro calculates all data related to the overall CO2 footprint of shipments and all of your carriers, which in turn supports your sustainability strategies.



## Extra Mile

### Capture 100% of your transportation-related emissions

- ▶ Etsy is a great example in that they have become the first global e-commerce company to offset 100% of their B2C carbon emissions. However, going above and beyond to offset the transportation emissions throughout the entirety of your supply chain is even a bolder move. This can act as a transition solution until your company has switched to sustainable means of transportation within the supply chain.

Going forward, base your decisions pertaining to your entire logistics and shipping systems around zero-emission transport options. (Source)



## 6. Innovate last mile delivery

In the product's journey from the production line to the customer, the last mile is typically one of the biggest contributors to the carbon footprint of your product's delivery.

Emissions are caused by making multiple deliveries for several items in a single order, missed deliveries, high amount of returns, and delivery vehicles - leaving plenty of room for improvement. You have the power to reduce the emissions created by the journey your products take from your fulfillment centers to your customers. Changes you can make include: having more local fulfillment centres; asking your courier partner for more bike deliveries; collaborating with innovative startups offering cargo bikes or pick-up stations, and encouraging in-store pick-up of orders, etc.





## Impact

**Ecosystem change.** The transportation of goods makes up a big part of e-commerce-related emissions. Hence, it is a vital pillar for decreasing the environmental impact of the whole ecosystem.

Companies have the power (and should therefore use it) to do their part in systemic change to encourage and facilitate governments' and customers' actions. You can choose your logistic partners which means that you can enter those partnerships that actively want to reduce their environmental impact. This allows you not only to reduce your own Scope 3 emissions, but to lower congestion and pollution in metropolitan regions.

### Driving the sustainable last mile

Real change toward a more sustainable last mile takes coordination and collaboration across the ecosystem.

Every player can start to make a difference with these priority actions.



Image 1. Role of different players in the ecosystem transformation ([Source](#))

**Reduction of emissions with successful deliveries.** Parcels in Germany on average amount to 0.28 - 0.5 kg CO<sub>2</sub>, with the variation depending on the size of the parcel but also the number of delivery attempts. According to the [BVL](#) and [Packadoo](#), the emission rates stay around 0.27 kg CO<sub>2</sub> only if the first delivery attempt is successful.

Furthermore, a recent analysis on the impact of using local fulfilment centers in Chicago, London, and Sydney for e-commerce, highlighted that last-mile emissions could be reduced by 17 to 26% by 2025. ([Source](#))



## Benefits

### Reduced costs.

According to research by Accenture, "the last-mile for e-commerce companies accounts for 50% of the total cost, and 80% of that expense is labor. Opting for fulfillment centers can offer a cheaper alternative because it eliminates several steps in the shipping process and can take advantage of higher route densities". (Source)

### Improved operational efficiency.

The city of Bogota offers a great example of the benefit of addressing this through an increase in the use of cargo bikes. "Preliminary results have already shown that by using a collaborative cross-docking platform (involving public-private partnership), up to 4.2 tons of emissions could be avoided in the city per year from food and parcel deliveries using cargo e-bikes. The results also show that delivery vehicle drivers work 2 hours less while on average 15% more deliveries are made, due to the improved journey time, reliability, and operational efficiency." (Source)

### Meet responsible customers' expectations.

According to a survey by the MIT Sustainable Logistics Initiative, 70% of the consumers they asked were willing to delay home deliveries by about 5 days if given an environmental incentive to do so at the time of purchase. (Source)



## Examples



**Bol.com** the largest online store in the Netherlands, has introduced electric delivery bikes in Amsterdam, where customers in the city have the option to pay for the “Today bicycle service” and receive their products the same day within 2 hours. Additionally, 24% of their parcels are delivered by bicycle or on foot in residential areas.



**Zalando** has rolled out pilot projects with regional carriers that use cargo bikes and electric vehicles to reduce last-mile emissions associated with transportation.



**Tropo Motors'** partnership trials show electronic vehicles guarantee an emission-free last mile. As of September 2020, the two vehicles have completed over 15,000 km, equaling 90 round trips of conventional diesel vehicles. With 2,000 successfully delivered packages, more than 3t of CO<sub>2</sub>e were avoided this way.



**Amazon** In the US, Prime Members can lower the emissions of their shipping by choosing to get all of their Amazon deliveries on a specific day (Amazon Day). Non-Prime members can choose a similar option, clicking on “fewest possible packages” when ordering more than one item. “Vehicles are least efficient when stopped, so by consolidating to a single order day, they are theoretically eliminating multiple other stops at their address that week.”



## Implementation

### Highlight products that can be delivered locally

- ▶ Get an overview of products that are sourced/produced locally and have a less than average impact.
- ▶ On the product pages, highlight items that can be delivered locally and are available in the fulfillment center nearest to the customer.

### Suggest a "slow delivery" option at checkout

- ▶ According to the [Sustainable Logistics Initiative](#), "research shows that consumers' behavior can be influenced by providing information about the environmental footprint of the shipping option they select for their home delivery.
- ▶ The field study shows that 30% of consumers who are not willing to wait when given economic incentives are willing to wait longer for home deliveries when given environmental incentives."
- ▶ This initiative has developed a framework to address it - [The Green Button Project](#). Suggested actions are:

- Highlight products from local warehouses close to your customer
- Add a small fee for faster shipping, while offering slower shipping for free. ([Source](#))
- Raise customer awareness about the environmental impact of quick deliveries by distributing videos like this one from [Vox](#).
- Implement a system for direct customer communications and real-time tracking to ensure parcels are delivered on the first try
- After exhausting all available reduction options, you can offer climate-neutral shipping through your logistics partners. DHL, DPD, Hermes, and most of the common logistics providers offer climate-neutral shipping for a surcharge.



## Choose a pioneering last-mile startup to cooperate with

- Get in touch with pioneering last-mile startups who can help you figure out how to make use of their services. Some examples of companies doing this:

- Deutsche Post and StreetScooter have partnered to tackle the emissions associated with last-mile transportation.
- Volta Trucks developed "Volta Zero": the world's first electric commercial vehicle adapted for city center freight distribution.
- Ono Motion's ONO E-Cargo Bike can replace sprinters, cargo vans, and transporters on the last mile delivery, trailblazing emission-free transportation and already doing so for companies like Hermes, DPD, Tier, and Mailboxes Inc.

## Demand innovations from your courier service

- Explore what sustainable last-mile options your current provider offers, then run research among their competitors. Ask your partners if they plan to implement some last-mile innovations in the nearest time. If there is not a positive dynamic, consider switching to another provider. For example:

- DHL offers their business customers the opportunity to develop innovative industry-tailored solutions and put innovation into practice, together with DHL logistics experts.
- DPD deployed over 2,000 low emission vehicles in European cities, as well as their air quality monitoring program in 5 additional cities.
- FedEx has a quickly growing fleet of hybrid and all-electric trucks, and it piloting their EarthSmart to change the logistics industry standards.
- UPS has begun purchasing fleets that use alternative fuels, uses technology to find the most optimized route.
- Hermes offers "WE DO! Carbon-neutral deliveries" and is testing e-scooters and cargo bike deliveries.



## Build local micro-fulfilment centers

- ▶ The key to developing a sustainable last mile in your company's supply chain lies in the creation of local fulfilment centers, more specifically those that are placed closer to the urban consumer, as opposed to the large-scale distribution centers that are frequently located outside major cities. An example of this is 'micro-fulfillment center' (MFC) which are small operations close to e-commerce consumers usually located in spare space of retail stores.
- ▶ These local logistics networks have grown in popularity due to COVID, and as a means of a more local and efficient B2C delivery. "These close-to-consumer urban fulfillment centers have the potential to save approximately 50% of emissions due to transportation and reduce the overall footprint per package by an average of 10%."(Source). Examples of companies who use MFCs are:
  - Levi's has used the Corona Crisis as an opportunity to restructure its operations. The company has begun to push toward D2C through the use of micro-fulfilment centers and AI. Relying on its network of branded stores Levi's is able to enhance the e-commerce experience through, quick (shorter distance) deliveries and more sustainable means of transportation. In the month of May Levi's in the U.S. had already begun shipping 30% of their e-commerce purchases from the stores. Furthermore, Levi's is also offering curbside pickup from about 80% of its stores, while 'buy online, pick up in-store' is live at around 40 stores. The brand is even using Uber to facilitate same-day delivery in the U.S.
  - Gorillas, the Berlin-based delivery startup has a network of 40 MFCs across Germany, the UK, and the Netherlands, which allows consumers to receive deliveries within 10 minutes of placing an order.
  - Ahold Delhaize, a dutch retail company, is building an MFC that will fulfil 15,000 orders per week in Philadelphia. To scale the amount of MFCs, Swisslog has partnered with HEB. They have completed over 2,000 installations globally already, among others, their technology is used by Ahold Delhaize.
- ▶ Expand parcel shops and packing stations' networks. According to a survey by PwC on logistics of e-commerce purchases, 57% of participants support standard delivery to a parcel shop or secure locker. Having one consolidated destination allows not only for smarter routing but also failure-free delivery.



## Choose sustainable fuels for your own deliveries

- ▶ When using road transport, switch to more sustainable fuels - optimizing the route is not enough, you also need to take into account the impact of the type of fuel you are using. For example, "Diesel, which is more fuel-efficient than gasoline, produces four times more nitrogen dioxide pollution and 22 times more particulates than petrol" ([Source](#))
- ▶ Enforce the use of green energy in your sphere of control. While it is difficult throughout your supply chain to demand from external companies to use green energy/fuel sources, you do have the opportunity to set company goals for your last-mile. For example, by 2025, IKEA aims for 100% home deliveries by electric vehicles or other zero-emission solutions. ([Source](#))



## Extra Mile

### Cooperate with the public sector

- ▶ Cooperate with the city and national governments and planners to ensure a large-scale and holistic approach to systemic change. Together, you can enable a circular economy and the development of greener route management practices. Some examples of this could include:
  - Rethink your company's overall asset use by repurposing, altering, and sharing assets like stores, infrastructure, and fleets ([Source](#))
  - Invest in green technology and evolve regulations to support these innovative approaches. ([Source](#))





## Connect parcel delivery and waste collection

- ▶ Connect formerly separated processing steps such as parcel delivery and waste collection. One example is the collaboration of Bring Express, a delivery service, and Ragn-Sells AB, a waste collection company.
- ▶ Under the umbrella of the Stockholm city initiative, Älskade stad, the companies developed a pilot program to deliver parcels and pick up waste on the same route. For this, they introduced a new fleet of electric trucks and an urban consolidation hub to store packages and waste during the day. This enables a smarter and more effective way of using resources and leaves both journeys, in and out of the city, with full truckloads. The initiative allows for emission reductions of around 73% CO<sub>2</sub>e/kg.

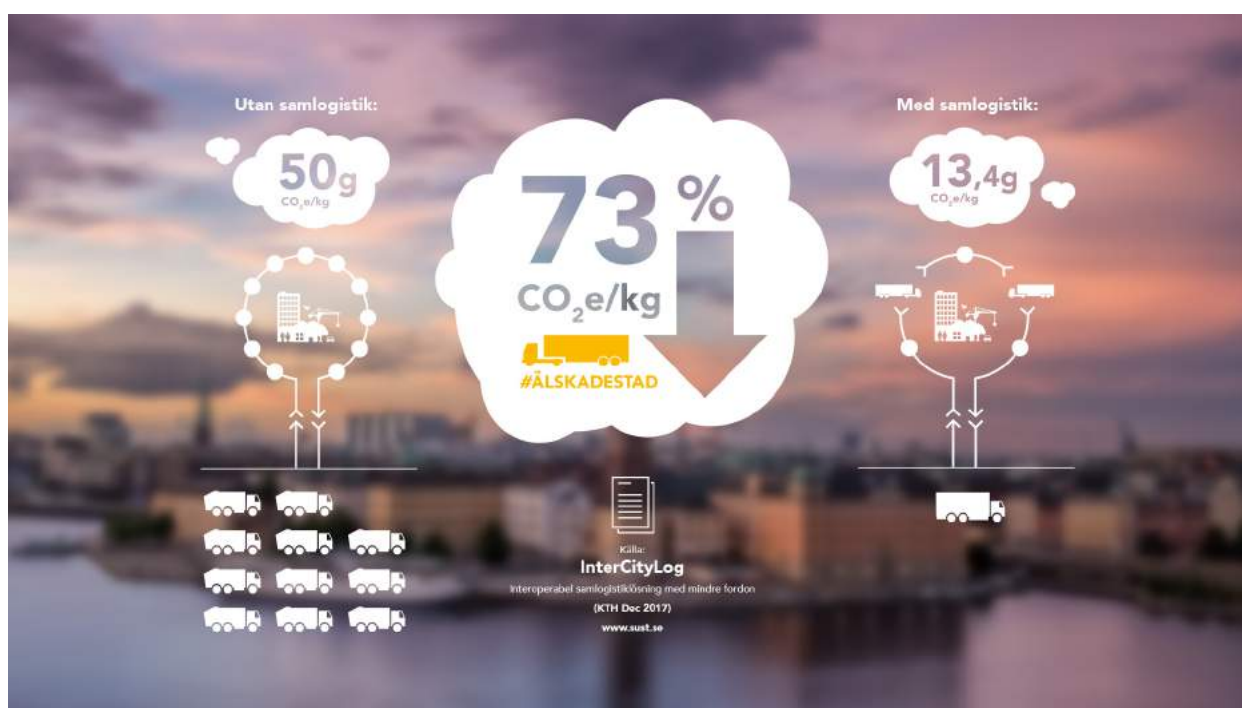


Image 2. Emission reduction potentials of the Älskade stad initiative ([Source](#))





## 7. Track sustainability status of your supply chain

Engaging your suppliers in climate action will help you greatly in tackling your Scope 3 footprint. To understand what the sustainability status of your supply chain is, survey your suppliers and track this information on a regular basis. This will allow you not only to gather essential information, but also signal to your suppliers what your priorities are. Such signals can assist in accelerating the implementation of positive changes. On top of this, when you have set reduction targets for yourself, you can encourage partners to set their own climate targets. Consider establishing minimum requirements - and deadlines to reach them - as must-haves in your supply chain.

To go even further and reach a new level of transparency in your own supply chain, you can implement a sustainable tracking system that allows you to track data in almost real-time — all the way from raw materials to your customers, and back.



## Impact

**Pre-assessment.** Supply chain emissions are usually 4 times higher than direct operational emissions. An unsustainable supply chain accounts for 90 percent of the impact on air, land, water, biodiversity, and geological resources. It is necessary to measure full Scope 3 emissions, but this process takes time and resources, while this survey can become the first low-cost step on that route. ([Source](#))

**Raise awareness.** "Many suppliers still lack awareness of the risks and opportunities that climate and water issues pose to their businesses and customers. According to a [CDP report](#) from 2017, only 22% of the interviewed companies were engaging with their own suppliers to reduce carbon emissions, with just 4% having put supply chain carbon emissions targets in place." - as highlighted in Carbon Trust's [How To Be a Good Supplier guide](#).

**Trigger action.** Research shows that, when companies are not under significant pressure from any particular stakeholder, they do not take action to manage, mitigate, or adapt to climate change. But among companies that feel pressurized by three or more stakeholders, 97% do take action. ([Source](#))

**Technology as an enabler of change.** On the graph below, you can see an extensive overview of sustainability improvement opportunities provided by innovative technologies. However, according to [Accenture's](#) report on the fashion industry: "technology alone cannot solve key issues of sustainability and transparency. It may mitigate some pitfalls across the full lifecycle of a garment, but to forge genuine, systemic change, a broader program of pre-competitive collaboration is required, where different parties agree on transformation — and technology serves just as an enabler."



## Technology opportunities across the apparel value chain

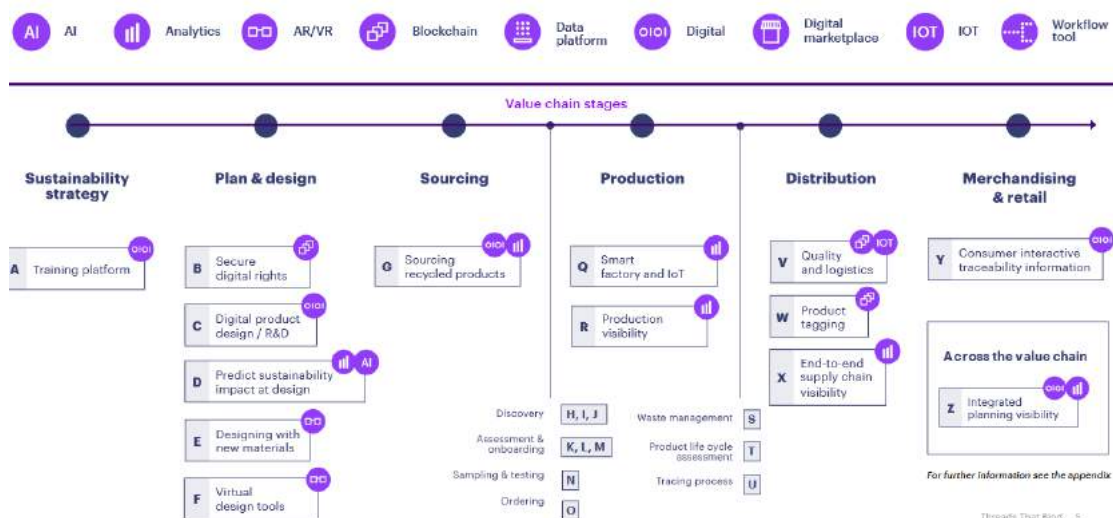


Image 1. An overview of sustainability improvement opportunities provided by innovative technologies (Source)



## Benefits

### Avoided financial risks.

Optimized supply chains bring substantial savings: in 2017, CDP ran a survey among suppliers that had implemented environmental measures. Suppliers disclosed reductions equivalent to 434 million tonnes of CO<sub>2</sub>, an amount greater than the annual emissions of France. This resulted in US\$12.4 billion in savings. According to suppliers' reports, climate change risks could have a financial impact of US\$906 billion.

### Detailed CSR reports.

Running such a survey will give you more detailed information for your sustainability reporting, even if you have not measured your Scope 3 footprint yet.



## Reduced costs.

According to a recent survey by HSBC, a third of global businesses are looking to improve the sustainability of their supply chains over the next three years. The survey of 8,500 companies in 34 countries, published in HSBC's Global Report, shows that those businesses making environmentally sustainable changes to their supply chains are motivated primarily by cost efficiencies and improved revenues. (Source)(Source)

## Act ahead of the curve.

"According to the CDP's 2019 supply chain report, 35% of the program members engaged with their suppliers on climate change in 2018, up from 23% the year before." - Harvard Business Review states.



## Examples

M&S  
EST. 1884

**M&S.** has developed a supplier scoring system that is aligned with its Plan A strategy and objectives. Based on their performance in defined criteria, suppliers are rated as Gold, Silver, or Bronze. M&S has used this framework to incentivize energy and environmental improvement among suppliers. For example, the company set itself the target to source a quarter of its food products from suppliers that have achieved at least 20% improvement in energy efficiency.

**Philips.** has recently created the Supplier Sustainability Program, through which every year more than 200 suppliers are evaluated.



**PHILIPS**



Suppliers are divided into 4 categories - Best in Class, Supplier Sustainability Improvement Programme, Do It Yourself, and Potential Zero Tolerance. In 2020, 92% of suppliers participated in this program (a 22% increase from 2019). From this group, 61% are engaged in emission reduction initiatives, and 43% have set science-based targets. Philips measure and monitor the impact of the SSP engagement through a year-on-year improvement rate.

**Patagonia** has put in place a whole Supply Chain Environmental responsibility program that they use to make sure their suppliers meet the company's requirements. This program uses industry-wide tools, such as the Higg Index, and allows suppliers to also prove their commitment through recognition of third-party certification programs (such as the bluesign® system). Additionally, they pre-screen farms, factories, and mills they work with via what they call the "4 fold approach", through which "every new and existing supplier must meet their standards and requirements for business, quality, environmental, and social standards". A full overview of the facilities working with them can be found here.




## Implementation

### Pre-screening: define your fields of action







- ▶ Start with a self-assessment of your strategy and internal processes.



**Self-assessment tool:** GAIA Model - Developed by LMI, the not-for-profit logistics and analytics experts, the GAIA tool will help you focus your sustainability efforts based on six fundamental components of sustainable supply chain management: Strategy & Vision / Workforce & Skills / Management Systems / Information and Communications / Organization & Culture / Process & Policy.

- 
- ▶ To define the set of questions your suppliers should answer, make sure you cover several aspects of sustainable public procurement. A useful tool to define them is provided by the German Ministry of Environment. You can also get some inspiration from the sample questionnaires below.

### Sample questionnaires for suppliers:

-  [Questionnaire from Ceres](#), including also environmental impact indicators other than carbon footprint and also social conditions-related questions.
-  [Questionnaire from UNDP](#) on environmental impact indicators, including product assessment.
-  [Questionnaire from WWF](#) specifically focused on Scope calculation and carbon footprint
-  Self-assessment [tool](#) from the Accountability Framework
-  Guidelines to share with contractors: "[How to be a good supplier](#)"
-  Services to implement a sustainable supply chain: [SupplyShift](#)

## Examine Suppliers' Sustainability Management

- ▶ Examples of questions:
  - Does your supplier already have mechanisms in place for efficient environmental management?
  - Do they have an FTE sustainability manager?
  - Do they publish CSRs or sustainability reports?
  - Do they have their own carbon footprint measurements in place?

## Examine Suppliers' Certificates and Standards

- ▶ Ask if the company holds a certificate issued by an environmental management system-approved certification body (e.g. ISO 14001:2004 or an equivalent standard). The most common EMS standards are ISO and EMAS.



- ▶ Additionally, ask if the company holds any business certifications like Bcorp or product certifications like Cradle to Cradle (C2C).
  - Are some of their products certified with relevant sustainability labels?
  - Do they have a policy in place regarding raw materials used to manufacture their products?

## Examine Suppliers' Waste Management

- ▶ Examples of questions:
  - Do your suppliers have a method to deal with waste produced throughout their supply chain?
  - How do they deal with Hazardous Waste?
  - Do they have a circularity programme in place to close the loop?

## Examine Suppliers' Forestry, Energy, and Water usage


- ▶ Develop standards for your company's supply chain also regarding other climate-related topics, such as plastic offsetting, waste, water, chemical use, etc.

Examples of questions:

- Do your suppliers use renewable energy?
- Can they provide you a report on their Energy, Forestry, and Water consumption?
- Do they have measures in place for sustainable water/land management?

## Examine Suppliers' Delivery and Packaging

- ▶ Examples of questions:
  - Where are their products produced?
  - Do they have a system in place to avoid empty trucks?
  - What materials do they use for their packaging?

- 
- Are their packages optimized to avoid occupying more space than necessary?
  - Do they have measures implemented to avoid excessive waste in packaging?

## Examine Suppliers' Capacity building and sub-suppliers

- ▶ Examples of questions:
  - Are they mapping their own suppliers' environmental performance?
  - Can they provide you with a full list of their sub-suppliers?
  - Are they running capacity-building programs within the company? If not, would they be interested in one run by you with other suppliers? On which topic?

## Track sustainability data in your Supply Chain Management system

- ▶ Develop end-to-end transparency and traceability throughout your entire supply chain by mapping the existing supply network and optimizing the workflow using sustainability tracking metrics.
- ▶ For example, "**Philips** uses Ecochain annually to help them in their journey to reach their 2025 climate targets. They use EP&L methodology: Environmental Profit & Loss account is a method for placing a monetary valuation on a company's environmental impacts. Including the impact derived from its business operations and its value chain, from cradle-to-grave.
- ▶ As a result, Philips' total environmental impact of 2020 accounted for €4.91 billion – a significant 28% improvement compared to 2019's €6.8 billion. A mere €135 million (3%) of their environmental impact, was directly caused by Philips' own operations – mainly driven by their outbound logistics. However, this is a staggering 12% reduction compared to €154 million in 2019. Overall, Ecochain allowed Philips to identify its biggest environmental hotspots which guide their future investments and decisions." (Source)





- ▶ **Buffy** - a sustainable home goods brand - uses Ecochain as a solution to acquiring data throughout their supply chain without requiring an entirely separate team in-house to manage the process. In an attempt to measure their environmental impact and uphold the same standards that they bring to every other dimension of their business, Buffy managed to design their cloudy comforter's to have a 9% lower carbon footprint than that of a conventional comforter. (Source).



**Tool:** Greenstone's Environment module - a sustainability and environmental reporting software solution that enables businesses to measure, understand and communicate their global environmental performance and impact. (CDP approved and highly rated)

## Set goals and a deadline

- ▶ Set a moment in time when some of the criteria from the survey become a must-have. It should be far enough so that suppliers had time to adapt and implement changes, but not too far so that it was still possible to meet the Paris Agreement.

## Assess new suppliers

- ▶ Create a similar questionnaire for new suppliers and run a sustainability assessment before deciding if you should start working with them.



## Extra Mile

### Audit your main factories

- ▶ For your biggest suppliers, you can run an audit, including a physical visit and detailed examination of facilities, instead of a remote survey.

For example, on the Marubeni website, you can find public reports of such audits.

### Increase your sphere of influence

- ▶ Ask your suppliers to map and implement sustainability standards with their sub-Tier suppliers.

### Embrace full transparency

- ▶ SupplyChain Digital suggests: "Develop a QR code or passport for your products that allow the customer to track the product's supply chain. For example, a fashion brand Sheep Inc. - partnered with EON to leverage a bio-based NFC tag that provides each customer with a unique ID to trace and discover their product's supply chain journey, including the product's carbon footprint at each stage from raw materials to manufacturing, distribution, and approximate usage".

- ▶ Another example: Patagonia is communicating on every product page where this item was produced and on which factory.

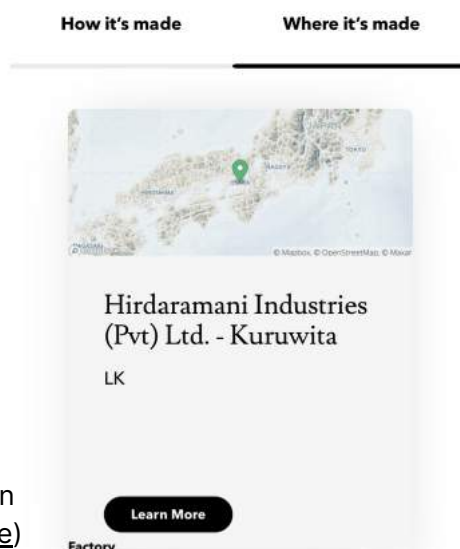


Image 2. Example of product page on the Patagonia website ([Source](#))



## Offer training programs for your employees

- ▶ As Supply Chain Solution Center suggests, this should become an important part of your sustainability management strategy.

"Schedule mandatory training for all employees appropriate for their roles and responsibilities. Encourage additional training to keep up with cutting-edge sustainable supply chain practices. Encourage your employees to excel in sustainable supply chain management by offering financial incentives and formal recognition for success on sustainable supply chain initiatives. You can also incorporate sustainable supply chain initiatives into employee evaluation criteria." (Source)



## 8. Highlight sustainability labels on your product pages

Help customers to make the right choice: add easily accessible information about sustainability certifications or environmental information on your product pages. Such pages replace the physical packaging in a store, so they should allow immediate comparison with non-financial characteristics - like certified protected areas or use of sustainable resources.

**If you produce some products yourself**, consider receiving certifications most relevant for your products' impact areas. This requires time and resources but is worth the effort since consumers are demanding transparency and responsibility more and more - and this trend will only grow.

**If you do not manufacture products yourself**, just asking your suppliers about certifications can signal to them what your priorities are. The more signals like this they receive, the faster they might implement positive changes.



## Impact

**Higher attention on sustainable products.** By making certified products easy to find on your website, you educate your customers and nudge them toward more responsible choices. It also gives your suppliers an incentive to pursue certification processes.

**Action towards various SDGs.** Labels can help you to put the focus on specific issues that are not only emission-related, such as plastic pollution, human rights, animal conservation, etc.



## Benefits

### Purchase confidence.

Recent research has proven that green labels decrease consumer guilt. Additionally, 85% of shoppers say that their decision to buy a product is informed by reading a product's packaging while they're shopping, including labels.

### Sales increase.

The purchase rate of products with green labels will most likely increase among customers with high ecological motivation.

### Remove barriers.

Purchasing on e-commerce platforms will be easier because of the easier transfer of product information. This will make it easier for customers who don't necessarily have a high ecological motivation to choose more sustainable alternatives.

### Price Premium.

Research shows the opportunity to share costs with customers who are ready to pay higher prices. According to IBM research, nearly six in ten consumers surveyed are willing to change their shopping habits to reduce environmental impact. And among those who say that sustainability is very/extremely important, "over 70% would pay a premium of 35%, on average, for brands that are sustainable and environmentally responsible".



## Examples



**Amazon** - The company now offers customers the option to specifically search and assess products that have labels aligned with their Climate Pledge. They've partnered with a wide range of external certifications, including governmental agencies, non-profits, and independent laboratories, to distinguish the most sustainable products. Additionally, they've created their own certification, Compact by Design, to identify products that, while they may not always look very different, have a more efficient design that is more efficient to ship.



**Avocado Store** - On the website it is possible to browse through a list of labels used by the shop, reading a short explanation and directly getting access to certified products.



**Rossmann** and **Zalando** - When available, sustainable labels are shown on their online product pages directly.







## Implementation

### Pre-screen your products

- ▶ Pre-screen products you sell and find out with suppliers whether they are certified, and how reliable those certifications are.

### Identify certifications to work with

- ▶ Screen for well-renowned certifications that align the most with your climate pledge and summarize which certifications are relevant for the products you offer. To choose among labels, it is important to have an overview of labels active in your geographical area and in your product segment. Below you can find useful tools:

-  **Database:** Ecolabel index - features all the most relevant labels, also divided per sector.
-  **Database:** Global ecolabelling - labels divided per country
-  **Database:** A selection of the most important labels for Food, Fashion, Cosmetics
-  **Database:** Eco label - One of the most well-known in EU umbrella label

### Get engaged and put pressure on brands and suppliers

- ▶ 1. Based on your research on certifications, recommend your suppliers to pursue the ones most suitable for your brands' products.
- 2. Consider organizing a webinar to educate brands about the benefits of sustainability certifications and advice on which ones to choose.
- 3. Define a horizon (e.g. in 3-5 years), when responsible certification becomes a must-have requirement and communicate it to your partners (within under a year to gain promotional benefits)

## Highlight sustainability labels on your website

- ▶ Find a way to highlight factors of sustainability on your website (e.g. recycled materials, low energy consumption, etc) thus grouping labels under common categories and making the screening easier.

## Build internal and external awareness

- ▶ After choosing certain certificates as your own standard, make sure you communicate it to:
  - Brands and Suppliers - Call on all brands to start certifying their products for your chosen criteria. Appeal to the goal of improving your and their Scope 3 Emissions.
  - Employees - Explain why this choice is in line with your values and why it is important.
  - Customer - you could have a separate page on your website with explanations of the labels and why you chose them. You can find a good example on the Avocadostore website.

## Certify your own products

- ▶ **Check the costs.** Every certification comes with fees for: application, annual renewal, extension/modification, inspection, etc. Here are some examples of the costs for EU eco-label, Blue Angel label (Germany), Fairtrade label, COSMOS label

**Consider the timing.** When certifying the product, often product tests are required. Actual testing time depends on the product type and test methods used, for many products it could take one day, but if there are lifetime test requirements (e.g., lighting products) it may take up to several months.

After the testing phase, product certification usually takes several weeks certification depends on the certification body's review time.



## Extra Mile

### Enable label filtering

- Build a filter search per label/category (see project 9)

### Label preview

- Introduce a preview of labels related to products already on the search page (and not only on the product page).

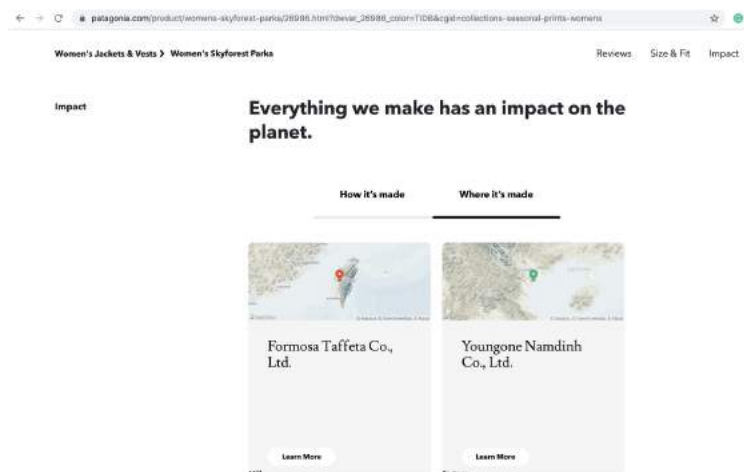
### Certify your company

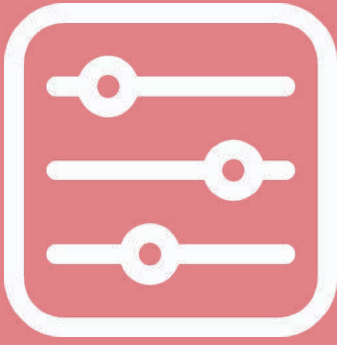
- Above we were only talking about product certifications. You can increase the impact by certifying your company as a whole. Here you can find a number of sustainability certifications and programs that most businesses could participate in, including those that ensure good labor practices, such as Bcorp, Cradle to Cradle, etc.

### Aim for ultimate transparency in your supply chain

- Asket offers fully transparent information on its supply chain on their website, making it possible to trace their products "From Farm To Finish Line".

Patagonia as well offers full information on its own operations and those of the mills, factories, and farms that work in creating their products.





## 9. Include a sustainability filter in your search bar

Differentiate your company from your competitors by developing a sustainability filter that improves UX and encourages customers to purchase better alternatives with a lower carbon footprint. This will build your company's credibility and attract and retain customers, while simultaneously educating them on the importance of responsible consumption.

'On-site search is a big factor in the customer journey of those consumers who either know exactly what they're looking for and have come to your site to find it or who have some idea of what they're looking to buy but may need some help narrowing it down.' - According to Econsultancy



## Impact

**Saved resources and emissions.** By providing information on the carbon footprint of products and including a carbon footprint related filter, the customer is enabled to choose a product with below average CO2 emissions. This will directly influence the reduction in your scope 3 assessment. Looking at Zalando as an example: by offering sustainable alternatives, like Mudd Jeans, up to 92% water resources and up to 70% CO2 emissions can be saved with each order.

**Raised awareness.** Implementing sustainability filters on your site might nudge customers to look for or expect similar functions on other websites, thus creating pressure for the whole industry sector. Recent research on e-commerce trends shows that, due to increased competition and customer pressure, approximately 68% of surveyed e-commerce companies plan to improve their site search functionality in 2021.



## Benefits

### Competitive advantage.

Only 16% of major e-commerce websites offer decent filtering systems. Thus, maintaining such a filter will differentiate you from competitors.

### Retention increase.

Filtering can improve user experience, increase product views, and, ultimately, boost conversions in your store. 91% of consumers appreciate the online retailer's honest communication with regard to sustainable offers. (Source)

## Consistency proof.

90% of Gen Z consumers (aged 18 to 24) say that companies have a responsibility to protect the environment and make a positive social impact (Source). Writing about your sustainability commitments and setting goals to reduce emissions is not enough: a sustainability filter is one of the many tangible ways to show your customers that you take responsibility.

## Assortment adjustment.

Having such a filter in place will help you to constantly gather relevant data about which criteria are important for your audience. Thus, it will help you to adjust your product suggestion step by step, constantly increasing the percentage of suggested products with a lower footprint than conventional analogs.



## Examples



**Zalando** currently enables customers to make more sustainable choices via sustainability filters and a sustainability flag system. This has influenced the customers' purchasing habits and resulted in a 32% increase in purchases of sustainable products in 2020.

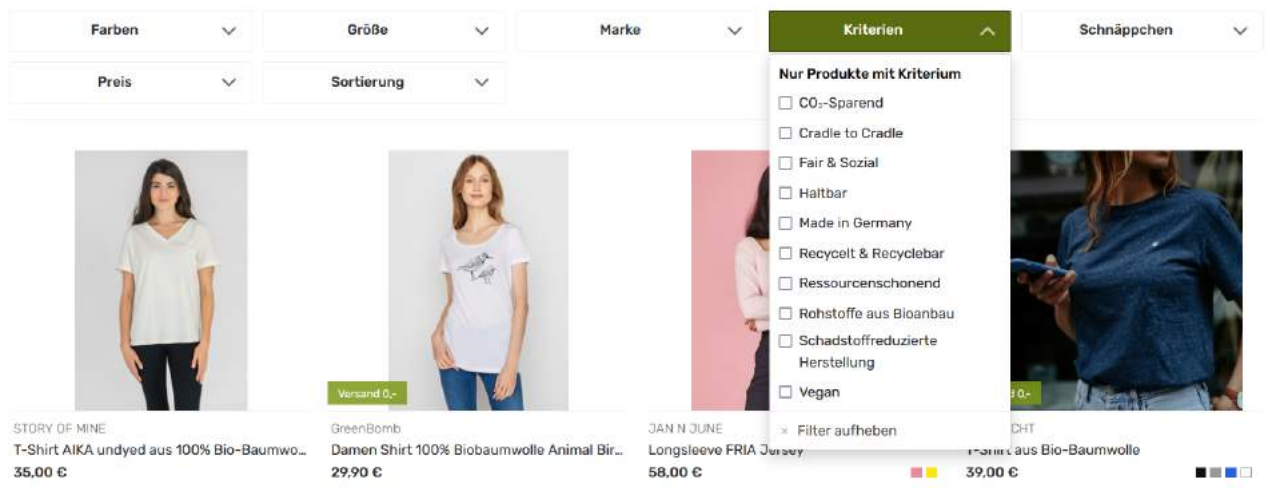


**IKEA** is currently implementing an Artificial Intelligence based product recommendation system that incorporates more sustainable options when searching for bestselling products, to nudge the customer toward embracing sustainable living.



**Avacadostore** offers an extensive filtering system including criteria related to resource and emissions reductions, animal welfare, and worker rights.

### Damen Shirts



## Implementation

### Curate individual picks

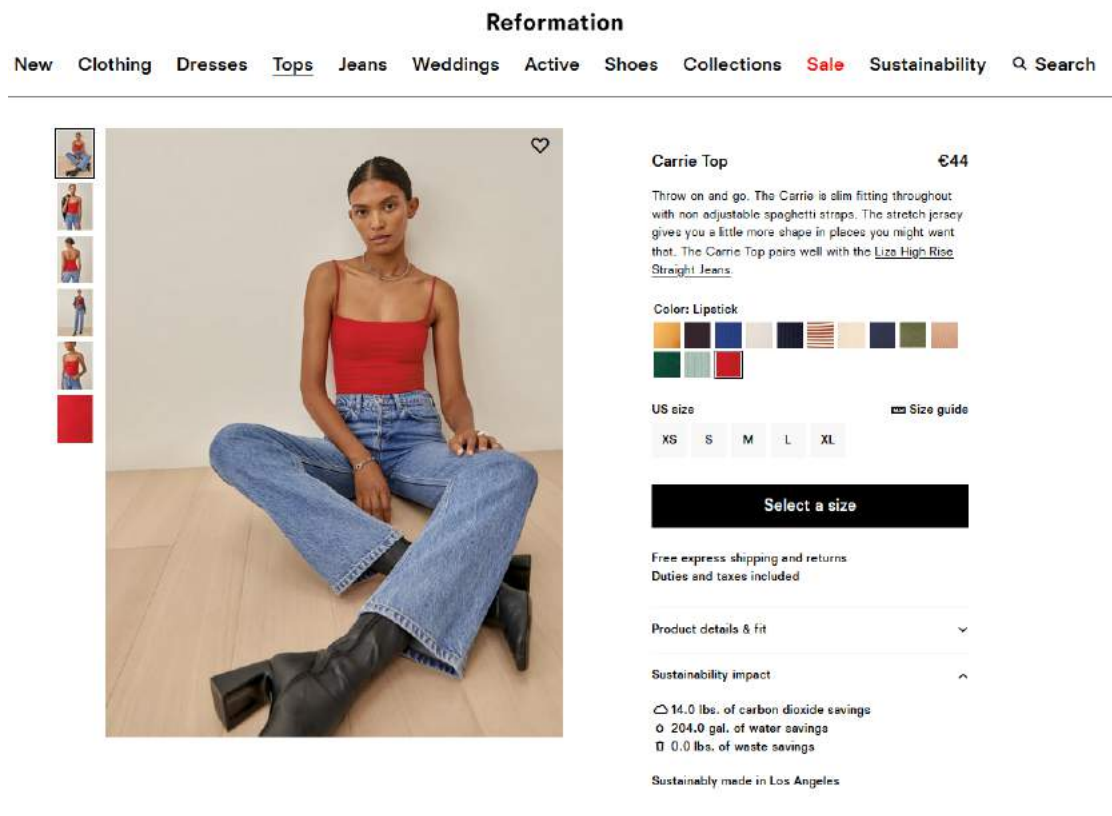
- ▶ Improve the overall presence of sustainable products by adding banners throughout the "storefront" or website. Recommend sustainable alternatives, and suggest customers who view conventional products their more environmentally conscious alternatives.

Curate a list of sustainable picks for your customer when they visit the store: rank higher sustainable products in general recommendations, and, where possible, let customers set their preferences in order to see only products that fit certain criteria

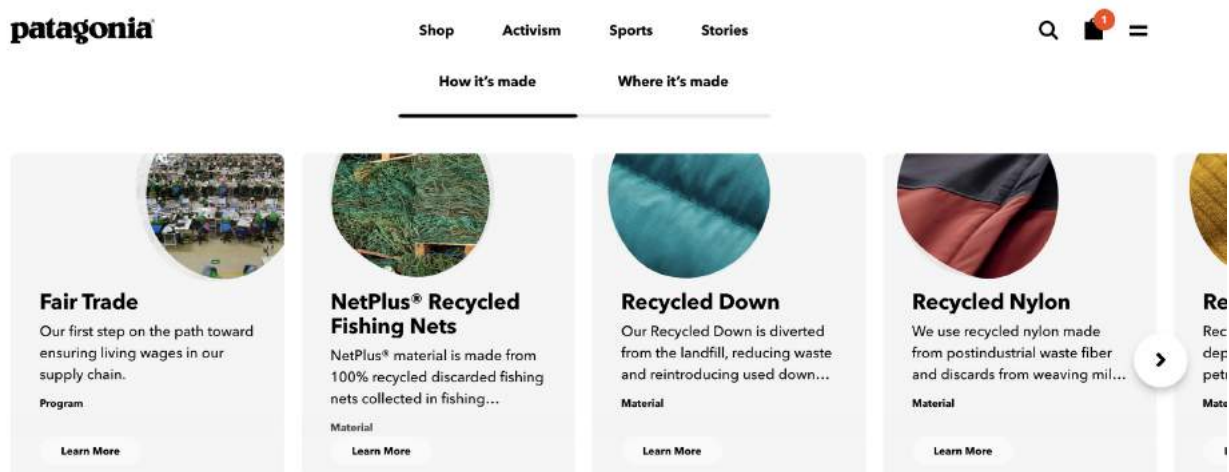
### Extend product pages with sustainable criteria

- ▶ Make product pages more transparent by focusing on sustainability. Remember that a page replaces the physical packaging in a store.

- Calculate and showcase the resource and emission savings of sustainable products in comparison to average products on the market. The Reformation does this on their website to highlight the significant difference between items.



- Allow easy comparison with regards to non-financial characteristics (certified protected areas, sustainable resources, recycled materials, pre-owned etc). (Source) Patagonia is showing on every product page what resources are used in production and under what social conditions it was produced.





## Save filter settings

- ▶ For climate-aware customers who have used sustainability filters before, save it as a pre-setting for their next visit. Customers will also appreciate that you help them to take action.

## Survey your customers

- ▶ Develop a survey for customers to gain qualitative insight on:
  - their experience with searching for sustainable items
  - how your banners and nudges have contributed to their climate
  - how easy was it for them to use your sustainability filter

## Extra Mile

### Integrate AI-based product recommendations

- ▶ IKEA Retail uses Artificial Intelligence-based product recommendations to help suggest products more fit for purpose, reducing returns and increasing use of time as well. (Source)



## **10. Employ reverse logistics to facilitate circularity**

In order to lower your footprint, you can collaborate with suppliers and recycling partners in order to set up a sustainable reverse logistics system. Identify options for product recovery, reutilization, and remanufacturing: the idea is to enable the flow of goods, parts, and materials back to the beginning of their manufacturing system or into another production system.

Some examples of this circular approach include taking back old products to extract their raw materials or recycle them, repairing broken products, or refurbishing used products to re-sell them.





## Impact

**Lower supply chain emissions.** Raw material extraction and sourcing, facility construction and operation, and disposal sum up to a big chunk of supply chain emissions, but there are still very few solutions available. (Source) Reverse logistics can play a role in improving the efficiency in supply chain operations because it "optimizes product traffic in both directions" (Source).

**Lower energy consumption.** Remanufacturing a product requires 85% less energy than manufacturing a new one, which translates to conspicuous savings in terms of carbon emissions. (Source)

**Improved recycling rates.** Especially when it comes to plastic, recycling rates are substantially low: only 9% of the 9 million tons of plastics produced in the world are recycled. Therefore, guaranteeing a closed loop can make a huge difference. (Source)



## Benefits

### Lower costs.

Remanufacturing a product on average costs 40% to 65% less than making a new product, allowing for a market re-sell price between 30% and 40% lower for similar quality levels. (Source) Reverse logistics allow recovering value from assets, increasing the revenue, and reducing expenses. (Source)

### Risk reduction on policy compliance.

It is almost sure that sooner or later sustainability initiatives such as closed-loop supply chains will be regulated by governments. Being a front runner on these policies not only improves the perception of the company in the eyes of the customers, but also influences policy decisions. Furthermore, these measures reduce the risk of potential fines for improper disposal and non-compliance. (Source)



## Enhanced customer loyalty.

A Unilever study shows that brands that prioritize sustainability have 30% higher growth than those that don't. This is because customers that want to buy sustainably tend to become more loyal to brands with sustainability initiatives in place.



## Examples

SWEDISHFALL  
LISTING ATHLETES

**Swedish Fall** - The company sells sports clothing shipped in sustainable, recycled boxes. The customer can send their own old clothing back in the box, and Swedish Fall commits to recycling it.



**A Good Company** - Offers customers the possibility - for a small additional fee - to send the case back if it breaks or if they choose a new phone and want to change it. Then a new case is shipped to the customer and the old case is recycled.



**Patagonia** - their online shop offers the possibility to send back used or even ruined clothing to have it fixed or swapped. Returned clothes in a good condition are then offered on a separate Worn Wear website and customers are incentivized by credits toward purchases in Patagonia retail stores, on [WornWear.com](https://www.wornwear.com) and Patagonia.com.



**Dell** - They started using (at least) 10% post-consumer recycled plastic for one of their computer lines since 2014.



## Implementation

### Define the right type of open or closed loop system for your product streams

- ▶ According to the type of products you sell, it can make more sense for you to use one system instead of another.
- ▶ Look for ways how your products can be:
  - Repaired
  - Reconditioned
  - Remanufactured
  - Recycled
  - Disposed
- ▶ Estimate the environmental benefits of different scenarios using Life Cycle Assessment (LCA) tools (see Use Life Cycle Design principles in the Extra Mile section below).

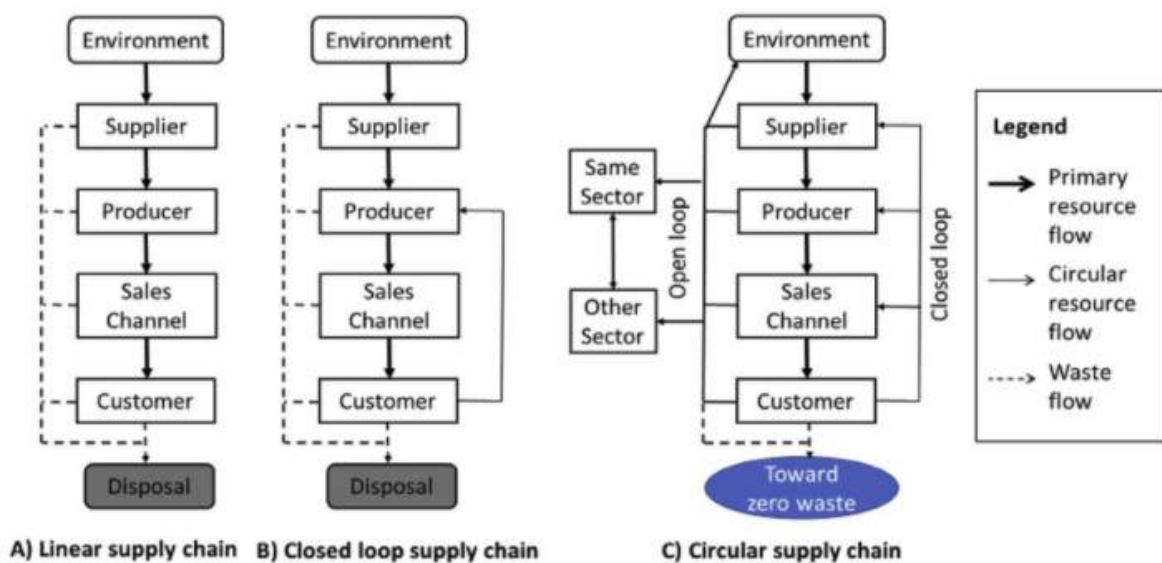


Image 1. Difference between linear, closed-loop, and circular supply chains (Source)



## Create a Waste Disposal System (WDS)

- ▶ You could include take-back programs where producers or sellers take responsibility for the disposal of the product as well.

Example: Live Coco sells sustainable electric toothbrush heads that once used, can be sent to several collection points in Europe, where the companies will make sure they are recycled.

## Create an Integrated Logistic Support (ILS) system

- ▶ Products with ILS are designed to last longer through high quality and support from the seller/producer. The cost of this extra support can be included in the price. (Source) Example: Nudie Jeans sells Jeans offering unlimited free repairs.

## Create a Remanufacturing or Refurbishment (ROR) system

- ▶ Consider introducing discounts or bonuses for the collection of certain products. This works especially well in the tech sector where old laptops and phones can be refurbished and put back on the market or their components can be useful for future reparations. Example: Media Monster is a Belgian company that sells refurbished laptops and computers. They always offer a discount in exchange for returning an old laptop, even a defective one.



## Work toward a closed-loop supply chain

- ▶ Apply reverse logistics to reusable packaging in your supply chain, making sure that products are plastic and waste-free from the beginning to the end. You can do that by choosing suppliers that already have a system like this in place, or by influencing your own suppliers to create a reverse logistics procedure.
- ▶ One example is Pepsico, which partnered with Loop to experiment with reverse logistics and reusable packaging in some food sectors of its supply chain. Loop consolidates all the different packaging forms at several regional facilities, sorts, and stores them (to avoid unnecessary emissions) until there's enough volume to send them back to suppliers all the way to manufacturers. Similarly, DHL suggests using reusable containers for the shipment of the automotive industry.

## Consider an open-loop supply chain, powered by cooperations

- ▶ Sometimes instead of a closed-loop supply chain, it makes more sense to send your products or packaging to third parties, introducing them to another sales channel (open supply chain). In this case, you can create partnerships with third organizations.



## Extra Mile

### Use Life Cycle Design principles

- ▶ Incorporating Life Cycle Design strategies within your processes will help you greatly in understanding which circularity strategy best fits your products. The LCD encompasses environmental and socio-economic factors within its methodology, accounting for all stages throughout the production life cycle. This allows you to include techniques such as zero-waste design or upcycled design throughout the decision-making process.



Image 2. Potential sustainability improvements throughout a typical product lifecycle (Source)

## Educate your community

- ▶ You can add sections to your website to advise your customers on how to treat the products to make them last longer.

For example, Fairphone offers on their website multilingual tutorials on how to upgrade parts of the phone without having to buy a new one, Asket and Patagonia, uploaded several tutorials on how to fix clothes. Similarly, Maison du Monde has in its website tutorials on how to give a second life to furniture.



## **11. Motivate your customers to take climate action**

As an e-commerce company, you have endless reduction potentials to reduce your own emissions caused by production and logistics. While working on that, you can move toward your sphere of influence and invite your customers to take climate action in their lifestyles.

You have a wide network of individuals loyal to your brand, and you have the talent to sell, not only products but also ideas. This puts you in a position to play a significant role in the necessary wide-scale change: encourage people to use green energy, join climate strikes, vote, travel locally, or volunteer their skills - there are so many things that everyone can do, and you can make it as easy as a few clicks.



## Impact

**Reduce emissions in your sphere of influence.** We all should start with our sphere of control - Scope 1-3 emissions. The next step is to work on our sphere of influence. For example, every 120k of your European customers have an accumulative carbon footprint of 1 million tonnes per year. If you motivate just 1% of them to switch to green energy, that alone would save 1320t of carbon in the first year.



## Benefits

### Consistency.

As you communicate your sustainability commitments, you can only be truly consistent with it if you exploit all opportunities to contribute to global climate neutrality. Thus, your stakeholders will appreciate it if you show an active position in this area.

### Overtake your competitors.

Research reveals the need for campaigns that focus on educating companies, carriers, and consumers to create a culture of conscious consumption. ([Source](#)) Position yourself as a front-runner in your sector, fighting for climate change, before this became a common trend.



## Example



**Patagonia** runs campaigns all year round, some of which are: Vote climate deniers off office (USA), Buy less, demand more, and Patagonia Action Work. The latter is a digital tool that facilitates the connection between committed individuals and local organizations working on environmental issues. Overall, Patagonia has donated \$100 million to grassroots activists over the past 40 years and trained thousands of young activists to be more effective in their campaigning.





## Implementation

### Spread the word about tools that empower personal action

- ▶ LFCA's Time for Climate Action campaign - is an annual campaign that your company can join anytime. The goal is to enable your customers to take impactful climate action in just 5 minutes. In the first year (2021), 202 companies participated - including Spotify, idealo, TIER, home24, Delivery Hero - reaching more than 24m people. Thousands of individual actions were triggered on the campaign page, and each company was leveraging their product and knowledge by creating educational materials for their sector, running tree-planting campaigns, and more. The next public campaign is planned for April 2022, aiming to engage 500 global brands and engage 50m people across the globe.

Count Us In is an online project aiming to mobilize 1 billion people over the next 10 years to take practical steps toward reducing their carbon footprint through 16 incremental steps. Together with companies like Bare Necessities and flipflop as well as organizations such as TEDx and UN Live, the project has so far resulted in 200k people taking 4m steps, and saving 85k tonnes of CO2 emissions. As a company, you become an active member of Count Us by promoting the project among your community. As an added feature, Count Us In also helps you create your own customized platform, which is directly linked to the CUI aggregator.

### Support strikes

- ▶ Climate strikes have proven to be one of the most effective ways for people to have their voices heard. Being in direct touch with your customers and employees, you can keep them informed about upcoming events and encourage them to join in.



- ▶ Idealo's Trotzdem für Klima campaign aims to educate and encourage everyone on the climate crisis by offering tangible advice on how to reduce their personal carbon footprint. Additionally, the #TrotzdemFürsKlima campaign aimed to motivate their customers to join the climate strikes. Idealo even shut down their website for a few hours on the day of the strike, to stress the urgency of the climate crisis.
- ▶ Tumblr, Kickstarter, WordPress, Imgur, BitTorrent are some of "6,000 companies which support climate strikes and spread the word on social media, donate ad space, or place banners on their websites to promote the strikes."

## Educate about the carbon footprint

- ▶ Only when people know the real price and environmental impact of the products, they can make responsible decisions. In your sector, you can not only communicate transparently the actual footprint of your products but also run additional campaigns or create content that raises awareness.

For example, Telekom has its own magazine, We Care, educating customers through articles and games about more sustainable ways to use devices.

Another example of educating customers about products' footprint is a simple game made by Oatly.



## Extra Mile

### Join forces with other industry players

- Consider joining forces and cooperate with other companies - even your competitors - for the sake of strengthening your collective message. The sustainability issues of our time are far too complex for any individual company to tackle. Pooling resources, intelligence, leadership, and common sustainability goals with other companies, can elevate the level of results and make a significant difference. ([Source](#))

For example:

[MyMuesli](#) - as well as [Freche Freunde](#), [fritz-kola](#), [FRoSTA](#), [Rügenwalder Mühle](#), and [Veganz](#) - joined forces in a campaign called [Hey Bundestag!](#) initiated by Oatly. Together they petitioned the necessity of having a common and comparable way to calculate emissions across all products and make it obligatory to disclose carbon footprints on every food product packaging so that consumers can choose consciously. While MyMuesli has its own plant-based milk brand, which is a close competitor to Oatly, it fully supported the campaign through its marketing channels. Thanks to cooperation among these companies, the petition successfully gathered 57k signatures and thus exceeded the amount that was needed to secure Bundestag's attention. ([Source](#))

[TIER Mobility](#) reached out to competitors and teamed up with Dott and Voi to build new standards for sustainability within the industry. Co-founder and CEO stated found that being sustainable is a collective effort, and it actually helps companies to be more sustainable, more profitable in the long run and that this approach can change the mobility industry for good.



**The Female Company** created a petition with the goal to reduce the tax on tampons in Germany. Through a creative approach to selling tampons (in a book casing) and collecting over 200k signatures their cross-collaborative approach work in influencing German politicians to reduce the tax within 10 months. Co-founder Sinja Stadelmaier noted, "This case shows that we are able to change things and we are able to change laws if we join forces together." (Source)



Assessment Tool: How to Collaborate with Your Competitor

## **Survey your customers and use the data to optimize processes**

- It's not only about educating. Just raising this topic in dialogue with customers and asking them the right questions can already get the ball rolling.

For example, Yelp is surveying customers to collect data on the use of single-use plastics in restaurants, after which they work together with the restaurants to slowly eliminate said plastics.



## 12. Introduce CO2 removal donations at the checkout

A voluntary climate protection contribution is a straightforward way of involving your customer in climate action by nudging them to reflect on the impacts of consumption.

At the checkout you have an opportunity to communicate with your customer about the environmental footprint of the product: you can show that you've compensated for it already, or offer them the option to compensate for these products themselves. These budgets can be used not only to remove carbon via existing carbon sinks but also to invest in innovative sustainability solutions in your sector.



## Impact

**Text Customer education.** Offering a simple yet informative way for customers to contribute to a meaningful cause has the potential to educate the consumer on a more holistic level of various social and environmental issues and actions.

**Investment in carbon capturing.** Support the growing trend by making this option easy as a few clicks. The voluntary carbon market has almost doubled in growth from 2018 to 2019, due to a record high of issuances equivalent to 138 million tons of carbon. ([Source](#))



## Benefits

### Boosted credibility.

By offering specific projects for your carbon credit purchases that are third-party certified from organizations like [The Gold Standard](#) or [Verified Carbon Standard](#), which ensure you can drive positive change that goes beyond climate mitigation. For example, for each tonne of CO2 mitigated through Gold Standard-certified projects, up to \$465 in additional value goes toward the Sustainable Development Goals (SDGs) ([Source](#)).

### Additional funds to drive the necessary change.

With a proper structure, you can set up a fund to finance and scale your own sustainable initiatives. Gathering this amount not only helps you to pioneer new technologies and initiatives, but also includes the customer on this journey – creating a community of change-makers.



## Examples



**Zalando.** In the final checkout phase, customers are asked whether they would like to contribute €0,25 to support Gold-Standard Certified emission reduction projects.



**eBay.** The online marketplace eBay has launched a pilot project for CO2 offsetting where customers have the option to offset the CO2 emissions associated with each purchased item(s) with just one click.



**weDo/ Professional.** The eco-ethical haircare brand, together with Plastic Bank have developed a sales-based initiative that involves collecting 8 plastic bottles from the environment for every cosmetic product sold.



**Organic Basics.** offers a variety of voluntary options for the customer during checkout including, "Sustainable shipping options", "Voluntary Climate Protection contribution" and "Social cause donation".



**Davines.** integrated Cloverly tool in April 2020. Since beginning the program, shoppers have offset 84t of carbon dioxide across 10,000 orders. On average about 20% of Davine's shoppers choose to offset their purchase. On the checkout page, a shopper can choose to add \$0.30 for carbon-neutral delivery. This amount is only offsetting one small package and not the entire truckload that is being shipped, making it more affordable for customers (Source).



A long list of over 30,000 online companies including H&M, YOOX, and Adidas have joined forces with **rePurpose** through a rewards system. A Chrome extension that applies discount codes and offsets your plastic footprint — at no additional fee — when you shop.



# Implementation

## Calculate the right amounts to ask for

- ▶ To start offering this option at checkout, you don't have to know the exact footprint of every product you sell. You can start with:
  - a fixed rate, usually less than €1 for purchases under €100,
  - a small percent of the product price,
  - a rough estimation of product footprint in your sector, for example, tools like [Yook](#) can help with it.

However, the most impactful way to approach this is to calculate the actual footprint of your products, communicate it openly on your website, and charge accurate amounts related to it. Eventually, this will allow your customers to grasp the environmental price of goods better and let them make more responsible decisions. Tools that can help you to calculate it are [MyClimate](#), [Climate Partner](#), [Planetly](#), [Climate Neutral](#), and many more.

## Set up funds to drive your sustainable initiatives

- ▶ The gathering of additional amounts for climate protection contributions allows you to use these budgets to not only capture carbon but also helps to invest in innovative technologies in your sector. This structure also ensures transparency and invites them to play their part.

For example, you can set up a company fund that co-contributes the development of green energy sources in your desired area or co-support green-tech innovations that are still in the developmental phase.

- ▶ [Organic Basics](#) is among many companies that have developed their own means of offsetting. Twice per year, The Organic Basics Fund donates a portion of its profits to selected organizations and grassroots activists fighting climate change, restoring biodiversity, and protect vulnerable communities.



- ▶ [Flix Mobility](#) offers a similar option for its customers. 75% of each climate contribution is used to fully compensate for the emissions associated with the customer's trip. The remaining 25% flow into the "Future of Mobility Fund" set up together by FlixBus and [atmosfair](#), to drive sustainable mobility and decarbonization in the cities and communities where we operate.

## Find trustworthy partners for carbon-capturing

- ▶ When choosing the right provider to compensate for your products, look first of all for ones certified by Gold Standard or Verified Carbon Standard (VCS).

These standards have particularly strict requirements regarding additionality, sustainable development, involvement of the local population, permanence, exclusion of double-counting, and regular verification by independent third parties.

## Test different formats

- ▶ There are multiple ways how you can approach this. For example:
  - Offer a direct product offset option or fixed donation amount for any transaction,
  - Apply an 'opt in' or 'opt out' format of the feature,
  - Ask your customers to pay additionally or accommodate the costs yourself while only communicate the beneficial outcome (e.g. 10 trees were planted),
  - Refer to GHG emissions only, or take into consideration other protectable areas, such as water conservation, plastic offsets, or animal welfare.
- ▶ There are multiple startups that offer a donation widget tool for checkouts. A few include:
  - [Give Lively](#) and [DonorBox](#) offer a free embedded donation widget aimed to devote more funds to non-profit organizations and support them in their missions.

- Pledge sets out to drive impact by connecting brands and consumers to their favorite causes around the world.
- Change Commerce by Shopping Gives offers platform integration for e-commerce companies to apply a seamless donation process at checkout.



**Service for plastic offsets:** Everwave

## Set the transparent communication

- ▶ Be transparent & communicate the purpose of the contribution and how these funds are invested.



## Extra Mile

### Donate as a company

- ▶ As a company, you can go beyond relying on customers to donate for change. Your company has the opportunity to contribute to valuable causes through becoming a 1% for the Planet member. This also boosts credibility among your customers in your commitment to the environment, and they know their purchase with you will make a difference.
- ▶ Another way can be to match donations with your own contribution. For each voluntary donation made by your customers, you can double the donation amount. Highlighting this information might also nudge the customers to donate at a higher rate because they know it will have a larger impact.



## **13. Adopt an internal carbon tax**

Compensation will not be a voluntary option for much longer. Therefore, it is smart to prepare for increased carbon taxes earlier than your competitors. Plus, it is forward-thinking to simply treat carbon removals as you do any other business expense – by assigning a monetary value and budgeting for it – allowing you to work towards reducing your emissions, hence reducing your carbon removal costs too. This approach makes your transformation towards carbon neutrality a priority for the whole company and influences further decision-making across all departments.

According to C2ES, "Internal carbon pricing generally takes one of three forms:

- An internal carbon fee is a monetary value on each ton of carbon emissions, which is readily understandable throughout the organization. The fee creates a dedicated revenue or investment stream to fund the company's emissions reduction efforts.
- A shadow price is a theoretical price on carbon that can help support long-term business planning and investment strategies. This helps a company prioritize low-carbon investments and prepare for future regulation.
- An implicit price is based on how much a company spends to reduce greenhouse gas emissions and/or the cost of complying with government regulations. It helps companies identify and minimize these costs, use the information gained from this to understand their own carbon footprint.

Many companies use a hybrid model of complementary approaches that combine these different attributes." (Source)

According to the World Bank, the UN Global Compact has called for businesses to adopt an internal carbon price of at least US\$100/tCO<sub>2</sub>e by 2020, to keep GHG emissions consistent with a 1.5–2°C pathway.

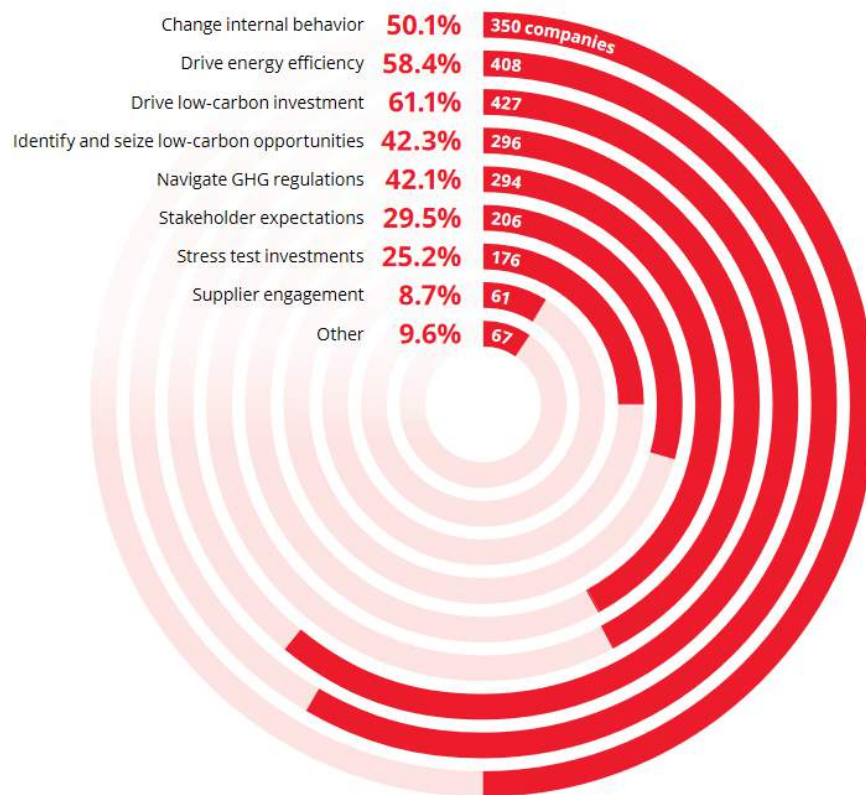


**Financing innovations.** Some companies, such as Microsoft, use revenue from its internal carbon fee to fund renewable energy, energy efficiency, and other projects needed to reduce emissions; research into emissions reduction technology; and raising employee awareness of climate risks and opportunities.

**Actual impact on GHG emissions.** Companies' objectives act as a compass in price calculation, and this is exhibited in the reported internal carbon prices they use ([Source](#)). \*\*This allows \*\*your company to decide the amount set aside for offsetting based on your objectives, ranging from raising internal awareness about climate change to aiming for climate positivity in your operations. "Research shows that companies' internal carbon-pricing initiatives are affecting 22% (and growing) of global greenhouse-gas emissions." ([Source](#))

**Faster action.** According to a study of the Global Compact Network in Germany, currently, it is "politically unrealistic" to set a global carbon tax that will be high enough to keep emissions consistent with a 1.5–2°C pathway. However, an internal price on carbon can put pressure on institutions driving for faster implementation of effective carbon taxes ([Source](#)).

**Economic switch.** Studies show that carbon taxes don't affect overall economic growth ([Source](#)). However, they of course favor an economic switch towards more clean industries, in fact, studies in British Columbia have shown that "the most carbon-intensive and trade-sensitive industries see employment fall with the tax, while clean service industries see employment rise." ([Source](#))

Figure 5.1 / Objectives for implementing an internal carbon price<sup>305</sup>Image 1. Objectives for implementing an internal carbon price ([Source](#))

## + Benefits

### Action ahead of the curve.

The number of companies that are using or planning to use an internal carbon price has increased by 80% since 2015 ([Source](#)). Incorporating a monetary fee associated with carbon emissions in your company's corporate accounting allows you to gain a competitive edge, and showcase corporate responsibility and leadership at all levels of operations.

### Long-term resilience.

Internal carbon taxes act as a step toward managing the risks when transitioning to a low-emission business model, strengthen and support corporate values, as well as improve investment decision making ([Source](#)).

## Network of forward-thinking companies.

Among the benefits, an internal carbon tax allows companies to enter into a network of conscious companies. For example, "companies can communicate on progress through platforms like the CDP climate change questionnaire. Companies who successfully align with the criteria will join a growing group of Carbon Pricing Champions" ([Source](#)). Companies regulated under a carbon pricing initiative are about seven times more likely to internally place a price on carbon ([Source](#)).



## Examples



**According to CDP**, nearly half of the world's 500 biggest companies are now factoring carbon accounting into their business plans. This includes Microsoft, Ørsted, and Mitsubishi Corporation, all of which disclosed that they have already adopted an internal carbon price.



**SHOP APOTHEKE EUROPE** has committed to offsetting the Scope 1, 2, and 3 emissions caused from October 1 2020 onwards. From the day the decision was taken until the end of the year, this accounted for 3.827,97 tons, which have been configured into internal carbon taxation, fostering the effective reduction of emissions to decouple the company's carbon footprint from its fast growth path. Additionally, a 10 % security surcharge is added to account for unforeseeable discrepancies. The internal tax is then offset through a GS verified project ([Source](#)).



**H&M** developed an internal carbon pricing model and tool to quantify and directly connect emissions to a price on carbon associated with different areas of the H&M Group, including designing, producing, and selling. This enables their product managers to make more informed decisions when choosing where to produce an item or what material to use ([Source](#)).



**Sony Corporation** uses a differentiated price, which is decided and reviewed independently among the different business units. These individual calculations vary and reflect cases like the degree of environmental impact, energy pricing, business size, budget, and management status ([Source](#)).






**La Poste** "uses an internal carbon fee approach where business units are charged and incentivized to undertake abatement measures. As a result, GHG emissions have decreased and money collected can be used to purchase offsets. This information is being communicated to its clients who can, in turn, promote this information to their clients. Internally, the internal carbon price raises awareness among employees." ([Source](#))



## Implementation

### Carbon Price Calculation

- ▶ There are many digital tools available on the market that are made to help you set and manage your Internal Carbon Price (ICP). Some examples are provided below:

-  **Tool:** [Carbon Tax Calculator](#) (by Ecochain)
-  **Reference numbers:** [Carbon Pricing Connect](#) (by CDP)
-  **Reference numbers:** [Carbon Pricing Dashboard](#) (by Worldbank)
-  **UN's guidelines:** [Business Leadership Criteria on Carbon Pricing](#)
-  **CDP' guidelines:** [Putting a Price on Carbon](#)

It's important to include all internal processes in the development of your carbon tax calculation. This should be accounted for in the product cost, packaging, shipping, etc.

Remember that your internal carbon price should be high enough to have an influence and impact on your material investment decisions and to drive down greenhouse gas emissions ([Source](#)).



## Account your Environmental Profit & Loss

- ▶ As Ecochain explains: "Environmental Profit and Loss (EP&L) expresses sustainability in terms that all businesses understand – it talks money. The EP&L account is a method for placing a monetary valuation on a company's environmental impacts. Including the impact derived from its business operations and its value chain, from cradle-to-grave."
- ▶ Expressing environmental impact in economical terms instead of the usual metrics (e.g. CO<sub>2</sub>-eq or kg CFC-11-eq) allows for easier comparison among different environmental impacts (waste, CO<sub>2</sub>, toxicities) using only one indicator.
- ▶ Expressing environmental impact in economical terms instead of the usual metrics (e.g. CO<sub>2</sub>-eq or kg CFC-11-eq) allows for easier comparison among different environmental impacts (waste, CO<sub>2</sub>, toxicities) using only one indicator.

## Revise your investment strategy

- ▶ Consider a bespoke price that takes internal sensitivities into consideration. (Source) According to a recent report, due to the complexity and uncertainty associated with GHG emission calculations, more than 400 companies reported using a carbon price as a shadow price to monetize the emissions associated with their decisions. (Source)
- ▶ As The Gold Standard explains, "Using an internal or shadow price on carbon can help you demonstrate to investors that you understand your exposure to future regulation. It shows your customers that you are ensuring that your future business is compatible with the ambition of the Paris Agreement."

GHG Scope	Implicit price	Internal fee	Internal trading	Offsets	Shadow price
Scope 1	\$28	\$23	Insufficient data <sup>16</sup>	\$21	\$25
Scope 2	\$7	\$64	Insufficient data	Insufficient data	\$29
Scope 3	Insufficient data	\$19	Insufficient data	Insufficient data	\$49
Scope 1; Scope 2	\$28	\$22	\$31	\$2	\$28
Scope 1; Scope 3	Insufficient data	Insufficient data	Insufficient data	Insufficient data	\$25
Scope 1; Scope 2; Scope 3	\$23	\$11	Insufficient data	\$7	\$34

Price ranges by type

Price type	Median price per tonne (US\$)	Maximum price per tonne (US\$)
Implicit price	\$27	\$918
Internal fee	\$18	\$532
Internal trading	\$27	\$71
Offsets	\$6	\$35
Shadow price	\$28	\$459

Price ranges by region

Region	Median Price USD	Max. Price USD
Africa	\$8	\$120
Asia	\$28	\$918
Europe	\$28	\$532
Latin America	\$8	\$100
North America	\$23	\$760
Oceania	\$17	\$297

Image 2. Comparison of different types of carbon pricing values ([Source](#))

## Set objectives and adjust internal processes

- ▶ The biggest advantage in having an internal tax instead of an external one is the ability to set your own objectives on what to do with the carbon tax. If you do not set a clear strategy, you run the risk of arbitrarily changing the tax.
- ▶ Set company-wide regulations that align with your emission-cutting goals. For example, you can charge business units for their GHG emissions and invest these funds back into low-carbon and energy efficiency projects ([Source](#)).

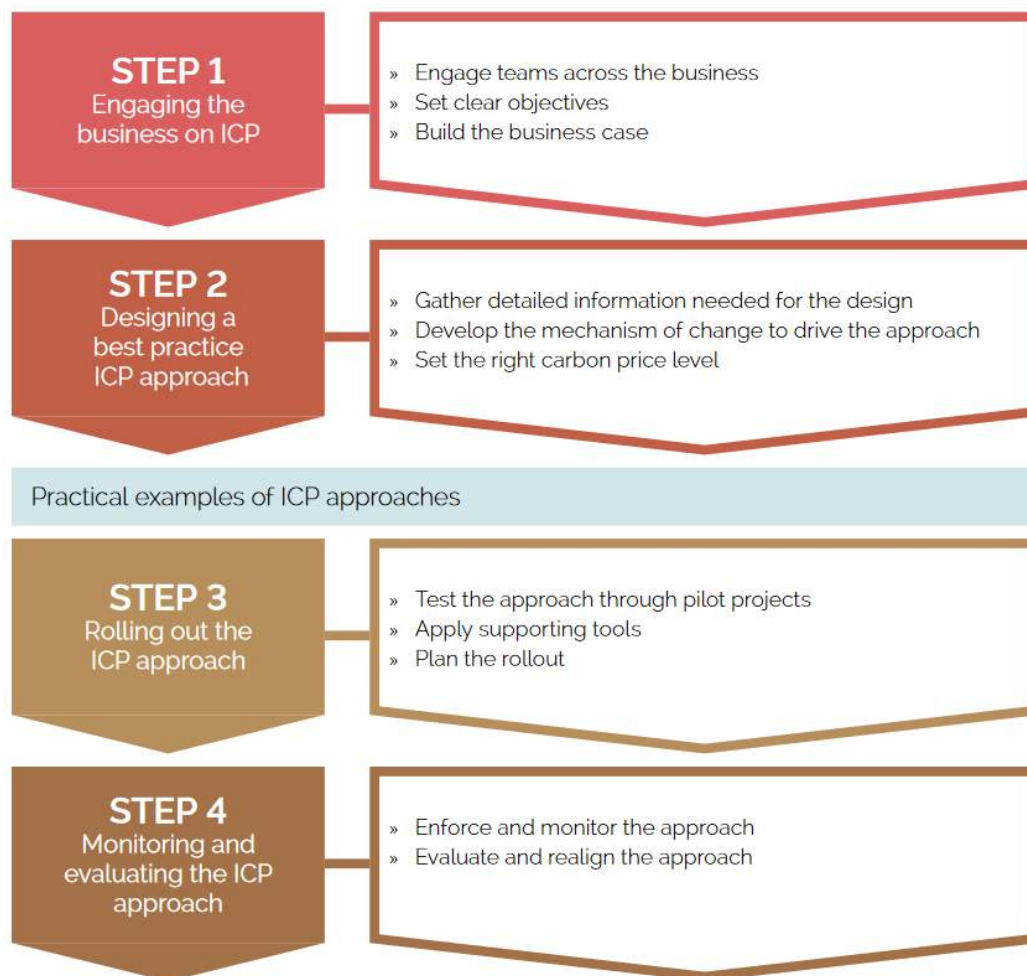


Image 3. Step-by-step approach to adopting carbon pricing internally (Source)

## Launch a committee

- Set up a Steering Committee for constant analysis/reassessment. ([Source](#))

## Advocate for global carbon pricing

- Publicly communicate your progress over time and advocate the importance of carbon pricing through policy mechanisms that take into account country-specific economies and policy contexts. ([Source](#))



## Extra Mile

### Financial incentive

- ▶ Incentivize employees by offering a financial bonus to the department that was able to cut the most emissions throughout the year.

### Set price higher than market

- ▶ The Carbon Pricing Leadership Coalition argues that most initiatives are still below the \$40-\$80/tCO<sub>2</sub>e needed to stay consistent with achieving the temperature goal of the Paris Agreement. Analysis by the UK government's Department of Energy and Climate Change and the Carbon Trust estimates that "in a scenario where warming is limited to less than 2 degrees, the global price of carbon is expected to converge at \$140 per ton of CO<sub>2</sub> by 2030 and \$400 by 2050. Adding social cost to this range between \$16-152 by 2020 and \$26-212 by 2050." (Source) (These are all conservative measures)

### Increase the scope

- ▶ When calculating the price, include not only Scope 1,2, and 3 emissions, but also the Social Cost of Carbon (SCC) in your calculation (Source).



## Overall extra mile: wrap up

In this guide, we presented 13 practical projects that any e-commerce company can implement. Achieving higher emission reduction potentially lies in product optimization and other large-scale initiatives, which we could not explain in detail in this guide, since it varies for different product segments.

In the list below we draw a general direction for you to explore: from considering sharing economy initiatives to political engagement.

# Overall focus

## Design products with a sustainability lens and support circular economy




- ▶ Product Ecodesign - also known as Life Cycle Design or Design for the Environment - is an extended design focus that integrates "environmental aspects into the product development process, by balancing ecological and economic requirements" ([Source](#)).
- ▶ Ecodesign should consider the full lifecycle of the product, considering how its design can contribute to lower the environmental impact of every step, from a choice of materials to recycling.

### Design with Intent




Image 1. The 8 dimensions of EcoDesign ([Source](#))




- ▶ Remember that recycling enables circularity:
  - prioritize easily degradable materials,
  - do not mix (compounding) reusable and biodegradable materials with other materials - facilitate reusing, recycling, or composting,
  - consider a detailed product assessment and upgrade its structure for recyclability,
  - educate your customers about what to do with goods after use.
  
- ▶ Example: **Adidas x Parley** partnered to develop design-conscious shoes to fight the plastic pollution problem and its impacts on the marine environment. The shoes are made from yarns and filaments reclaimed and recycled from ocean waste and illegal deep-sea gillnets retrieved by Sea Shepherd.
  
-  **Consulting and courses on EcoDesign:** [EcoDesign Learning Factory](#)
-  **Guide:** [8 steps to implement EcoDesign](#)
-  **Tool:** [Database of EcoDesign tools](#)


## Facilities optimization

- ▶ According to the [World Green Business Council](#), the building sector has the greatest potential for significantly reducing GHG emissions. Consider the environmental impact of your facilities (offices, warehouses, physical shops, and collection centers) and how it can be reduced through simple solutions:
  - **Use of renewable energy:** are your warehouses powered with renewable energy? Is this energy used in an efficient way? Is it locally sourced?
  - **Sustainable water consumption:** is there a possibility to use rainwater for some areas of the consumption in your facility (e.g. sewage)
  - **Lighting and heating/cooling system:** do you prevent avoidable use of lights and climatization (e.g. with an automatic switch-off system) and do you use more sustainable lighting sources (e.g. LED?)

- 
- **Food and single-use plastic:** do you make it easy to have access to plastic-free and plant-based food in your facilities?
  - **Sustainable warehouse ideas**

► Example: [Bol.com](https://www.bol.com)'s offices and fulfillment centers are since 2020 powered by 100% renewable Dutch energy. Other initiatives of the company to make its buildings sustainable include lighting optimization, a ban on disposable plastic (e.g. PET bottles), special nests for wildlife and insects to support biodiversity.

 **Guidelines:** Ideas to reduce water consumption in commercial buildings

 **Toolkit:** Tools on buildings optimization from the BREEAM award (which is among the most prestigious sustainability award for industrial buildings).

## Other ideas that might be useful

### Join e-commerce alliances

► Many companies in your sector are taking action, and the power of a network can make it easier for you to have a positive impact on the climate crisis. Consider joining alliances working on your same objectives, to facilitate knowledge sharing, and to have a stronger claim in regarding your product design and supply chain.

**Here you can find just some of the active e-commerce alliances:**

[Sustainable Apparel Coalition](#)

[Green Alliance](#)

[Responsible businesses alliance](#)

[Sustainable Packaging Coalition](#)

[Sustainable Supply Chain Initiative](#)

[BEVH](#)

If you are looking for organizations working specifically on national territory, you can find national commerce federations [here](#).





## Play your part in developing sharing economy

- ▶ The sharing economy can play a decisive role in using resources more responsibly and utilizing a products' life effectively. Whether it is a car that is parked roughly 95% of the time or 30bn pounds worth of unused clothes hanging in wardrobes, many products we use are not consumed to their full potential.

The lowest emissions are caused by expanding the life of an existing product. Therefore, the business perspective can focus on a “product as a service”, which means that, instead of selling a product, you can rent it out and charge a subscription fee. As a retailer, this would mean selling services or build a platform to share products and allow customers to track or switch their products accordingly. On the same note, it might be worth looking into the inclusion of pre-used products and opening a second-hand marketplace.



**Report:** [Case study-Swapfiets](#)



**Study:** To learn more about sharing economy - [PWC study](#).



**Study:** Sustainability potential of sharing economy - [Research gate](#)

## Do not discard B-quality products

- ▶ One of the areas for improvement for many companies is to minimize the amount of discarded goods. Those can be with dead stock, damaged packaging, produced in the wrong color, with a close expire date, returns, etc. When you put returned products back on the market, this doesn't only prolong the life of the product, avoids disposal emissions, but also prevents production emissions of a new product.



### Example 1:

Zalando is in compliance with the Circular Economy Law (KrWG) when it comes to their return process. Across all Zalando stores, the return rate is, on average, 50%. With close to zero items destroyed, 97% of these returned articles are sold again via the Zalando Shop after appropriate checks and careful restoration. Items that are no longer offered on the Zalando website, are then offered via Zalando Lounge, while articles with minor defects are also sold in Zalando Outlets. Additionally, Zalando donates remaining stock to organizations such as Humedica.

### Example 2:

myMüsli's Food Saver site sells products that have shorter expiration dates, that are out of season, that have slightly damaged packaging, or that were returned without them actually reaching the customer. This is of course quality checked by experts before being resold (in alignment with EU regulations).



**Tool:** Warehouse Management Tool to synchronize the information on returns

## Make your website greener




Internet data are expected to consume 20% of the world's energy by 2050 (Source). If you operate as a marketplace and do not produce your own products, your website can represent a significant part of your carbon footprint on Scope 1 and 2.





For example, data centers represent 70% of Etsy's energy footprint. This led the company to switch operations to 100% renewables in 2020.

There are many ways to minimize your website's CO2 footprint, here are some examples:

- **Switch to green web hosting services.** Check the list of hosting companies that provide proof of their green claims,


- 
- **Choose carbon-neutral cloud providers.** If you rely on a cloud provider to run your digital infrastructure, make sure that their services are powered by renewable energies. From the 3 biggest providers (AWS, Microsoft, Google), only Google operates on 100% renewable energy. You can check their [sustainability report](#) to learn more about their strategy. If you have your own servers, make sure that you only run them on renewable energy.
  - **Share green coding principles** with your CTO and developer team to make your digital product more energy and carbon-efficient,
  - **Optimize images** with tools such as [TinyPNG](#),
  - **Avoid videos when possible**, and when you use them opt for lower resolution and don't set them on autoplay, etc.


For additional guidelines and ideas, you can check the tools below.


-  **Tool:** [Calculate the footprint of your website](#)
-  **Overview:** [Sustainability ranking of e-commerce websites](#) (Greenpeace)
-  **Guidelines:** [3 ways to make your website more eco-friendly](#)
-  **Service:** [Green Web Foundation](#), audit and training to lower the emission of your website.


## Prioritize political engagement

- ▶ Corporate Political Responsibility (CPR) is just as crucial as Corporate Social Responsibility (CSR) and inattention to the political world can ruin companies' reputation and business, as noted by [Corporate Political Responsibility Taskforce](#) of the University of Michigan.
- ▶ According to [research](#), industries are heavily getting involved in climate policies, following two main trends: one that advocates for effective climate action and innovation and one that pulls to stick to the status quo of a fossil fuel-based economy. This makes your contribution even more relevant to tip the scale in favour of real climate action.

- 
- Bold climate policy can be achieved through collaboration between governments and companies, in what has been defined as the Ambition Loop, where climate efforts of both politicians and businesses feed into each other.

 **Inspiration:** the HVB suggests policy areas that could be the focus of your policy action

 **Resources, Network, Training:** the UN Global Compact website offers you a platform to start shaping your political action

 **Coalition:** We Mean Business Coalition



# Appendix:

## Alternative packaging material overview

### Paper

Paper is *per se* a non-pollutant and recyclable material. However, it still has an enormous impact on the environment, especially when not sustainably produced. The paper industry is the 4th largest energy user worldwide, the production of paper involves a huge water consumption rate, and it is also one of the main contributors of deforestation processes. Wood-based paper should always be under the FSC label (even better, the FSC-recycled label). If possible, it is always better to opt for recycled paper, CO2 neutral paper, or paper produced with materials other than wood - one example is [PaperWise](#), a company that produces paper from agricultural waste. **Sources:** [Energy use in the paper industry](#), [Paper Calculator 4.0](#); [Pulp and Paper | Industries](#) | [WWF, FAQ on the FSC label](#).

### Wood

As for paper, wood is a non-pollutant and recyclable material and therefore is generally preferable to plastic. However, the deforestation crisis the world is currently facing should lead us to exclude non-sustainable wood. It is important to know the source of the wood or to what specific variety it belongs to. Among several options, bamboo is widely recognized as the better sustainable alternative.

### Bamboo

Bamboo is the fastest growing plant on the planet, which makes it a highly renewable source for wood, paper, and textile. It is a material that highly benefits local communities and its properties make it a durable, efficient, and more sustainable material in many domains, from buildings to food packaging. **Sources:** [NSpackaging](#)

### Sugarcane

Sugarcane fiber (or bagasse) is made with the fibers from sugarcane stalks that are usually discarded or incinerated once the juice is extracted. This material can biodegrade on its own within 30 to 90 days and, in commercial composting facilities, it can break down even faster, in a maximum of 60 days. When composted, this material turns into a nutrient-rich fertilizer of nitrogen, potassium, phosphorus, and calcium.

A company that has adopted this resource is [Just Water](#), which features sugarcane-made bottle lids. **Sources:** [NSpackaging](#), [Just Water](#)



# Appendix: Material Overview

## Seaweed

Packaging made of seaweed is completely biodegradable (time: four to six weeks), not harmful to the environment, and edible. It is used mostly for liquids and sauces, but it can be adapted to many uses.

An example of this is [NoPla](#) packaging. **Sources:** [NSpackaging](#), [NoPla](#)

## rPET (recycled plastic)

PET plastic can be recycled into rPET for reusing. Higher demand on purchasing this material encourages the market to collect and recycle more and prevents single-use plastic items from ending up in landfills. The drawback of this material is that plastic, and PET specifically, can be recycled only once and the result is a lower quality material. It is therefore always better to support the economy to move more towards materials with wider recycling possibilities. **Source:** [Forbes](#)

## PLA (biobased plastic)

PLA is a polymer (plastic) made out of renewable material, both biobased and biodegradable. This resin is produced using corn kernels through a process that uses 65% less energy than more common kinds of plastic like PET. Not only the material used for the production is renewable, but PLA is in theory is compostable with a complete decomposition process in less than 90 days. The drawback of the product is that the decomposition process needs to take place in "a controlled composting environment", which means that industrial compost facilities are not available in every country. Even if PLA meets the requirements for the European Standards regarding packaging (EN13432) and can be theoretically thrown in the compost bin, it is still advised to contact the municipality to be sure of it. **Sources:**

[Royte, E. \(2006\), Smithsonian Magazine](#); [Ebnesajjad, S. \(2013\). Oxford. European Bioplastics,\(2018\). Bioplastic Materials](#); [European Parliament,\(2018, 12 19\). Plastic waste](#) ;[OVAM. \(2015\). Hoe kunnen we bioplastics composteren?](#)

## Mushrooms

A good alternative to styrofoam, mushroom packaging is a 100% biodegradable and renewable material that can be recycled directly in nature. As in the case of sugarcane, mushroom packaging is made by mixing fungus sprouts with agricultural residues, which is why it is considered an "up-cycling" material that provides new value to agricultural waste.

Upcycling refers to recycling the materials to produce a product with equal or better quality and application.

Recently, [IKEA](#) started substituting styrofoam with this packaging. **Sources:** [NSpackaging](#), [Sustainabilityguide.eu](#)



## We'd love to hear from you

Let us know how you get on with your projects - we'd love to hear about your journey and bring the community together.

Together, our goal is to create a new, industry-wide norm, where companies do not stop at climate neutrality via compensation, but do everything in their power to contribute collectively to global carbon neutrality.

If your company already has implemented some sustainable solutions - especially ones that are not mentioned in our guide - or you want to mentor other companies in doing the same, reach out to us to grow your network and become a partner in our community.

If you want to start taking your first action, LFCA is here to support you and accelerate your transition toward a more sustainable and more resilient future.

So that we can provide the best-fitting knowledge, actions, and case studies, we are happy to receive your feedback via **[anna@ifca.earth](mailto:anna@ifca.earth)**.



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