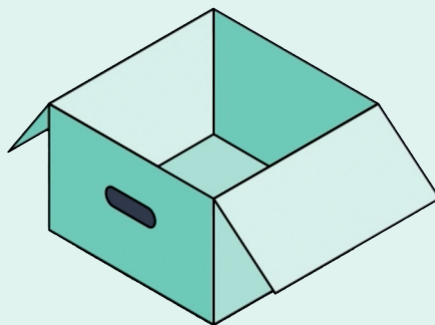


# TOWARDS A MORE SUSTAINABLE E-COMMERCE SUPPLY CHAIN

Best Practices and Tips From E-Commerce Experts  
and Direct-to-Consumer Brands



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# FOREWORD

## Achieving a more sustainable supply chain by turning challenges into opportunities

The claim that 2021 was a key year for the development of global e-commerce has become a truism. It is undeniable that the market has grown with the influx of new-to-online customers and existing trends have accelerated.

Of course, much has been written about the impact of the COVID-19 pandemic. On one hand, the existence of very long and articulated supply chains put on display its criticalities such as delays and shortages. On the other hand, the expansion of digital marketplaces into all facets of life has been a catalyst for businesses to reevaluate expectations and practices, especially in regard to customer behavior. For instance, [85%](#) of people indicate that they have shifted their purchase behavior towards being more sustainable in the past 5 years.

The behaviors emerging over the last two years have forced a remarkable digital shift for brands and supply chain experts due to an exponential increase in online sales. While it may sound both challenging and exciting business-wise, the general observation is that it led to an increased negative impact on the environment.

The widespread realization of the impact of the globalized supply chain on the environment, certified by numerous studies, has led to sustainability becoming a hot topic. With ever more consumers willing to change their purchasing habits to reduce their carbon footprint, e-commerce companies have given increasing attention to their eco-friendly self-representation.

Without any attempt at suggesting a comprehensive blueprint for a fully sustainable e-commerce logistics setup, our aim is to outline the context of the current challenges and provide a concise guide on moving towards a more sustainable model.

**To that end, we will propose along with our logistic partners an array of practical solutions:**

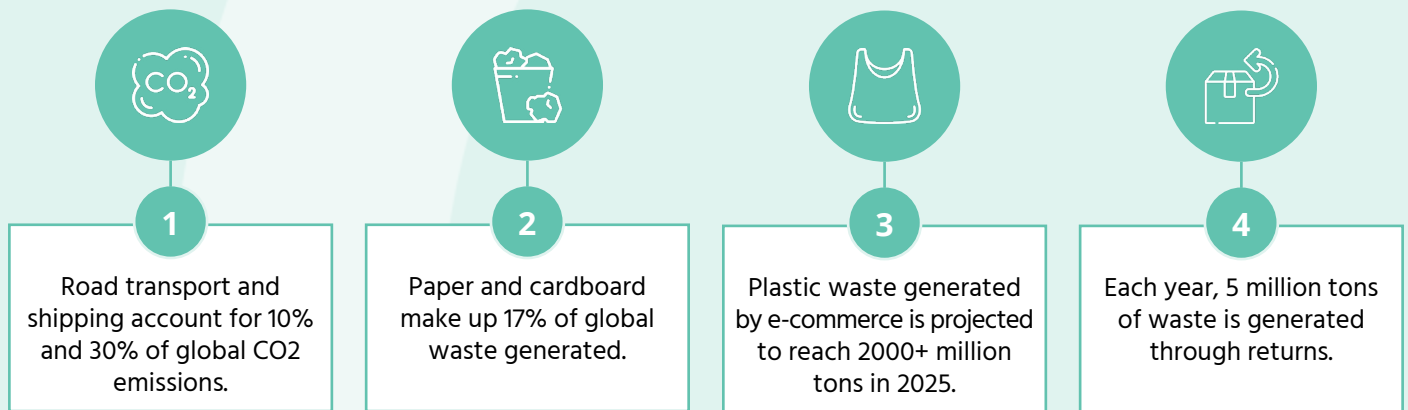
- **Karl Dischinger**, a business with almost bicentennial ex-

perience operating in the German logistics sector, presents innovations that reduce the energy demand of their fulfillment warehouses, such as their alternate use of photovoltaic panels or green insulation.

- Custom-packaging specialists **Packhelp** deconstruct sustainable packaging, from the materials to the manufacturing technology, and provide insights on EU-required certifications and design examples
- **Lizenzero**, the online shop solution for the German Packaging Law, has been set up by Interseroh+, the leading provider of take-back and recycling services. Lizenzero clarifies current environmental legislation. Besides hands-on guidance for packaging licensing in Germany, their presentation includes national transpositions of the EU Directive on Packaging and Packaging Waste and the EU Waste Management Law as well as a compliance case study.
- **7Senders** share the efficiency achievements that lead to their more sustainable last-mile delivery. In addition, they propose both direct and indirect ways to offset the essential carbon emissions and meet their ambitious CO2 neutrality targets.
- In addition to coordinating the overall research, **byrd** outlines the characteristics of sustainable fulfillment networks in a 3PL framework. The experiences gained through connecting leading partners inform products and services, ensuring consistent standards of environmentally efficient practices.
- Known for their biological products, **Primoza** reflects on sustainable e-commerce from a branding perspective, and the role changing customer behavior has played in their company growth.

While we are aware that a fully sustainable e-commerce model will require the contribution of all, we believe that online businesses will have a fundamental role to play. However incremental, solutions like the ones presented in this e-book can help logistics operators meet the challenges of a historical trend whose relevance is only bound to further increase.

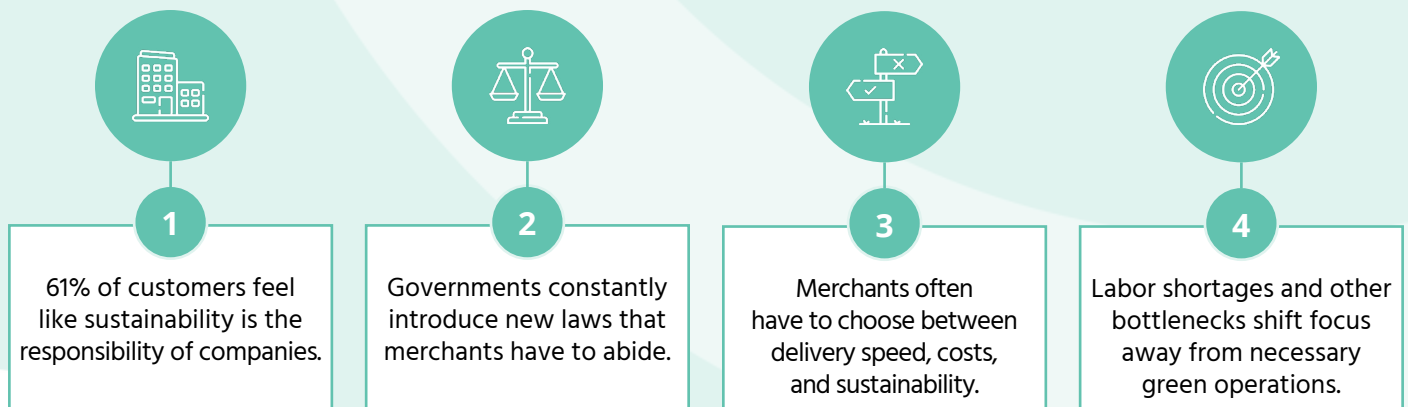
## The Problem



### The problem of sustainable of supply chain

The fast pace experienced by e-commerce throughout the previous years has been received as great news by online merchants. However, that also comes with added responsibility for those selling online. This is particularly true in terms of operating in a more environmentally friendly way as e-commerce is also contributing significantly to global emissions.

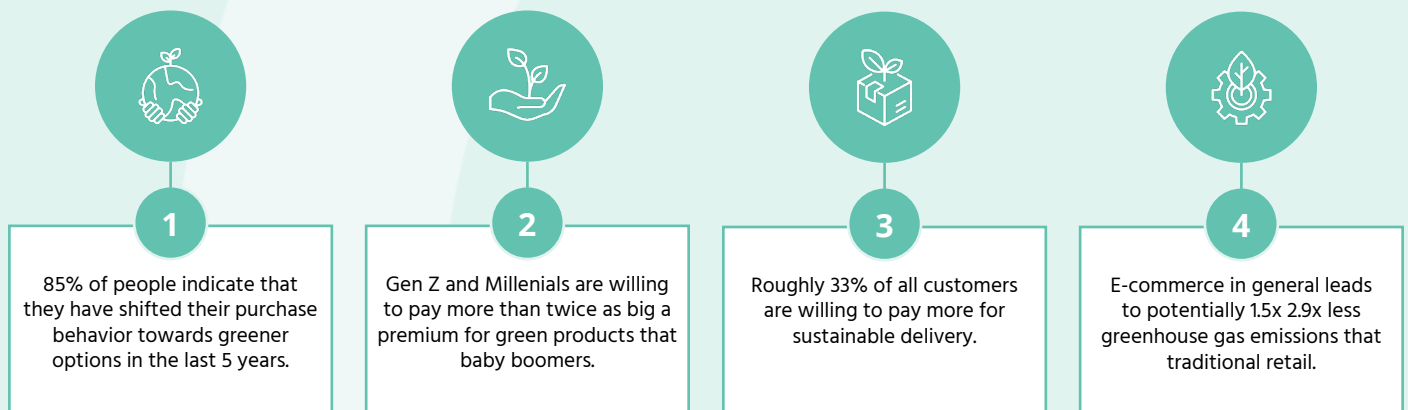
## The Challenge



### The challenge of sustainable supply chain

Since 2020, global e-commerce, and in the wake of it the supply chain, has experienced increased complexity and new challenges. While on the one hand the pandemic, material and production bottlenecks, a limited shipping capacity, and labor shortages hamper e-commerce operations, customer demand for fast and cheap delivery is constantly increasing. As a consequence, many merchants opt for delivery methods that are more harmful to the environment.

# The Opportunity

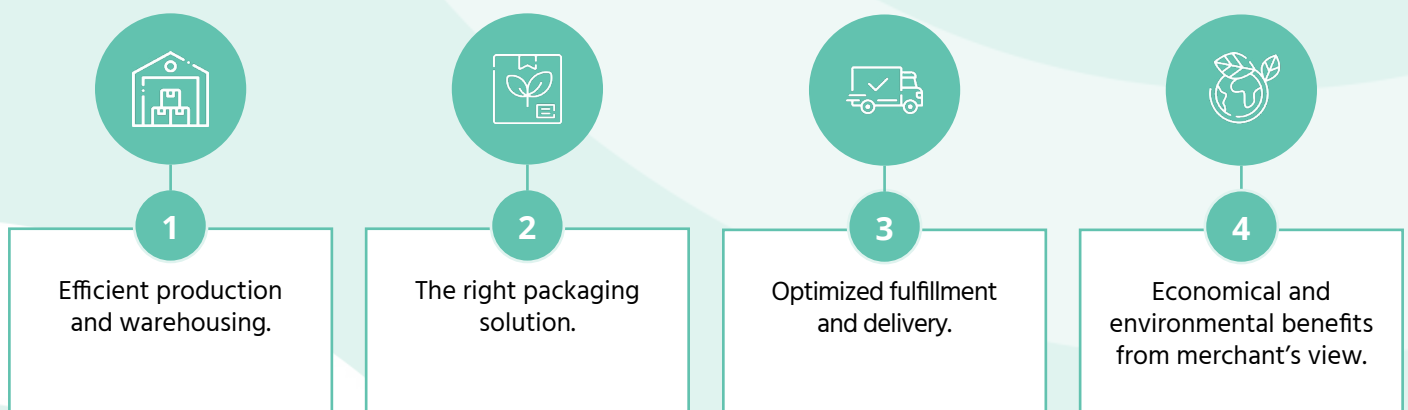


## The opportunity of sustainable of supply chain

Now the good news is, there are a lot of opportunities to benefit from the transformations in the industry. This is particularly true, as customer attitudes and behavior are changing too. While the quality and price of your product are still key, another variable is gaining importance - sustainable operations.

In fact, sustainability has been becoming a vital selling point in e-commerce. Delivery, which is a decisive factor for the customer experience, today, has three main components - fast delivery, cheap delivery, and sustainable delivery.

# The Solution



## The solution of sustainable supply chain

While e-commerce still (rightfully) has a bad reputation in terms of polluting the environment, there is a lot of potential for more sustainable operations along the whole supply chain. In fact, if done right, e-commerce has the potential to be a greener solution than is traditional retail. While there are big levers that can mainly be tackled by governments or e-commerce top dogs like Amazon, there are plenty of actions that can be taken by e-commerce companies of any size. The best thing about it is that while it helps to decrease harm to the environment, it will increase customer loyalty, customer experience, and the willingness to buy (and sometimes pay more for) your products. This e-book will provide you with real-life examples of how this can be done along the entire supply chain.

# CHAPTER 1

## How to make your fulfillment warehouse more energy-efficient and sustainable?

As a fulfillment provider or owner of a logistics center, you have different options of making your operations more sustainable which does not only have a positive impact on the environment but also on your business. Moreover, as an e-commerce business, you might want to make the right choice when outsourcing your e-commerce fulfillment to a Third Party Logistics Provider. In this chapter, we, the Karl Dischinger Group, a fulfillment partner of byrd, will show what can be done in this respect and give some hands-on tips and best practices to optimize your sustainable e-commerce operations.

### **Karl Dischinger Group's journey to climate-neutrality**

As a family-business that completed its first logistics services in 1470, we have put sustainability as a top priority already for several years now. In fact, we had E-Trucks already in 1996 with the aim to reduce CO2 emissions as well as reducing the noise pollution for the residents in the city of Freiburg. Since the electric vehicle was very quiet, this enabled us to realize transports within the city in the early morning hours and at night without disturbing anyone and decreasing the noise pollution.

Our goal is to achieve carbon-neutrality within the next few years before 2030. In order to better manage the process and progress, we have implemented an environmental management system with regular internal audits which will help us to achieve our environmental goals. Those goals consist of two major components: reducing the usage of natural resources and minimizing our CO2 footprint. According to our philosophy, this topic is relevant for the company as a whole. This is why we also make sure that our employees are aware of all aspects of environmental protection by regularly organizing training sessions on topics such as waste disposal, waste separation, and recycling.

### **Reducing energy consumption & enforcing green energy**

For over 20 years our roofs have been equipped with solar panels in order to generate green energy for our warehouses.

At the moment we have an area of over 2,500m<sup>2</sup> that is being used in order to generate solar energy. We plan to continuously roll out and install panels on as many warehouses as possible. Of course, the permitted roof load and the solar coverage need to be taken into account for this. If the installation of a photovoltaic system is not possible, we grow plants on the roofs.

By greening the walls of warehouses and other buildings you can help save energy. In fact, we have started doing this in order to regulate the building's temperature and to improve insulation.

The entire lighting of the warehouses and office areas is gradually being converted to energy-saving LEDs. Those require way less energy compared to traditional light bulbs. In addition to that, we have implemented motion detectors that will only turn on the light when really needed.

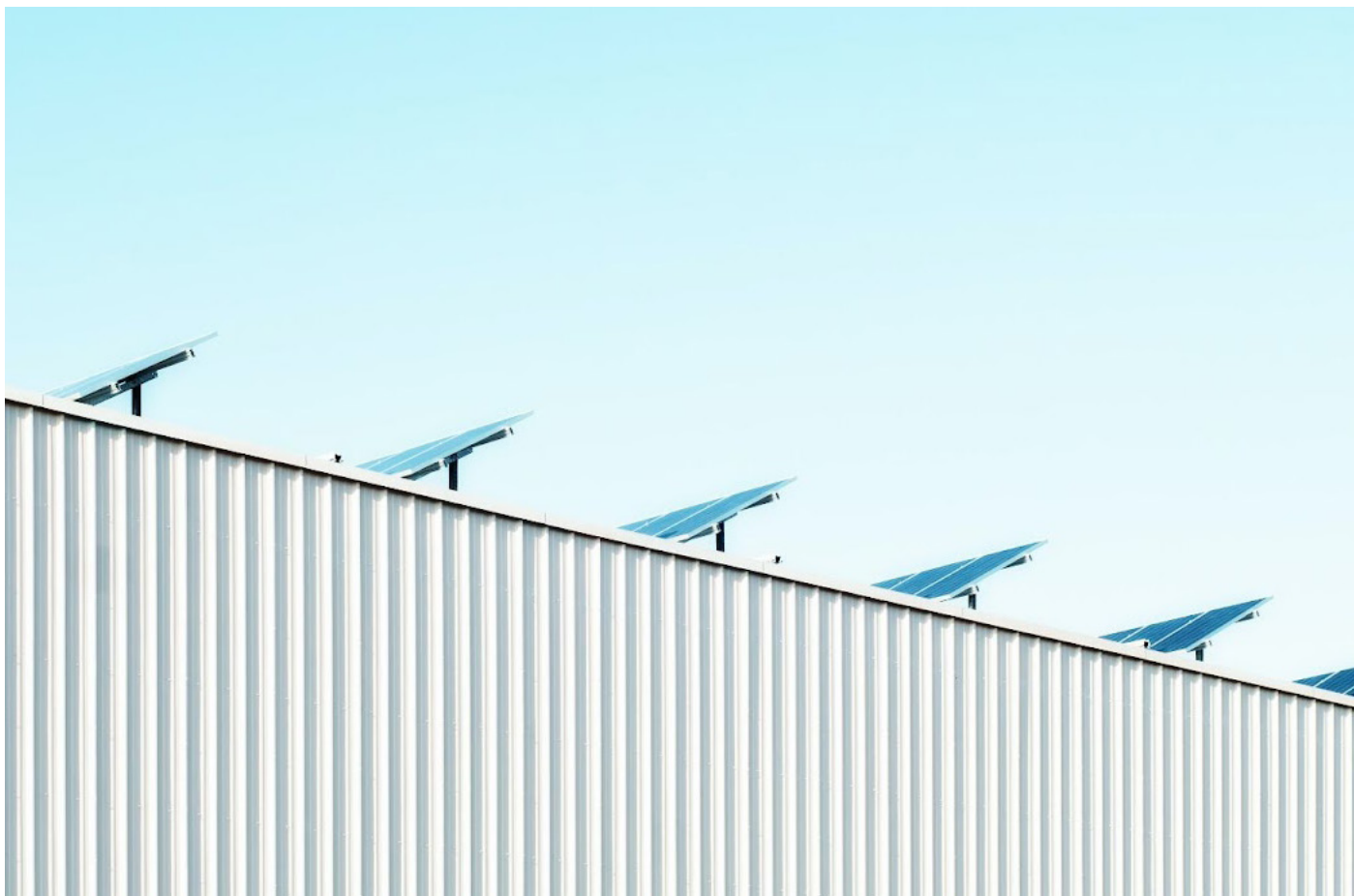
Last but not least, in our warehouse network, all our industrial trucks, such as fork-lift trucks, that we are using have been converted to lithium-ion batteries.

### **Avoiding CO2 emissions**

Part of the strategy is to reduce our CO2 footprint. For that reason, in 2020, we calculated how many tons of CO2 we are emitting in order to be in a position to adjust our strategies and plan to become carbon neutral.

The vehicles we're using are equipped with modern technology in order to reduce pollutant emissions and we teach our drivers to drive fuel efficiently. With these measures, we have achieved a reduction of 500t CO2 per year by 2020 compared to 2012.

Moreover, the digitization of processes with regard to transportation helps us to optimize our routes. As a consequence, this enables us to reduce or avoid empty runs reducing the number of truck drives we need to make within our logistics network.



## **Waste management**

The storage and fulfillment of food products as known entail a lot of challenges. One of them is the disposal of products in case of damage, refusal of acceptance, or any other reasons. Now the question is: How to dispose of food products in an eco-friendly and sensible way? We want to do this resource-saving disposal via a local biogas plant which will help to create additional energy in a smart way.

One of the best ways to reduce paper consumption and waste was the implementation of digitized processes in the warehouse. A few years ago, all processes were based on excel spreadsheets that had to be printed and then thrown away. Fortunately, now with scanners and digitized processes, this has been improved significantly.

## **Packaging material**

In logistics and e-commerce fulfillment, the packaging material is one of the most critical aspects in order to act more sustainably. You will learn more about this in Chapter 3. As a consequence, we also take this issue very seriously and have adapted our processes accordingly. All our filling material (with a few exceptions due to safety standards) is made of recycled paper. Moreover, we refrain from using plastics such as bubble wrap or styrofoam. Most importantly though, we are aware of the fact that there is always room for im-

provement. This is why we are constantly on the lookout for other suitable natural alternatives for the packaging material we use. At Karl Dischinger, we use smart cardboard boxes, where the bottom closes by itself when being folded. Also, the cardboard boxes can be individually adjusted to the size of the goods. This flexible system allows us to reduce the use of adhesive tape, as gluing is only necessary for the upper area of the parcel, and at the same time facilitates recycling. Furthermore, this approach enables us to save space during transport, reducing the amount of filling material needed and therefore saving CO2 emissions and waste.

In general, we try to use cardboard boxes that contain an integrated adhesive strip, thus avoiding the use of adhesive tape altogether. However, if the use of adhesive tape is unavoidable, we will rely on PVC-free tape. One of the main reasons behind it is that recycling PVC implies more elaborate processes, mainly mechanical and chemical ones.

As you can see, there are many different possibilities on how to improve the sustainability of your supply chain, and it's often the little things that make a difference. In general, we think that the mindset for environmentally-conscious business is something that has to be part of the company values so that every employee is encouraged to come up with creative ideas and help you on the journey toward more sustainable e-commerce.



# CHAPTER 2

## Making your order packaging material more sustainable

Consumer sentiment towards sustainability and conservation has become more widespread in recent years. Today, it is urgent for a business to go beyond the classic green leaf printed on labels. Truly sustainable packaging is more than plain cardboard responsibly sourced from FSC® certified forests. It all comes down to the buyer's attitude, both vendor and consumers, and creating best practices around packaging use.

Deconstructing sustainable packaging takes more than addressing raw materials and marketing communication.



### Creating sustainable packaging design: addressing the main criticalities

**1)** The materials used in the manufacture of the packaging product a) can be mass-produced without depleting non-renewable resources, b) all materials used in the manufacture of the packaging tick the 3R criteria (reduce-reuse-recycle), and c) adding foils, inserts, and extras to the packaging will lower the sustainability index for the said product unless taken separately. **Pro tip:** [Learn about the eco-properties of packaging.](#)

**2)** The place of provenance of the raw materials aspect requires the a) prime matter comes from sustainable environments such as forests under the FSC® certification, b) the raw materials are chosen following local legislation, and c) the sourcing of these materials doesn't harm the livelihood of the local

population nor does affect the regional flora and fauna. **Pro tip:** [Work with FSC® certified suppliers.](#)

**3)** Use of sustainable packaging technologies means that a) sustainable packaging technologies focus on creating solutions for transitioning from plastic to paper, from composites to mono-materials, b) businesses invest in developing eco-aware equipment and collaborating with packaging companies that use them, c) which can be anything from integrated packaging systems to secondary packaging machines. And lastly, d) these technologies are more than automated types of machinery and involve the adjacent materials involved (water, ink, etc.), staff training, and recycling practices. **Pro tip:** Invest in [value engineered packaging](#) design to limit waste and increase the efficiency of your fulfillment process.

**4)** When it comes to addressing the logistics, especially packaging transport and storage, a) operations are put in place to reduce the carbon footprint, noise pollution and accidents, b) less frequent transport cuts the shipping costs of fuel consumption and eliminates dead mileage, and c) adopting a warehouse management system allows storage facilities to be built to sustain volumes without shipping.

**5)** The product is part of a circular economy, meaning a) the packaging design is based on four principles: it is not wasteful, not a polluter, it's kept in use, and prioritizes regenerating the natural element, b) the lifespan of the packaging product is key in being part of a circular economy, c) the packaging product prioritizes enduring materials over single-use feeble cardboard, and d) the plant trees with your orders schemes help replenish the prime materials used to manufacture packaging products.

**6)** Packaging is not a greenwashing enabler and this criterion requires transparent communication via packaging, meaning that a) the packaging displays [eco badges](#) and icons correctly, b) physical and digital elements don't mislead the consumer on the ecological properties of the packaging. For example, simple-looking kraft cardboard loses its recyclability properties when paired with a plastic



foil. **Pro tip:** [Invest in marketing your packaging and create an eco-friendly brand statement.](#)

## Packaging corporate sustainability communication

When it comes to corporate sustainability, we need to be very good at doing our homework. And the most critical imperative is to have the proper conversation. Our benchmark on sustainable packaging is Packhelp, a sustainability pioneer that inspired and continues to inspire companies to take a step in the right direction when it comes to packaging.

The idea that you can buy sustainability and consume your way out of the problem is a marketing discourse when it has its roots in consumption. By firstly addressing packaging consumption, we are one step closer to creating awareness.

In this light, the packaging is the quintessential element that needs to be addressed urgently. The good news is that today we have all the tools and information to do this right, and why not, create a sustainable brand statement.

As a vendor, you are in complete control, and it's up to you to connect your market to all the information regarding the sustainable elements of your brand. Using sustainable packaging makes you a step closer to achieving your targets and creating a loyal customer base.

**What are the most visible design elements that communicate your sustainable values on your packaging?**



- Your choice in raw materials (e.g. kraft over colored cardboard)
- Water-based ink
- Eco-badges
- Eco-properties
- QR codes with detailed information about the packaging
- Engaging, call to action copy and slogans
- Minimalistic graphic elements
- Visible partnerships with other eco-friendly brands

**If you're considering switching to eco-packaging, here are three fully sustainable packaging designs to get you started:**

### 1) Mailer boxes

- Made with corrugated cardboard, produced from at least 60% recycled content.
- The material is FSC® certified => the paper pulp has been sourced from responsibly managed forests and mills.
- Flexographic printing with water-based ink.

#### Common Eco-Properties:

- Biodegradable material
- Industrially compostable
- Plastic-free
- FSC certified
- Made in Europe
- Recyclable



## 2) Bio Mailing Bags

- Made from natural materials such as foil made from starch-based resin.
- Glued with special adhesive strips that break down into compost.
- Flexographic printing with water-based ink

### Common Eco-Properties:

- Biodegradable material
- Industrially compostable
- Plastic-free
- Reusable
- Made in Europe
- Recyclable

## 3) Packaging accessories

- Made from certified materials such as FSC®, OEKO-TEX® certified organic cotton, or recycled textiles backed by the Recycled Claim Standard (RCS).
- Glued with a special adhesive that breaks down into compost.
- Printing with phthalate-free paints and water-based ink.

### Common Eco-Properties:

- Recycled content
- Industrially compostable
- Plastic-free
- FSC certified
- Made in Europe
- Recyclable





# CHAPTER 3

## Complying with legislation and contributing to packaging recycling

While the online shopping boom shows no sign of slowing down, it is also generating a huge volume of packaging that then ends up being disposed of by private households. This problem can be magnified even further if online retailers do not play their part in helping to establish an efficient circular economy.

Within the EU, each country, therefore, has corresponding national regulations for handling packaging.

These regulations are national transpositions of the EU Directive on Packaging and Packaging Waste and the EU Waste Management Law, which aim to reduce the environmental impact of packaging waste and ensure the responsible utilization of resources. This legislation is based on the “extended producer responsibility” (EPR) principle, which applies to merchants who place packaged goods on the market and not only encompasses the product itself but also the packaging thereby distributed, which typically ends up as waste at the final consumer, who must then dispose of it.

In Germany, this led to the adoption of the [German Packaging Act](#) (VerpackG), which became law in 2019. This article looks at the following questions:

- What legal requirements must you fulfill if you ship packaged goods to Germany?
- What are the processes used to dispose of and recycle the packaging waste generated?
- How can you avoid the typical pitfalls involved in legal compliance?
- How do laws and regulations differ in other EU countries?

While the various laws and regulations might seem to involve a lot of red tapes, the sustainability targets they aim to achieve are anything but unnecessary. As one example, the German Packaging Act sets binding recycling targets for packaging waste that rise significantly year on year and aims to ensure that

increasing quantities of raw materials stay in the loop, where they can be used again and again. This actively cuts down on the resource usage and greenhouse gas emissions that would be involved in manufacturing new materials: a major and very effective contribution to combating climate change. When you comply with your Packaging Act duties, you are not only fulfilling your responsibilities as a producer and protecting your business from unwelcome sanctions but, above all, directly helping to create a functional circular economy and so protect the environment.

### **The Packaging Act: the first step in a functional closed-loop economy in Germany**

This case study based on the German Packaging Act illustrates the aspects you need to bear in mind when you sell packaged goods to private consumers in Germany. You are affected if you are an initial distributor of sales packaging in Germany. This means that you run a commercial operation and are the entity that imports, fills, or uses a third party (e.g. a fulfillment service provider) to fill packaging that is intended for sale to German consumers.

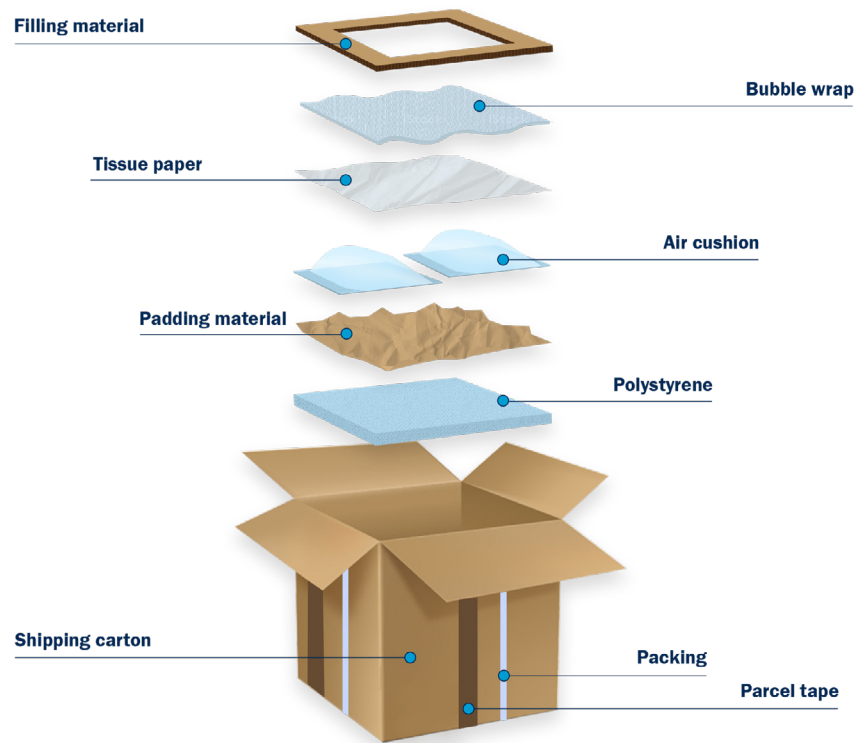
The generic term for all packaging that ends up in the hands of consumers in some way is ‘sales packaging’, including product, shipping, and service packaging. E-commerce businesses, in particular, must comply with regulations as a result of the shipping packaging (including filling materials) that they use in order to ensure that goods arrive safe and sound.

Apart from shipping packaging, if you are also the first entity to pack the products, you also place product packaging on the market, for which you are then responsible.

### **Complying with packaging requirements: the German Packaging Act example**

In short – you are affected if you a) run a commercial business, b) you import or fill packaging, or have it filled, and c) you distribute this packaging to consumers in Germany. In this case, you have three duties:

## Example shipping packaging: Which shipping materials must be licensed?



### Duty 1 – Licensing/system participation

Sales packaging must be registered to participate in a dual system (= 'licensed') and this applies from the first piece of packaging, regardless of its material. You can complete this packaging licensing by using online platforms operated by dual systems such as Lizenzero, the online shop from the dual system Interseroh+. This involves specifying the packaging quantities and materials that you estimate you will place on the market during the year.

Lizenzero offers a [Calculation Assistant](#) that can help you with any difficulties when converting your packaging quantities into kilograms. Your licensing fee is then calculated based on your stated packaging quantities.

#### Don't forget

As with the other two duties, the system participation requirement needs to be met first – i.e. you have to license your packaging before you place it on the market. The reference period for most dual systems is the calendar year. Since you obviously can't guess the exact amount of packaging that you will place on the market in any given year, the initial packaging quantity you declare is a forecast figure that can then be adjusted later on when you have more details from your sales.

### Duty 2 – Registration

You are also required to complete registration with the [LUCID register](#) maintained by the Central Agency Packaging Register ('ZSVR' for 'Zentrale Stelle Verpackungsregister'). The ZSVR is the central reporting office and regulatory body for the German Packaging Act. Once you are registered with LUCID, you will be issued with an individual registration number – which you also need to pass on to your dual system – and an account that you will use to report your data to LUCID (see 'Duty 3').

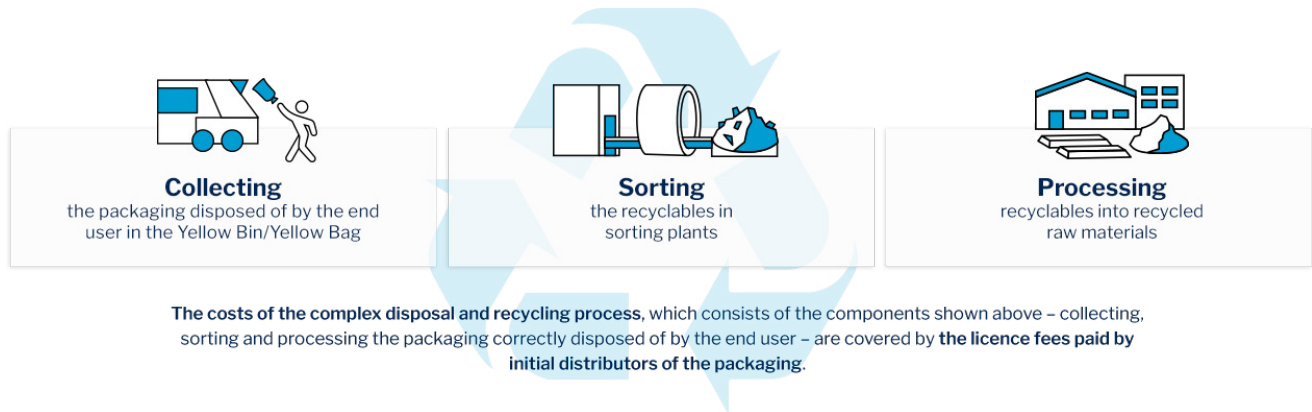
### Duty 3 – Data reporting

Lastly, you need to enter your licensed packaging quantities into your LUCID account and provide the name of your dual system. You need to make sure that the details provided to your dual system and to LUCID are identical.

**Explainer:** Dual systems organize the disposal and recycling/reuse of sales packaging. In Germany, the job of organizing the disposal and recycling/reuse of packaging waste is handled by a number of private-sector companies known as 'dual systems'. This in itself is a three-step process:

- Collecting the packaging waste that is disposed of by private households in the correct waste containers (bins)
- Sorting individual packaging materials into fractions in sorting plants
- Recycling materials

# How do **dual systems** use the **licence fees**?



The dual systems themselves are also legally required to provide the ZSVR with details of the packaging quantities licensed to them. These reports are used to calculate market share for the disposal and recycling process outlined above.

## What happens if I do not license my packaging with a dual system?

A failure to fulfill your duties is considered to be a regulatory infringement and risks the following:

- Written warnings
- Fines of up to EUR 200,000
- Or even a ban on sales



As an e-commerce business, you should therefore act quickly to understand your duties under the Packaging Act:

- [Quick checklist for online merchants](#)
- [Quick checklist for marketplace merchants](#)

## International merchants and importers are also affected

Duties imposed by the Packaging Act apply from the first piece of packaging that you place on the German market. The size of your business is irrelevant. The Packaging Act also applies to international merchants who ship to Germany. The same is for importers, whose responsibilities actually extend to all packaging imported into German territory. As is typical, these importers

actively bring the goods into Germany and are therefore responsible for the product at the point at which it crosses the border.

## You must license all of your packaging materials

All packaging materials must be licensed, without exception. While a distinction is made between the various packaging materials (paper, glass, plastics, etc.), this is only relevant for actually calculating the subsequent licensing fee.

Filling and padding materials are also counted as packaging materials in terms of mandatory dual system participation, as are packaging aids in shipping packaging – and even the product packaging label.

## Registration is a one-off duty – reporting is not

Reporting data to LUCID and your dual system is a duty that needs to be completed every year. So you need to repeat the reporting procedure for your planned quantities to both organizations (deadline: 31 December).

In the following year, you must complete your 'end-of-year volume report', in which you state the quantities you actually placed on the market last year (deadline: 15 May).

In addition, you should allow some time for these activities to avoid missing a submission date. Lizenzero also provides help to ensure you are aware of important deadlines.

## EU shipping: some background for e-commerce merchants

Every EU Member State must 'transpose' the provisions from EU packaging and waste legislation into their own national laws and regulations. As an example, we have what Germany has done with its Packaging Act. The same goes for France, starting in 2020, with the Circular Economy Law. You can find an overview of the different packaging laws in the EU [here](#).

In addition, the UK also has the new Plastic Packaging Tax which is targeting all non-recycled plastic packaging since April 2022.

As a result, the specific duties required of e-commerce merchants who sell products to the EU Member States will differ from country to country. While your to-do list might be short or non-existent in one country because of minimum

quantities or revenues, you might be obliged to fulfill detailed reporting duties in another. One additional challenge to overcome is the fact that information is often only available in the respective national language.



**manduca®**

Wickelkinder GmbH, a company that distributes Manduca-brand baby carriers and carry wraps throughout Europe, faced the daunting task of keeping tabs on the various national laws and regulations.

To save itself the trouble of tracking down the individual requirements in each country – and the respective licensing firms – Wickelkinder GmbH decided instead to use the handy guidelines provided by the [LIZENZERO.EU](#) platform. LIZENZERO.EU provides full details for each jurisdiction and offers respective guidelines for action.





# CHAPTER 4

## Challenges and prospects of a more sustainable last-mile delivery

Transport-related carbon emissions play a crucial role in logistics and online retail sustainability. Climate-neutral shipping allows e-tailers to contribute to climate protection and meet their customers' demands. Increasing shipping volumes, in particular, have made sustainable solutions and delivery concepts increasingly relevant.

What do online retailers have to consider when switching to sustainable delivery, and what challenges does this entail?

### Sustainable logistics

Environmental and climate protection have an ever-greater influence on politics and society. As a result, there is hardly any industry that is not concerned with sustainability. This issue is also gaining importance in logistics.

Climate-friendly logistics involves looking at a complex construct that applies to the whole supply chain and its different actors, including producers, manufacturers, and processes.

The challenge: according to a study by the World Economic Forum, logistics and transport currently cause more than 5.5 % of all carbon emissions worldwide, and this trend is on the rise. At the same time, the logistics chain offers numerous starting points for sustainable concepts and alternative solutions.

### Importance of the last mile

The last mile, in particular, is often the focus of sustainability, as this is where a considerable amount of climate-damaging carbon emissions are produced. The ongoing boom in online retail is also contributing to this. The increasing number of shipments means increased traffic, longer travel times, and fuel consumption. However, delivery to the end customer doesn't just emit a significant amount of CO<sub>2</sub>; it also offers excellent potential for savings within the supply chain. Dynamic route planning or the expansion of parcel stations are just two examples of the many options available when implementing environmentally and climate-friendly concepts for the last mile.

### Challenges for e-tailers

Sustainability is a crucial growth factor for companies, mainly as many customers are now rethinking whether fast and reliable shipping is still one of their most important criteria. According to the YouGov survey commissioned by Seven Senders, more and more customers are also prioritizing sustainability; 57% of the surveyed would be willing to pay more for sustainable delivery up to a certain amount, although delivery costs are the essential criterion for 55% of the respondents when choosing an online shop.

What does this mean for the e-commerce market? Delivering parcels to customers is no longer enough. If you want to remain competitive, you have to act sustainably. Many online retailers shy away from the topic because they consider it time-consuming and costly. However, this is a false statement because by switching to climate-neutral shipping, online retailers can quickly and efficiently meet customer requirements for more sustainability and, at the same time, secure a decisive competitive advantage.

### Prospects for e-tailers: climate-neutral shipping

E-tailers can make their shipping climate-neutral by implementing just a few comparatively inexpensive measures. But what exactly does climate-neutral mean?

In principle, [climate-neutral shipping](#) is when no carbon emissions are released along the entire supply chain. This would be the case, for example, with delivery by bicycle courier. However, an utterly CO<sub>2</sub>-free delivery route for online retailers is not feasible. The alternative is to offset later any carbon emissions that are released to restore climate neutrality. This requires calculating the carbon emissions of the entire supply chain. Climate-friendly projects or measures support balancing out the emissions produced by compensating for the CO<sub>2</sub> emitted and mathematically offsetting the input through the corresponding absorption to compensate for the carbon footprint produced. Online retailers have two





options: the direct way, which is planting trees to reduce CO<sub>2</sub>, or indirect compensation through promoting climate protection projects.

### Supporting your switch

If e-tailers decide to contribute to environmental and climate protection, they are not on their own when it comes to implementing climate-neutral shipping. Many providers offer a quick and smooth transition without affecting day-to-day operations.

With [7SGreen](#), Seven Senders, the leading delivery platform in Europe, provides a service that e-tailers can use to achieve their climate goals and meet customer demand for climate-neutral shipping. For just three cents per shipment, online retailers can achieve climate neutrality with 7SGreen. The costs apply to each country and each delivery.

The service works as follows: Seven Senders uses a self-developed and DEKRA-certified system to calculate the carbon emissions generated by the shipments. They are precisely offset by supporting certified climate protection projects from Climate Partner. When selecting the environmental projects, Seven Senders ensure that they are certified according to internationally recognized CDM standards (CER, CER Gold, or VER Gold) and sustainable development promotion, for example, by creating jobs and improving health care or technology transfer.

Further benefits of 7SGreen: online retailers can actively communicate their contribution to climate protection to their customers. In return, they receive annual certificates that give an overview of the emissions saved. They can also use the 7SGreen logo to highlight their commitment to greater sustainability.

#### Side notes

[DEKRA](#): an independent and internationally accredited organism that evaluates and delivers more than 23,000 certificates in diverse fields and verticals.

[CDM standards](#): Clean Development Mechanism (Certified Emission Reductions, Verified Emissions Reductions). These standards ensure the projects not only benefit the climate but also promote technology transfer and sustainable development in the project regions.

#### Other examples of sustainable delivery options:

Overall as a retailer, you have many different options to turn your deliveries towards being more sustainable, whether it's with climate-neutral shipping, pick-up deliveries, collaborative deliveries, click and collect, etc.

# CHAPTER 5

## Towards a more sustainable fulfillment network and process

The term [e-commerce fulfillment](#) or order fulfillment describes the entire physical processing of a customer's order, independent of the sale itself. It includes all associated processes – storage, picking, packing, shipping, and returns.

All in all, e-commerce fulfillment is about logistics and how the product will go from the company to the end customer throughout the different steps of the supply chain.

Along with this complete guide about sustainability and supply chain, this last part is about connecting the different stages, to build a more sustainable model for your company, and the environment.

### Building a sustainable network with 3PLs

As you have read, different solutions and alternatives exist along the different stages of order fulfillment. You can implement them in order to make your supply chain more sustainable. However, you might not have the financial resources and the partner network to do that. This is where e-commerce fulfillment companies such as 3PLs could help you.

#### Reminder:

Third-Party Logistics (3PL) service providers enable retailers to outsource elements of their distribution, warehousing, and fulfillment services. 3PL providers distribute warehousing and personnel costs among many customers, mainly online retailers, enabling them to better allocate storage and personnel capacities for the processing of orders.

For instance, logistics providers and experts have the network and offer services that can help you achieve your goal of being more sustainable as a brand, from your product to your shipping options.

### The benefits of having a fulfillment network and access to multi-warehousing

The location of your fulfillment center(s) is decisive in determining multiple key aspects of order fulfillment. All of these factors are influenced by the geographical proximity of your warehouse to your end customer. Shorter distances lead to:

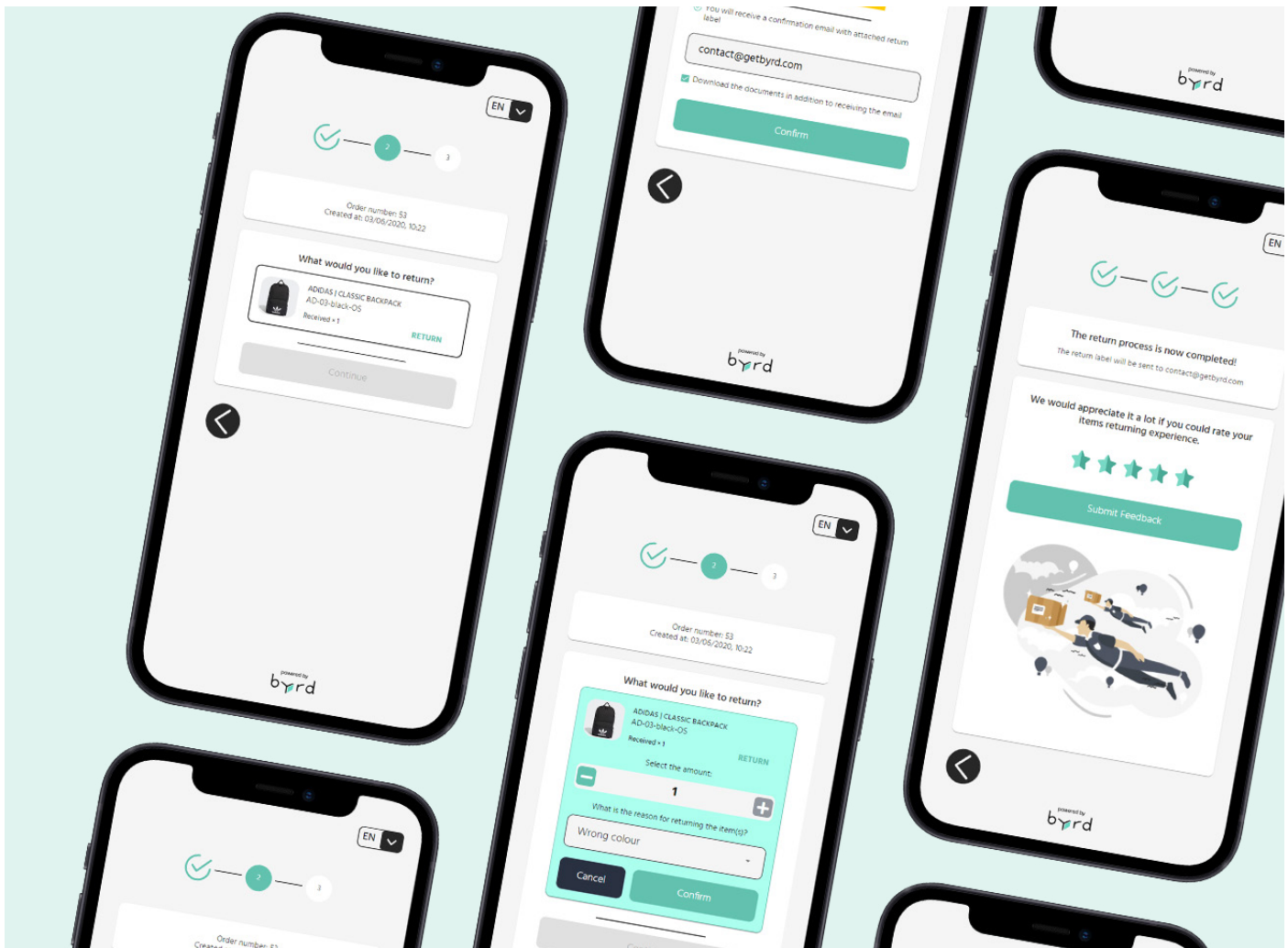
- Faster order delivery
- Cheaper shipping prices
- Fewer errors
- Environmentally friendlier shipping

Of course, from a business and expansion point of view, the location of your logistics center is decisive. Same for choosing whether you want to opt for a multi-warehouse strategy or not. The main benefits are cost savings, reduced delivery times, more flexibility and resilience, and getting closer to your customers.

That last point is quite significant in terms of sustainability. For long-distance deliveries, couriers often add intermediary steps such as compiling products of a certain area in so-called distribution centers. The longer distances that have to be covered also increase costs for fuel, labor, and it consequently leads to negative effects on the environment.

In an ideal world, production, fulfillment, and distribution would be gathered in the same geographical area to save the different energetic costs. However, with e-commerce and cross-border sales exploding, this sounds impossible. But what is possible to do is to build a fulfillment network that is sustainable enough to decrease our impact on the environment.

By (re)localizing warehouses and supply chains within the different markets, decentralizing stocks around the world, you reduce what costs more to the environment: last-mile delivery.



## Returns - a tremendous impact on the environment

In 2020, the total amount of returns in the retail sector reached [\\$635.6 billion](#) worldwide. This data point could reach a staggering amount of \$958 billion by the end of the decade. Apart from causing a problem in terms of organization and logistics processes for warehouses and retailers, this has a huge impact on the environment.

A French start-up specializing in calculating carbon footprints (Greenly) has calculated the cost of returning a product ordered on Amazon and delivered in France. In total, more than 1,500 kilometers were traveled for the product to return to the American giant's warehouse in Slovakia. The carbon footprint emitted reaches 500g of CO<sub>2</sub> for a truck road trip and 3kg for a plane air trip. Apply this to the 17 million products returned in France each year, or even to the 20% of products returned worldwide, and the bill becomes enormous for the environment.

Getting to the root of the problem by fixing issues that lead to returns is key for greener operations. For those returns that are unavoidable, optimizing the [reverse logistics](#) process goes a long way too.

## Labels, refurbishment, and restocking

In addition to the transport of returned products, there are more operational issues with an impact on the environment and sustainable practices. Such as the labels and packaging. The inclusion of return labels is an important factor, especially in terms of customer satisfaction. Since around half of the customers expect and need a return label when they make a purchase. Most of the time, retailers include them in the packages, which has an impact on the environment (consumption of paper, ink, etc.), especially if they are not used.

*30% of returns are due to the fact that the product is simply damaged or broken, and the customer is obliged to send it back.*

Packaging is also an important factor when it comes to returns. First, it protects the product during the transportation process, but it can also be used for the return itself. Here there is a lot of room for sustainable practices to prevent damage and make it reusable.

Finally, when the product is back at the warehouse after being returned, several questions are raised. What to do

with the product? Can it be sold again? If not, can we recycle it or find a second life and home for it? In coordination with your logistics setup or provider and your product team, these are some questions you can think of to make your brand even more sustainable with practices that go beyond providing a good to a customer. Nowadays, circular economy, recycling, and secondhand markets are becoming more and more powerful.

### What solutions can be found to limit this?

There are several solutions that you can put in place:

- Have a clear and precise returns policy and process to inform your customers of the different options they have and how to process the return
- Set up an automatic address validation tool to reduce the number of returns due to undeliverable packages
- Use an online returns management portal: to allow your customers to process their returns and reduce the amount of paper used with on-demand printable return labels
- Think of the recycling processes and new “sales” channels: donation, secondhand, etc.

Creating an order fulfillment setup demands a lot of investments, connections, and time if you do it by yourself. By now you have come to realize that having a perfectly sustainable supply chain will require a lot of time and effort.

By connecting with the right partners though and figuring out customized or optimized solutions, you will get one step closer to a more sustainable supply chain.

### The future of e-commerce lies in sustainable fulfillment!

At byrd, we are set to revolutionize the e-commerce fulfillment industry by leading the way with sustainable and carbon neutral practices.

Become one of the successful companies whose business we revolutionize with our fulfillment solutions and sustainable shipping options. [Get in touch with us](#) today and benefit from our state-of-the-art warehouse network with high industry standards!





# CHAPTER 6

## How to build a sustainable e-commerce brand - the case study of Primoza

The fairly recent changes within the e-commerce and logistics industry, alongside the switch in consumer behavior for more sustainable practices, have especially affected brands; how they advertise and sell their brand and products, but also how they make their production more sustainable.

After all, all businesses start with a product or a service.

### The roots of Primoza

The idea of a plantable wall calendar was born at the end of 2017 as part of a start-up competition at the University of Erlangen-Nürnberg. The idea was simple: how can we bring back nature and people together?

The students were bound and complemented with the idea of self-employment for a long time. For 3 months, and with only 5€, they produced and developed their product. Market studies showed that it was the first time a company adopted a strict and clear focus on sustainability. And not only that, it was also a model that educated people on environmental matters with sustainable products.

The students' business model won the competition and was clear: continue to advance the seed calendars. After a successful crowdfunding campaign, Primoza was able to sell the first seed calendars on various Christmas markets. Since then, calendars are no longer alone. Primoza launched plantable postcards, seed bags, seed paper, gardening kits, and more.



as products with an ecological and/or social bonus provided to consumers. But there is more than that behind it.

Primoza intends to provide a positive contribution to people, to nature, and to operate responsibly. That means giving people a smile with the products, bringing people closer to nature and sustainability, and producing in such a way that buying it makes you feel better about your place in the world.

Sustainable production should become standard and gradually anchor itself as the "right" way in the minds of companies and customers. A way in which profits are not made at the expense of the environment or at the expense of living beings.

There are then two dimensions when it comes to building a sustainable product:

- Sustainable product and production
- Sustainable brand and growth

### The role of sustainability in building a brand and products

Nowadays, the concept of "sustainable production" is already quite spread out around the world. Most of the time, consumers are familiar with and educated on that matter. However, there remains some kind of opposition between "normal" products and sustainable ones. The latter is seen



### What does it look like in practice at Primoza?

- Focus on high-quality ingredients, organic seeds, recycled paper, organic cardboards, CO2-neutral printing, etc.
- Local production and manufacturing: the majority in Germany (headquarters) and the rest in Europe
- Select and work with providers that also have sustainable practices
- Use fulfillment partners locally based to reduce distances, avoid high costs and benefit from their network
- Use sustainable delivery options (DHL Go Green) in order to reduce CO2 emissions
- Build long-term relationships with the different stakeholders

a competitive advantage because you are doing something that others have not decided to do. Customers and society in general value that. However, that comes with different challenges.

*Today, many people living in the city are increasingly moving away from nature. We want to make this distance smaller.*

### 1) Differentiation and awareness

At this point, you know that implementing a sustainable model in your business is a competitive advantage. Communication and making your customers aware of what you are doing in order to be more eco-friendly is key.

By using certifications and being transparent about your processes, you can make sure your customers know how sustainable you are or you are aiming to be.

### The challenges of sustainable production

In a trend accelerated by the pandemic years, consumers expect more and more companies to focus on sustainability. In general, we have realized our negative impact on the environment and that we need to change that for the next generations.

Being a sustainable (or more sustainable) brand is often seen as

### 2) Production and costs

It also implies many costs for your company and probably for the end customers. In the case of Primoza, the main challenge is production, especially finding the best producers and suppliers. By finding local producers with high standards, especially with natural and sustainable products, the German brand has managed to commercialize 99.99% plastic-free products, certified by various certifications (Demeter and Bio certificates).



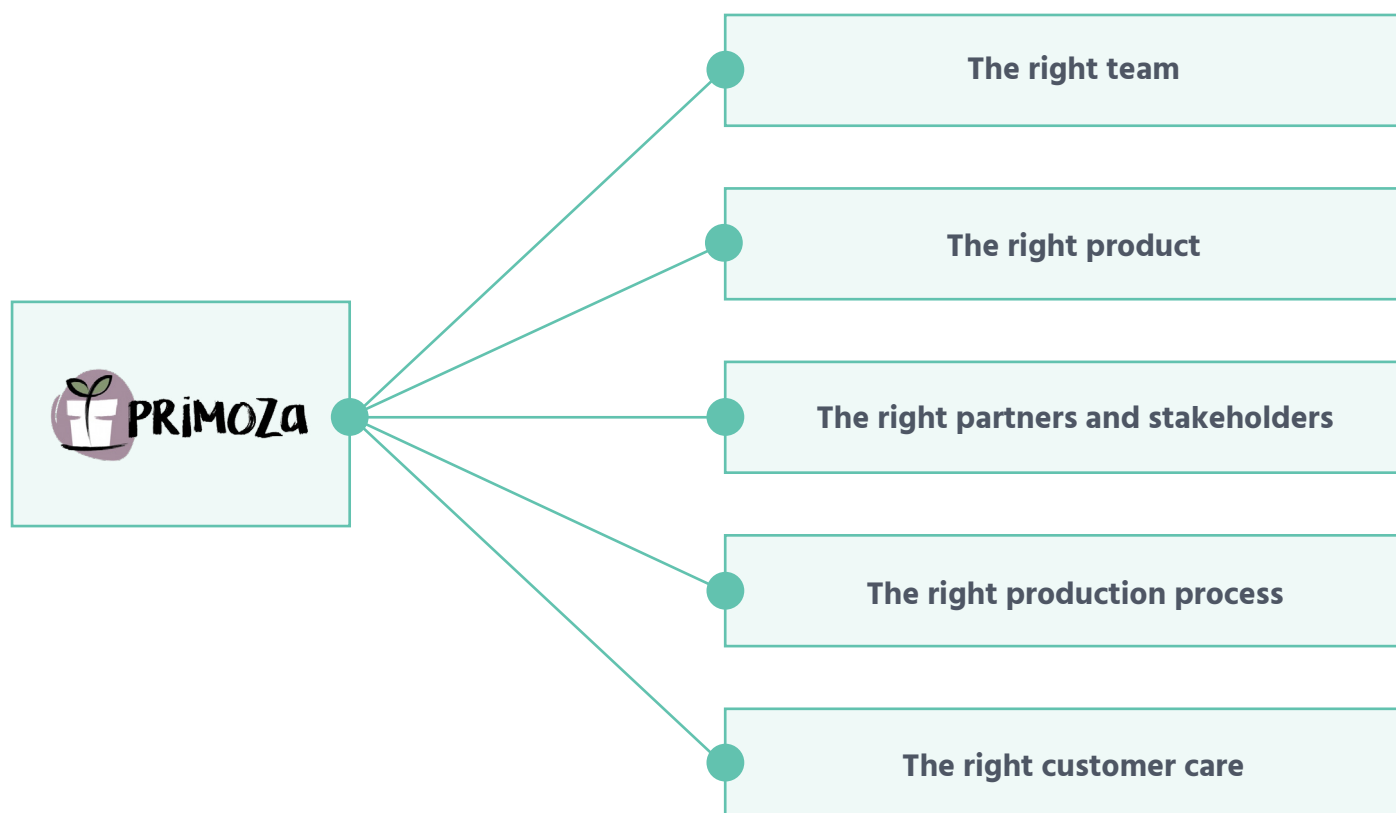
Focusing on high-quality products and materials that are complying with your sustainable requirements is still quite costly (at least more than a “regular” provider) because of the rarity and the production processes that are involved.

As customers are willing to pay more for eco-friendly products, ensuring high sustainability standards has become a sensible business decision, however, niche the demand may appear to be.

### 3) Sustainable sustainability

Sustainability is a bet, but not the kind of bet that you will lose. Like a never-ending story, you will always find room for improvement. A huge part of the work is product innovation. Once you have the right product, you can develop your supply chain around it. Customers are looking for sustainable options, and what will catch their attention is the journey and the message behind it.

*I Start with simple things and communicate about it.*





# CONCLUSION

## The future of the e-commerce supply chain lies in sustainability

The final part of our practical guide aims to clarify our definition of “more sustainable e-commerce” in light of the best practices suggested by our logistic partners. It is important to mention that [companies](#) are more and more committed and dedicated to doing their part in the effort to limit climate change. However, it is equally important that they do not force, but rather educate their partners and customers to the added value that sustainability can bring in the long term for the environment and for their business.

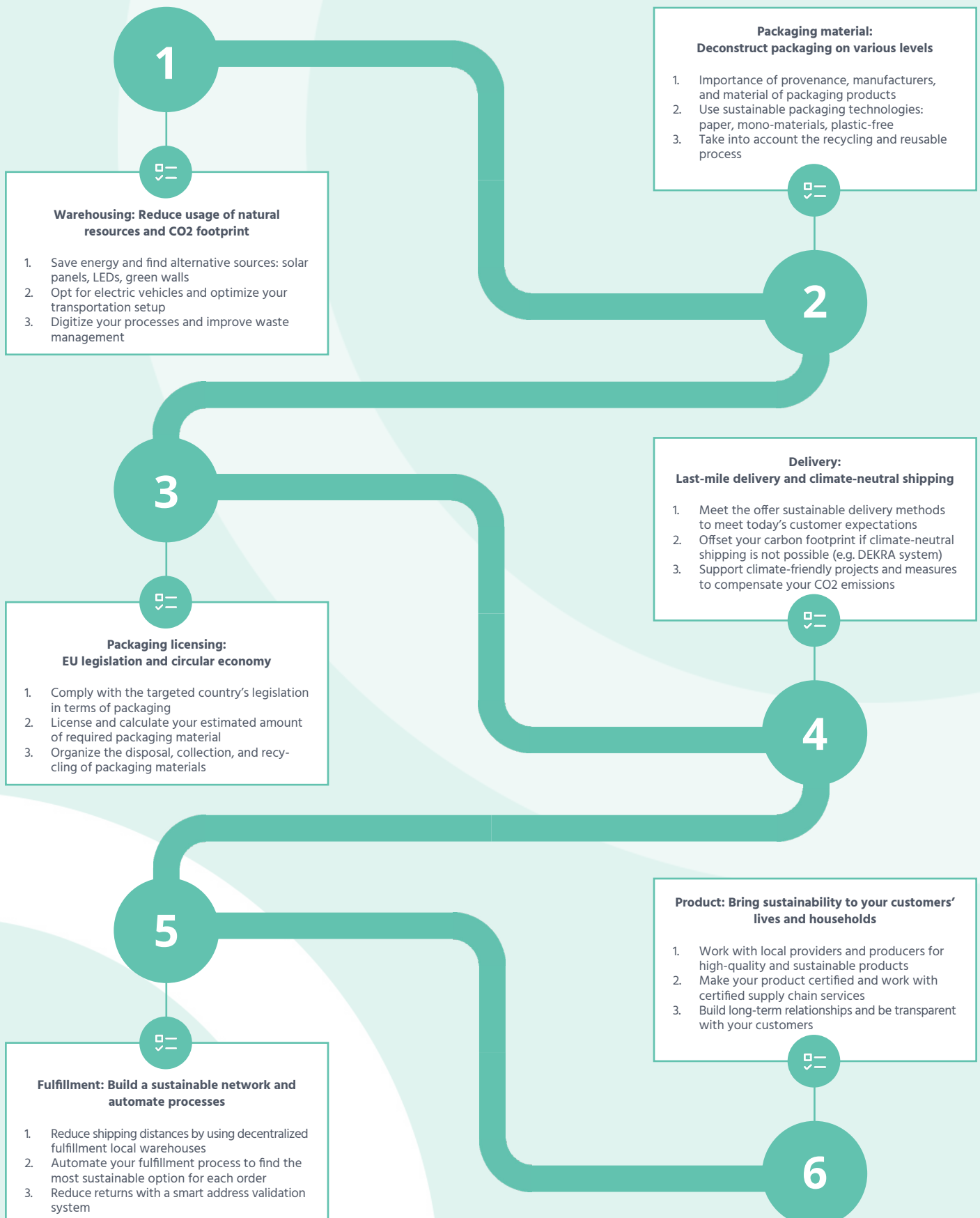
Creating a fully sustainable and “green” supply chain for every stage of the process sounds like a utopian world, especially in the e-commerce field and with cross-border sales. Yet, this guide is all about the different solutions that you can implement in order to make it more sustainable.

Sustainability is always a work-in-progress, but the industry trends are clear, as is the urgency of the environmental issue. More widespread adoption of sensible practices by e-logistics operators is a much-needed step towards a truly sustainable model.

Additional solutions are paralleled on the social responsibility level. It is obvious that turning your entire supply chain toward “green” solutions demands a lot of resources. That is why you can start with smaller action items to set an example as a company: support carbon offsetting projects, act for reforestation by planting trees, calculate and reduce your carbon footprint, etc.

To wrap up this e-book we have created a graphic checklist that you can use for your journey towards achieving a more sustainable e-commerce supply chain.

# ROADMAP



# PARTNERS PAGE



## byrd

byrd is the leading independent e-commerce fulfillment platform in Europe providing scalable fulfillment services for e-commerce businesses and fast-growing D2C brands. From warehousing, picking and packing, delivery, and returns management, we take care of the whole fulfillment process for online shops. By using our solution, retailers get access to 20+ fulfillment locations across Europe, all connected via our software. This enables you to manage your whole fulfillment with our powerful all-in-one tool, in the fastest and most efficient way possible.

[Visit our website](#)



## Karl Dischinger

Founded in 1879 by Karl-Hermann Dischinger, the transport company is now an international logistics service provider with over 1,000 employees and 14 branches in Germany, Austria, Croatia, and Spain. The headquarters of the family-run company is located in Freiburg im Breisgau. In addition to warehouse and shipping logistics, the company also offers logistics consulting, in-plant logistics, packaging, partial and full assembly, customs clearance services, plant layout planning, and quality inspection.

[Visit our website](#)



## Primoza

Many people feel disconnected from nature. We want to change that! With our sustainable and plantable products, we want to inspire as many people as possible to get closer to nature again. And this thought won't let us go: that's why we develop products that invite people to do-it-yourself and entice them into the garden, onto the balcony, and into the green. In this way, we can inspire many people for our mission and together make the world greener.

[Visit our website](#)



## Packhelp

Meet Packhelp, an international group of 250 professionals helping over 50,000 brands across Europe. A regular packaging company by day & a fast-growing tech company by night on a mission to empower brands to be better at packaging. Over the past few years, Packhelp raised more than 50 million € with the ultimate goal to become a sustainable leader in the global packaging marketplace. **Discount code (BYRD10) is valid until 1. 10. 2022. The discount is -10% on the customer's first order.**

[Visit our website](#)



## Seven Senders

Seven Senders is the leading delivery platform for parcel shipping. The company, founded in 2015 by Johannes Plehn and Thomas Hagemann, connects senders with its carrier network of more than 100 parcel delivery agents throughout Europe to offer excellent, local shipping as a competitive advantage. With additional shipping services such as a claims center, insurance, returns portal, and labels, Seven Senders makes international shipping easy. Automated dispatch notifications and tracking and monitoring solutions ensure a transparent shipping process. Monthly reports and analysis facilitate data-based optimization of international shipping performance. Senders receive everything from a single source, which reduces complexity.

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