

Whitepaper

# Sendle with Care

## How Small Businesses Can Reduce the Harm of Shipping



**Think before you ship**  
Choose 100% carbon neutral delivery



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## Indigenous Acknowledgement

Sendle would like to acknowledge the traditional custodians of the land on which we operate. Our team members live and work in Australia, the United States and the Philippines, and as a shipping company, we move items from one place to another around the world. We pay respect to indigenous people from all lands and elders past and present.





# Foreword

By James Chin Moody, co-founder and CEO of Sendle

Sendle was started to address two of the most pressing issues of our time: the climate crisis and economic inequality. All around the world, the impacts of climate change are being felt. In the shipping industry, they are labeled as “service delays” in communities experiencing 1,000-year floods or “supply chain disruptions” in countries weathering extreme heat. To make matters worse, the changing climate is hitting the most vulnerable people the hardest. The World Bank estimates 132 million people will be plunged into extreme poverty by 2030<sup>1</sup> as a result.

It can be overwhelming to consider the scale of the climate emergency and figure out how to make a difference. At Sendle, we're working to minimize negative externalities and maximize positive impact. Simply put, our goal is to do what is best for people and the planet.

This paper covers how together we can address one key area: reducing the harm of shipping. Since launching in November 2014, every single package delivered by Sendle has been carbon neutral. To date, we've offset 21 billion miles of carbon by investing in forest protection and regeneration projects.<sup>2</sup> We've even offset a competitor's packages.<sup>3</sup> It's significant, but not enough. To truly reduce the harm of shipping, we need the entire shipping industry to join us in committing to and working towards net zero emissions by 2030.

*The international Panel on Climate Change (IPCC) findings are clear: to limit warming to around 1.5°C (2.7°F), greenhouse gas emissions must be almost halved (reduced 43 percent) by 2030.<sup>4</sup>*

We can make the transformation needed by 2030, if we accelerate change as an entire industry, not as individual players. But it must happen now.

As a small business, what can you do? Small businesses are often less resourced and face challenges making their operations more sustainable. But greening your business is achievable. Keep building on what you're already doing: sourcing sustainable materials, growing your business, and giving back to your community. Choosing Sendle as your delivery partner in order to have a zero carbon shipping footprint is of course a great choice, too.

Small businesses are the backbone of most economies and they help build an equitable economic system. Yet small businesses—especially the many side-hustlers that we serve—have long gotten worse rates and service from traditional shipping companies. At Sendle, we design specifically for the needs of small first and foremost. As 44% of economic activity in the U.S., small businesses deserve the tools to effectively run their operations.<sup>5</sup> We will have leveled the playing field when anyone, anywhere has the tools and opportunity to build their dream business.



# Introduction

This paper presents the current state of environmental impact from eCommerce shipping, and outlines viable solutions for the shipping industry to reduce environmental harm. It shares the steps small businesses can take to embed sustainability into their daily operations and ways individuals as consumers can support positive change.

## Rapid Growth of Online Shopping

There are 9.1 million online retailers around the world and 2.5 million of them are in the U.S.<sup>6</sup> Included in these numbers are a league of new digital-first businesses ranging from side-hustlers to prominent direct-to-consumer brands. From 2019 to 2020, online retail sales worldwide grew by 27.6%, accounting for 18% of all retail sales around the globe.<sup>7</sup>

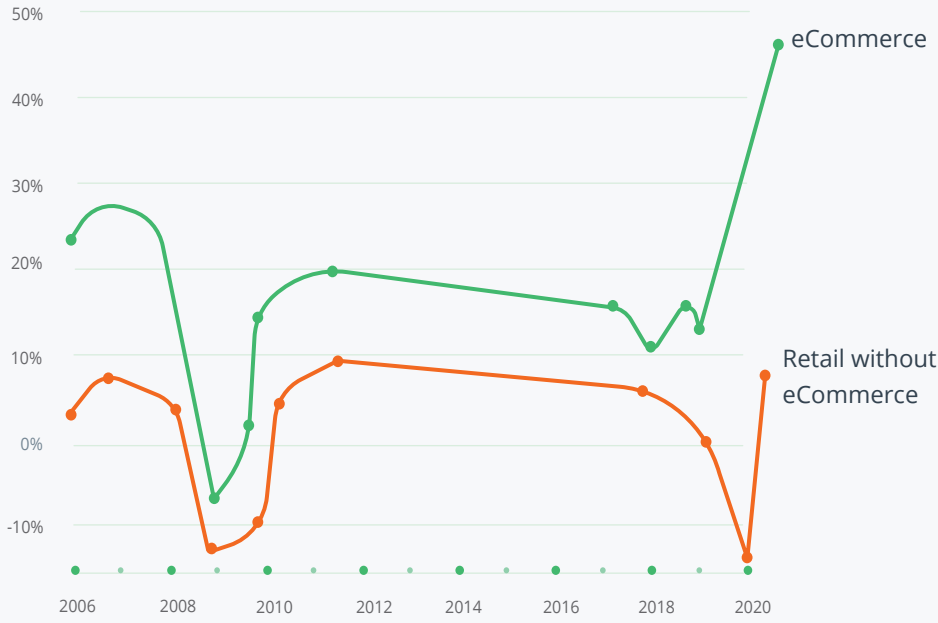
*By 2023, online retail will account for 20% market share.<sup>8</sup>*

This shift from traditional brick and mortar to online was rapidly accelerated by the COVID-19 pandemic when the benefits of online shopping were no longer simply about convenience and product variety, but a matter of personal safety and public health. Just how much change occurred?



## Change in eCommerce and traditional retail

Compared with a year earlier



The dramatic shift to eCommerce in 2020, while traditional retail only bounced back to its five-year high

Source: Analysis of US Census Bureau data





Increase in eCommerce deliveries in 2020

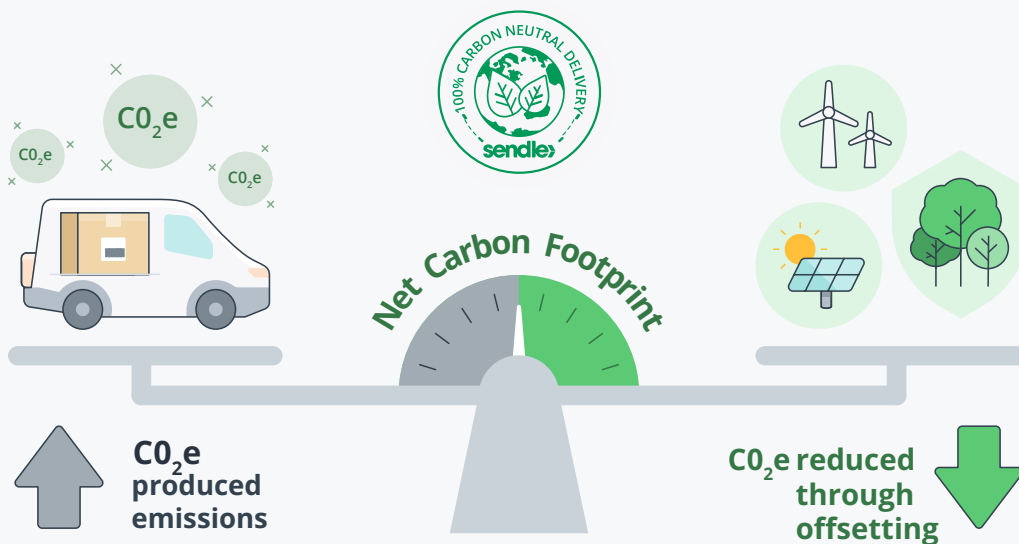
The World Economic Forum estimates that COVID may have accelerated the shift to eCommerce by five years<sup>9</sup> and reshaped last-mile logistics, with eCommerce deliveries increasing 25% in 2020.<sup>10</sup> The chart above captures the spike of 2020. For small business owners, this means more people than ever before are willing to buy from your online store.

## How Sendle Delivers Sustainably



5k packages per second in the U.S.

The rise of eCommerce brings a parallel increase in its negative environmental impact. 165 billion packages are shipped each year in the U.S.<sup>12</sup> That's an astounding 5,000 packages per second. Consider that for each package, there are the visible impacts (like a cardboard box to recycle) but also an invisible footprint that includes the carbon dioxide emitted in the transportation and delivery. Sendle calculates the carbon dioxide released from all shipments and invests in environmental projects that offset the carbon footprint. Through the **Invest in Earth** program, Sendle guarantees that every package is carbon neutral. [Learn more about how it works](#) and the places where Sendlers are helping to restore ecosystems and regenerate habitat.



## What the Shipping and Logistics Industry Can Achieve Together

Sendle is leading the industry by offering 100% carbon neutral delivery, and has set an even more ambitious goal to **achieve net zero emissions by 2030**. To meet this commitment, it will require a dramatic reduction of the carbon emissions released in the shipping network, accounted for in Sendle's scope 3 emissions.<sup>13</sup> It will take massive collaboration between network partners and the community of Sendlers to improve efficiency, introduce zero emissions vehicles, and try new sustainable product offerings.



# eCommerce's Carbon Dilemma

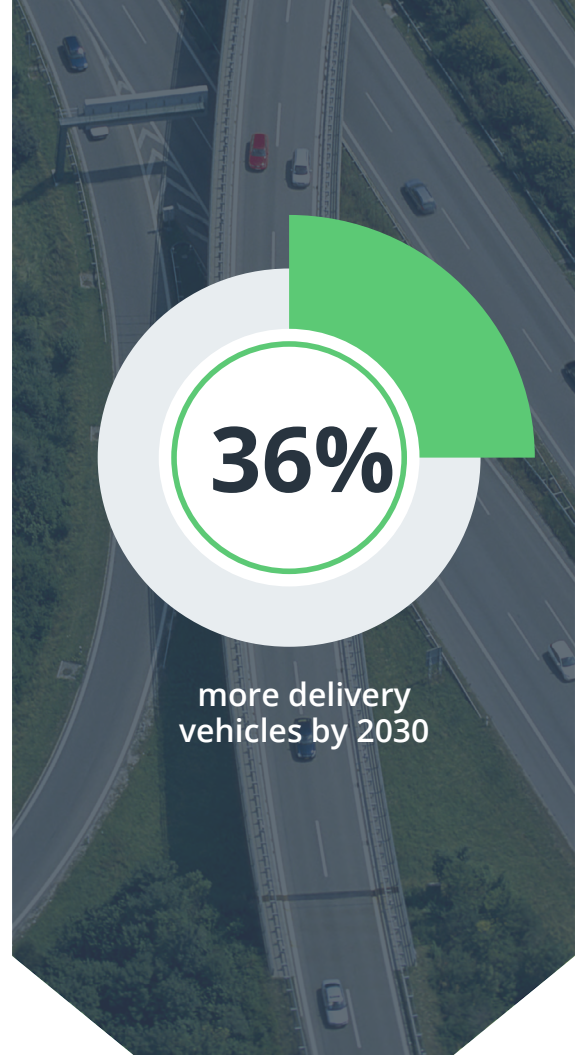
Transportation is the biggest contributor of CO<sub>2</sub>e emissions in the U.S., accounting for 29% of greenhouse gasses (GHGs) released in 2019.<sup>14</sup> Globally, transportation and logistics activities via heavy and light trucking, aviation, rail, and sea make up 17% of global GHG emissions.<sup>15</sup> Largely due to the growth of eCommerce, shipping is a rapidly growing portion of this negative impact. In fact, shipping alone could grow to 17% of global GHGs emissions by 2050.<sup>16</sup>

*The World Economic Forum estimates there will be 36% more delivery vehicles driving around city streets by 2030.<sup>17</sup>*

Last-mile transportation is the most energy-intensive leg of a package's journey. Due to the growth in online shopping, demand for last-mile delivery is expected to increase to 78% by 2030.<sup>18</sup> In response, innovators are developing ways to reduce the carbon footprint, and tackle the associated problems of congestion and pollution.

## How to Green The Last Mile?

Many of the technologies and interventions to improve carbon efficiency of the last-mile delivery are readily available and well-researched. Last-mile delivery fleets based on their size and range are excellent candidates for electrification, and some transport depots are fitting locales for on-site solar power generation.



## Australia's First Solar Powered EV Delivery Fleet

In 2020, Sendle began delivering packages in Australia's first solar powered EV delivery fleet. Our Australian courier partner Bonds decided to harness the power of the sun by assembling an array of 320 solar panels on the rooftop of its Sydney depot and charging the electric vehicle fleet on site. Each EV can work a full 10 hour day, covering over 124 miles in metropolitan areas and still finish with ample battery charge. Sendle and Bonds have proven that solar powered electric fleets are feasible for last mile delivery. There has been huge interest and support from eCommerce small business customers who want their packages delivered in this sustainable way.

Urban delivery hubs, night-time delivery, and delivery parking zones all improve carbon-efficiency with the side benefit of reducing urban congestion. Customers can also help improve last-mile efficiency by opting for deferred delivery to increase the density of packages per route, and using pick-up lockers, especially if they are walkable in their neighborhood.





### Vehicle Improvements

- › EV (ready for scaled adoption)
- › Hydrogen / Drones (not yet ready for widespread adoption)



### Delivery Changes

- › Urban delivery hubs
- › Night-time delivery
- › Delivery Parking Zones



### Customer Action

- › Deferred delivery
- › Pick-up lockers

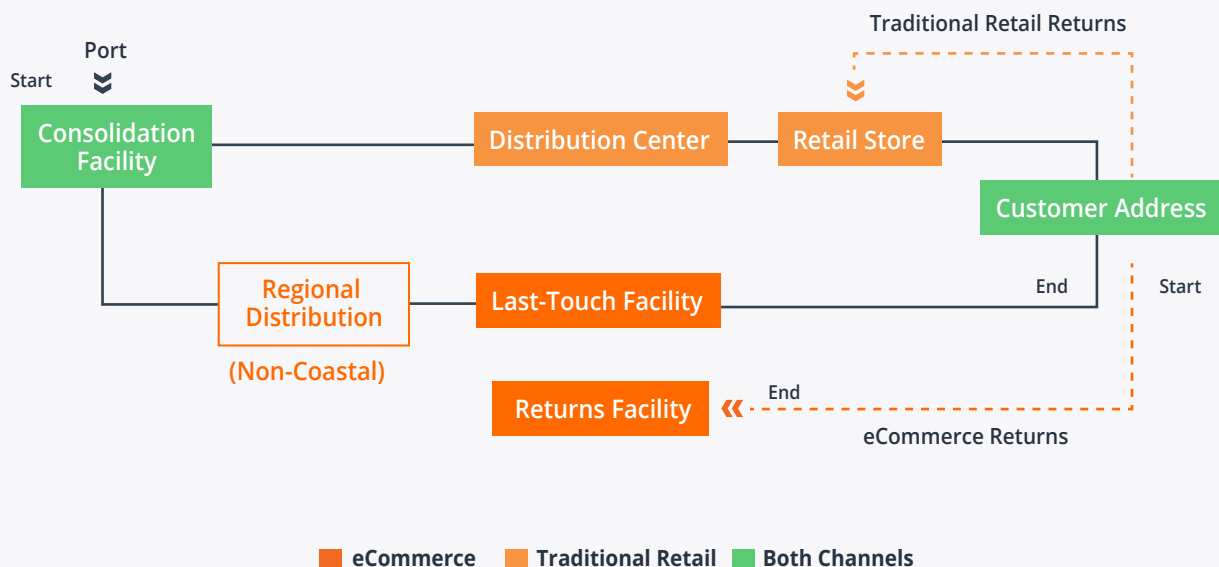
Each of these solutions is an important part of a strategy to improve carbon efficiency, but it will require adopting many of them to produce sufficient gains. If last-mile deliveries are not greened within the next couple of years, urban emissions will increase by at least 30% in the top 10 cities globally, resulting in 27.6 million tons of CO<sub>2</sub>e annually by 2030.<sup>19</sup>



## More Trucks on the Road, Fewer Cars on the Street?

Looking at carbon emissions holistically, eCommerce can be more carbon efficient than purchasing from a traditional brick and mortar retailer. And with carbon neutral delivery, it's guaranteed to be! Using the below model of eCommerce compared to traditional retail, the MIT Real Estate Innovation Lab found eCommerce to be more efficient in many scenarios, especially when last-mile delivery improvements like electric delivery fleets were introduced.<sup>20</sup>

The chart below compares the transportation steps for eCommerce products compared to those purchased at retail stores.

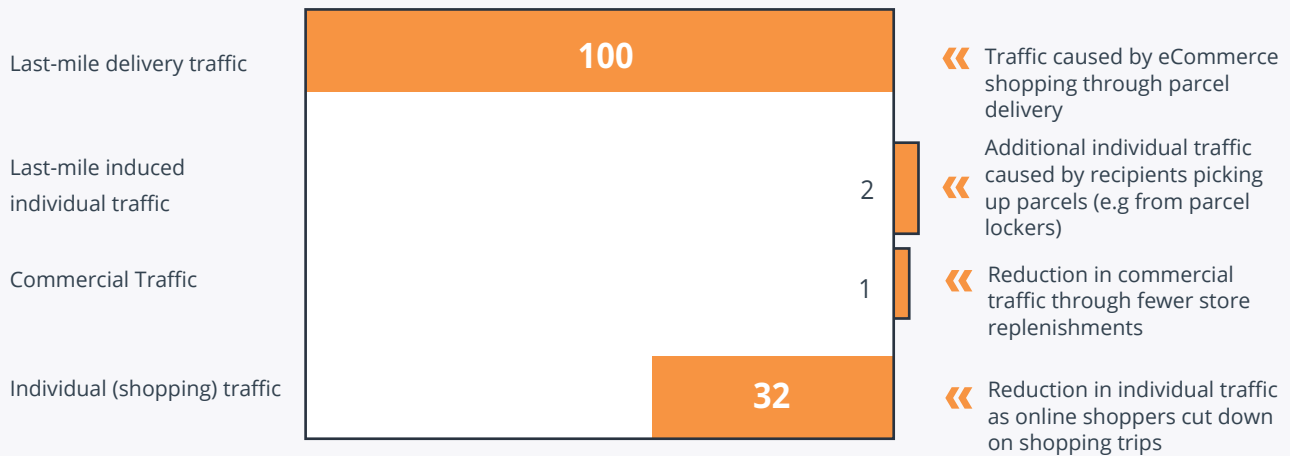


The eCommerce experience is simpler for consumers but more logistically complex.

## Impact of eCommerce on commercial and private traffic volume

eCommerce purchases replace a portion of personal vehicle trips to the store. The World Economic forum estimates a 32% reduction in individual traffic due to fewer shopping trips.

eCommerce traffic development in 1% of vehicle kilometers



Fewer people shopping in person shifts traffic to carriers.

Source: Euromonitor, BIEK, MID, World Bank, McKinsey & Company

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## The Shift from Shipping Hub-Hub to Home-Home

Prior to the eCommerce boom, shipping companies delivered goods from one business to another, typically a warehouse or manufacturer to a retailer. For shippers serving businesses in the U.S., it meant creating an efficient network to connect 12.8 million business delivery points. Now eCommerce with home delivery adds 148.6 million residential delivery destinations.<sup>23</sup>

As home-based businesses increase, another layer is added to the network challenge: efficient pick-ups from residential locations. Almost half (48 percent) of the customers that started shipping with Sendle in the months immediately after the onset of the COVID-19 pandemic identified as side-hustle, part-time businesses.<sup>24</sup> These businesses, operated out of people's homes, are excellent examples of the small shippers that the delivery network needs to adapt for and better serve with sustainable options for the first-mile.

*Sendle has been working on this problem since the company started and this year will introduce a fully electric pick-up network in pilot areas.*

## Sendle's Sharing Economy Model

Sendle reduces the overall shipping industry footprint by tapping existing providers and filling empty space in their vehicles to ensure every trip is maximized. This keeps additional trucks off the road. A Sendle package may get routed through multiple carriers, depending on the most efficient option for that specific day and destination, utilizing hundreds of thousands of existing routes. With this model, Sendle helps its shipping partners make their routes more efficient and profitable, and in turn passes that savings along to Sendle customers. This form of collaboration is key to building a carbon-efficient shipping network, and like other sharing economy solutions, it's an example of the structural change needed to develop a lower carbon economy.<sup>25</sup>

*Sendle helps its shipping partners make their routes more efficient and profitable, and in turn passes that savings along to Sendle customers.*



# The Problem with Packaging

The packaging from eCommerce can be responsible for as many or more GHG emissions than transport and delivery. Estimates from studies range from 30% to 45% of the full eCommerce carbon footprint.<sup>26,27</sup> Remember the 165 billion packages shipped each year (5,000 per second!) in the U.S.? If all packages were shipped in cardboard, it would require the equivalent of 1 billion trees to produce that quantity of boxes.<sup>28</sup> Approximately 3 billion trees are pulped each year to produce 241 million tons of cardboard mailers and other paper-based packaging.<sup>29</sup> While recycling rates of cardboard are an impressive 96.5%, landfills still received 940,000 tons in the U.S. in 2018.<sup>30</sup> Corrugated boxes make up 11.4% of U.S. municipal waste.

## Plastic

Even more concerning than paper-based packaging is plastic as it takes hundreds of years to break down. Each year 86 million tons of plastic packaging is produced globally and less than 14% of it is recycled.<sup>31</sup> Oceana reported that Amazon alone generated 599 million pounds of plastic packaging waste in 2020, up 29% from their 2019 estimate of 465 million pounds.<sup>32</sup> Amazon disputes these numbers and cites that they have eliminated nearly 1 million tons of packaging material.<sup>33</sup> Shoppers are advocating for more change; over 744,000 people have signed a petition requesting Amazon offer plastic-free packaging options.<sup>34</sup>



**1 billion trees**



**165 billion shipments**



**940k tons of landfill**



## Sendle works with cardboard sculptor to raise awareness

On Earth Day 2022, Sendle is collaborating with renowned Montreal artist Laurence Vallières to create a 10-foot-high grizzly bear sculpture made from recycled cardboard packaging. It will stand in Lake Union Park in Seattle, the epicenter of eCommerce. The grizzly bear—of which there are only 1,500 left in the U.S. (south of Canada) as a result of the impacts of habitat loss and climate change will stand as a symbol of the environmental cost of online shopping that can be avoided by shipping sustainably.<sup>35</sup>



## Conserving critical wildlife habitat in Alaska - Klawock Heenya

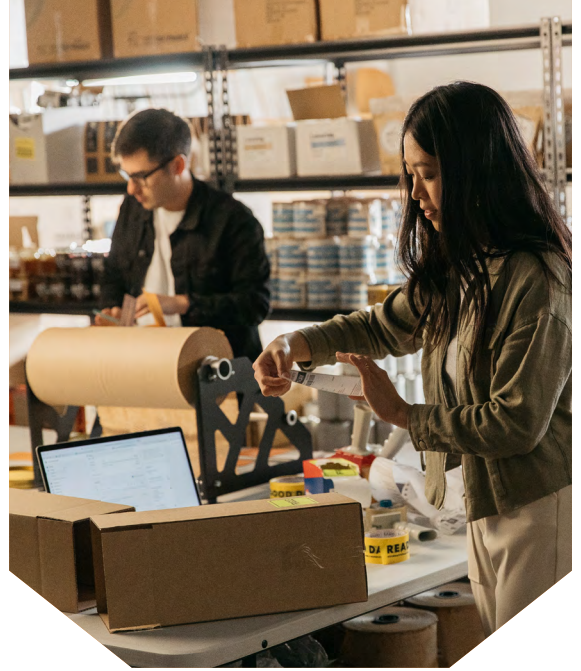
Sendle has invested in the Klawock Heenya improved forest management (IFM) project, covering 8,619 acres of forest in Southeastern Alaska. The goal is to reestablish young growth stands of timber via natural generation while maintaining water quality and conserving critical wildlife habitat. This project allows the forest to progress naturally while providing significant climate benefits through carbon sequestration. This is achieved by maintaining forest CO<sub>2</sub>e stocks above the regional baseline.

This project was sourced by our climate action partner, [South Pole](#).



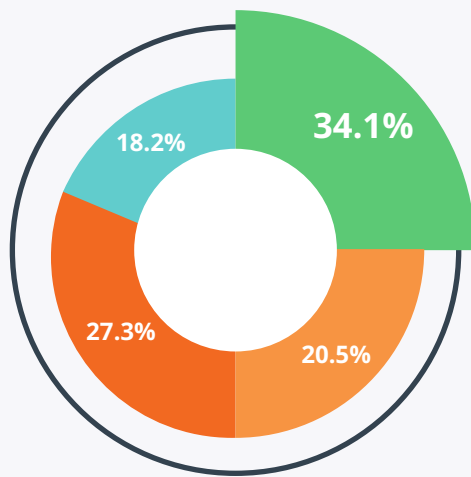


# The Sendle Small Businesses Going Green



## What Small Businesses Can Do

Small businesses can play a big role in the transition to sustainable shipping. The vast majority of small businesses that use Sendle, 86%, report that carbon neutral shipping is important to their business, and 62% of them go beyond that to factor sustainability into most of their business decisions.<sup>36</sup>



**Shipping Emissions**  
34.1% total emissions

**Energy Consumption Emissions**  
20.5% total emissions

**Packaging Emissions**  
27.3% total emissions

**Product/Services Emissions**  
18.2% total emissions

**Total**  
100% total emissions

EcoCart help eCommerce businesses understand and offset their carbon emissions, including the product footprint from manufacturing

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**Step 1: Opt for carbon-neutral shipping.** Making the change to a carrier like Sendle will reduce a significant portion of an eCommerce business' carbon footprint. On this pie chart, it would erase the shipping emissions segment.



**Step 2: Switch to Sustainable Packaging.** Packaging accounts for a large proportion of an eCommerce business' footprint — EcoCart estimates 27%. While this footprint can't be fully erased, the following steps can help small business owners consider all possibilities to minimize it.

### Resize

packaging for more efficient shipping. Right-sizing to best fit products reduces the footprint of packaging and also decreases shipping emissions by making transport steps more efficient. 70 percent of Sendlers use the smallest packaging possible for their shipments.<sup>38</sup> It's easy to resize your packaging if it doesn't come in exactly the size you need. Learn more in [Sendle's blog post](#), which includes a handy video.

### Reduce

excess packaging materials like paper or plastic filler. To take it one step further, how can the product be designed to not require an additional box or mailer? It is possible to create an amazing unboxing experience without excess packaging. You've got to think creatively and sustainably.

## Reuse

of packaging even one time halves the footprint. Make this simple for customers by using mailers with multiple adhesive strips or include prompts encouraging reuse within the package. Fully reusable mailers can be rented and customers can receive discounts when they return the packaging. Almost half of Sendle customers offer reusable or returnable packaging.<sup>39</sup>

## Recycle & Compost

materials after reuse. Attractive labels, tape, cartons and satchels are available made out of 100% recycled material that can easily go straight into the worm farm, home compost or municipal composting facility.



**Step 3: Brainstorm ways to reduce returns.** Returns account for a quarter of an eCommerce business' footprint. Adding additional product images and descriptions can reduce miscommunication with customers. Another way to have a positive impact is to redirect returns to an organization that needs that item. Avocado Mattresses donates returned mattresses to shelters.<sup>40</sup>



**Step 4: Understand the product footprint.** Conducting a life cycle assessment of product offerings is an important step to understanding their sustainability and identifying steps to improve. If that process is too cumbersome, companies like [EcoCart](#) have databases to quickly calculate carbon emissions from manufacturing for small eCommerce businesses.



**Step 5: Account for physical and digital space.** Converting to 100% renewable energy is the best way to improve the carbon footprint for a home-based business or another workspace. Did you know websites also have a carbon footprint? This [website carbon calculator](#) estimates a carbon footprint, simply enter the eCommerce store URL.

After working through these steps, set aside time to make the identified swaps and improvements. To address any remaining emissions, businesses can purchase high-quality carbon offsets. 30% of businesses that use Sendle do just that, offsetting carbon for their operations.<sup>41</sup>

## Examples:

**The Better Packaging Co's** mission is to bring cutting edge sustainable packaging solutions. Their latest innovation is POLLASTIC mailers, which are made from 100% ocean bound plastic pollution! They work with coastal communities that are impacted by the compounding effects of pollution and poverty to remove plastic from their beaches and riverways, which is turned into packaging.



**No Issue** offer sustainable packaging such as tissue paper, mailers, boxes and stickers that are customized to your brand. Better yet, they have low minimum order requirements and plant trees with every order placed.



**Hero Packaging** offer gorgeous compostable mailers in a variety of colours and sizes that feature two adhesive strips on the flap for re-use. You can also order custom mailers, compostable shipping labels and tape. Their mission is to completely eliminate single-use plastic packaging in eCommerce on a global scale.



**Paccurate** helps delight both online shoppers and delivery drivers by helping businesses select the best size package for their products. In addition to minimizing packaging waste, their technology reduces carbon emissions by improving efficiency of transportation.



**Repack** offer fantastic re-usable packaging with options to rent or buy. This is a truly circular solution for shipping to customers, sending samples, rented items or even intracompany. They also integrate with Shopify.



**LimeLoop** make their re-usable mailers from upcycled billboard vinyl and recycled cotton. They come with an inbuilt returns service where your customers can flip the label on the mailer and it will be collected and returned. Features in development include geolocation and temperature tracking to understand handling.





## Five unexpected and innovative sustainable packaging materials <sup>42</sup>



### Pineapple

To make use of the industry's excess pineapple leaves, Filipino researchers created "pinyapel," a treeless paper made from discarded pineapple leaves that is naturally water-resistant and ideal for food packaging.



### Mushrooms

Mycelium (the mushroom root structure) is an ideal replacement for plastic because it has a springy texture. It can also be used in shipping boxes as an alternative to packing filler and styrofoam, that is completely biodegradable.



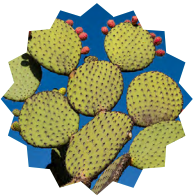
### Coconut

Coconut husks can be molded together with an organic adhesive to form cartons for eggs and other fresh produce, or cushioning material for use in packaging systems.



### Corn

Cornstarch can be used to make biodegradable packing peanuts and compostable mailers. See [Case study: Sendle's compostable mailers for the full story.](#)



### Prickly Pear Cactus

Researchers have created a [biodegradable plastic](#) from the juice of the nopal — or prickly pear cactus. The material breaks down after one month in soil and a matter of days in water. So if it makes its way to the ocean, it will simply dissolve.

## Sendle's compostable satchels

Sendle's mailers look like plastic and feel a little like plastic, but they're made from 100% biodegradable and compostable materials — from corn starch (from corn not fit for consumption), PLA (Polylactide, which is made from waste corn too and other plants) and PBAT (Polybutyrate Adipate Terephthalate).

*In a Sendle survey, 64% of consumers said they'd be more likely to make a purchase from a retailer that offered compostable packaging.*

They are an ideal packaging solution because they are waterproof, stretchy, stickable, tear-resistant, tough and durable. These clever satchels have passed stringent certified home compostable requirements, which includes a worm toxicity test, so they're even worm farm friendly. Because they're made from plants not plastic, it's important to store the compostable satchels in a cool, dry place. If stored correctly, they will be tough enough to send parcels up to 6 months after purchase.




Order [Sendle mailers](#).



# How Consumers Can Help

Consumers are seeking out more sustainable products and paying attention to features like ingredients, certifications, and packaging. Two-thirds of all respondents and 75% of millennials said that they consider sustainability making a purchase.<sup>43</sup> But there's more online shoppers can do to limit the environmental footprint of what they buy.

Here's three things savvy online shoppers

-  Support businesses that offer carbon neutral shipping.
-  Select slower shipping methods whenever possible.
-  Limit returns by making thoughtful purchases.<sup>44</sup>



## Carbon Neutral Badges



[Download Badges](#)

Sendlers can help guide consumer by incorporating messaging about sustainable shipping into their online stores. Tell the world about your own sustainable shipping practices. [Download the badge](#), and display it with pride. Help inspire others, and educate the world at large that how you ship matters, and that small simple choices can make a world of change.





# Conclusion

The shipping industry, small businesses, and consumers can all work together to reduce the harm of shipping, while growing eCommerce businesses vital to an equitable economy. As the first 100% carbon neutral package delivery service in the United States and Australia, Sendle is proud to be a leader and pioneer in the global transition to sustainable shipping. But it will take logistics — everyone moving in coordination and with purpose in the same direction.

It can be so easily achieved with carbon offsetting programs, transitioning to solar powered electric vehicle fleets, switching to new fuel technologies, and launching green packaging strategies. The stakes are clear — the shipping industry can either proactively work to reduce the carbon impact or navigate increasing sea level rise, severe tropical storms, inland flooding, drought, and extreme heat events. Failure to address climate change, will exact billions of dollars in additional costs each year for the shipping industry.<sup>45</sup> Implementing mitigation and adaptation strategies now is a better option than addressing catastrophic disruptions and disasters in the future.

Small businesses, while they lack the purchasing power of major retailers, collectively make up a substantial share of economic activity and eCommerce volume. Simple swaps like opting for carbon-neutral delivery or switching to sustainable packaging materials can make a significant impact. When shopping, in addition to supporting small businesses aligned with their values, consumers can have a positive environmental impact by purchasing from online retailers who communicate that they ship items sustainably.

Industry, businesses, and individuals all worked together to quickly adapt to the realities of the COVID-19 pandemic, including making purchases safely online. The same sense of urgency, collaboration and innovation can help humanity avoid climate catastrophes and build the systems that serve the needs of people and the planet.

## What Shipping Companies Can Do

- Commit to net zero by 2030
- Green the last-mile delivery

## What Small Businesses Can Do

- Ship carbon neutrally
- Use sustainable packaging

## What Smart Shoppers Can Do

- Select items thoughtfully to reduce returns
- Buy from businesses that ship sustainably

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