Locus

No Time Like the Present:
Why You Should Choose Carbon Neutral Shipping Today

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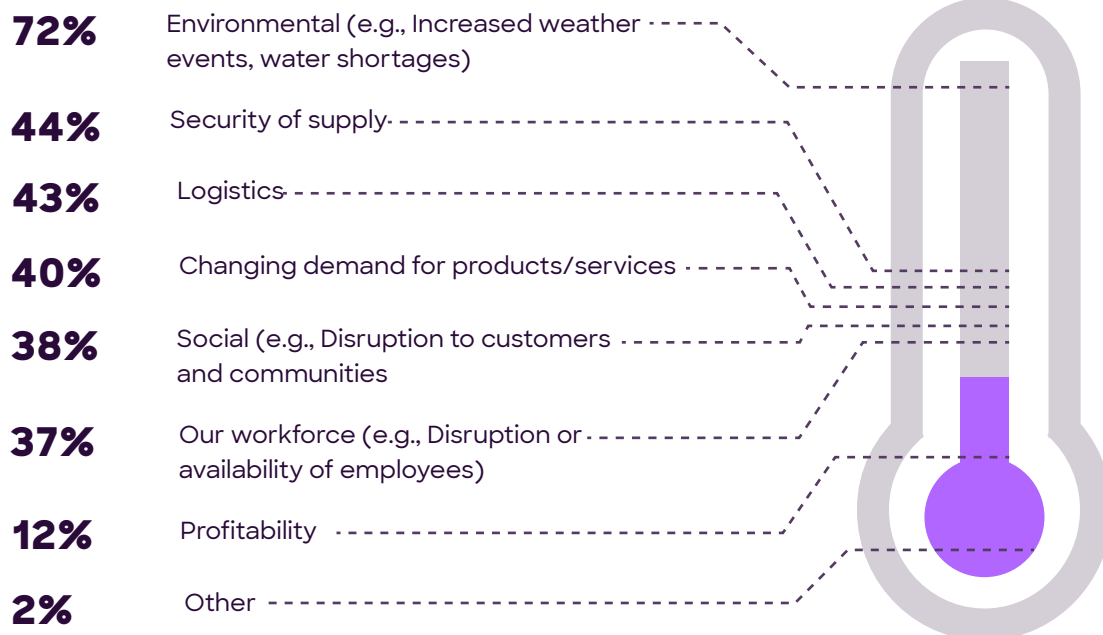https://blog.locus.sh/author/mrinalini/

Content

Overview:

In the year 2022 alone, devastating hurricanes, floods, and wildfires damaged infrastructure and extreme weather conditions rocked the global economy. Heat waves experienced like never before baked India and Pakistan, then monsoon flooding left about a third of Pakistan under water, affecting approximately **33 million people**.

Boiling temperatures in Europe lead to wildfires, especially in Spain and Portugal. Parts of the Yangtze River in China dried up, due to heat waves and severe drought that stretched for over eight weeks, followed by flooding rains.

CLIMATE CHANGE IMPACT AREAS IN SUPPLY CHAIN

72%   Environmental (e.g., Increased weather events, water shortages)

44%   Security of supply

43%   Logistics

40%   Changing demand for products/services

38%   Social (e.g., Disruption to customers and communities

37%   Our workforce (e.g., Disruption or availability of employees)

12%   Profitability

2%   Other

Gartner.com

Supply chains are the biggest source of carbon emissions in a business. Emissions from vehicles are also responsible for a disproportionately large share of the world's carbon emissions. But where there is a problem, there also lies the solution. And so we believe that supply chains can be vital in battling against climate change.

For this to come about, businesses will need to lead the charge on sustainability by treating carbon as a business cost. Many leading corporate entities are embracing sustainable logistics activities with the bigger vision of reducing carbon footprint and minimizing the business impact on ecology for generations to come.

Supply chains powered by digital technology and data, along with a diverse workforce can, without a doubt, bring about sustainability and resilience. However, this will mean a close examination of businesses' operations, infrastructure, production, and distribution processes.

This e-book will explore how carbon neutral shipments can help in achieving more than just surface-level sustainability operations. It will state the relevance of carbon neutrality in today's last-mile technology space and its scope in last-mile fulfillment.

Learning the language of sustainability

The impact of the climate crisis has been slow and insidious. It has crept up on us and made itself known through rising temperatures, glacial ice-caps melting, rise in sea-levels, and extreme weather conditions, bearing serious consequences for global supply chains. The more frequent and severe these disruptions are, the more they will interrupt production and hurt corporate revenues.

The conversation around climate change can no longer be ignored. The voices are growing louder and serious steps must be taken to combat the climate crisis. But before we figure how to bring this about, let's first familiarize ourselves with the language that is making its way into our vocabulary.

Industry buzzwords such as net-zero and carbon neutral have started doing the rounds, and are often used interchangeably by politicians, businesses, and environmental activists alike. While the results that net-zero emissions and carbon neutrality aim to bring about are the same, the scale and the kind of emissions they cover vary.

What does it mean to be carbon neutral?

To put it simply, carbon neutrality means creating a balance between carbon emissions and absorption of carbon from the atmosphere in carbon sinks. To bring this about, we first need to determine the amount of CO2 emitted and then carry out activities so as to reduce and capture the same amount of CO2 and balance the scales.

OVERVIEW OF CARBON NEUTRALITY
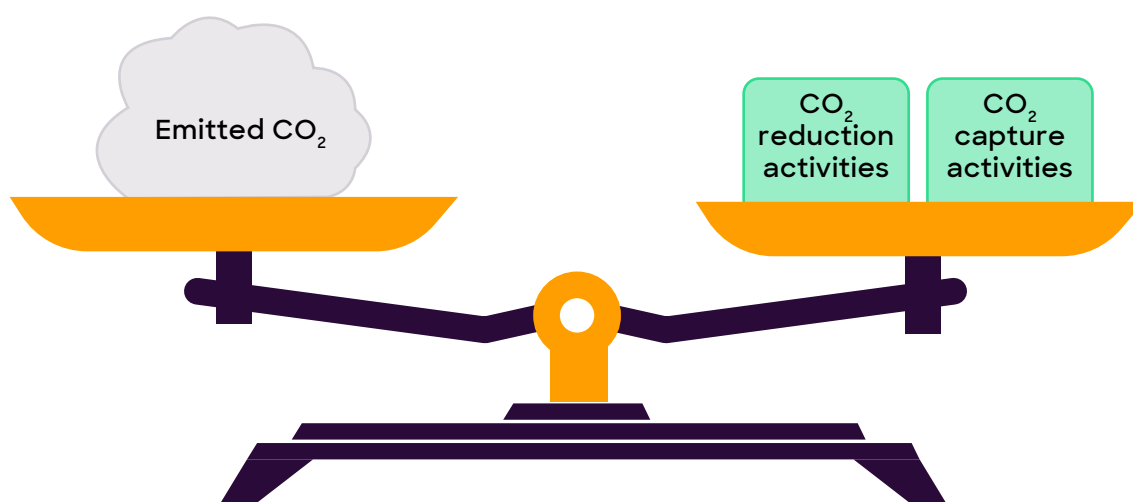
The process of removing carbon from the atmosphere and storing it is known as carbon sequestration. This is where carbon sinks come in. Any system that absorbs more carbon than it emits is considered a carbon sink: think soil, forests and oceans. Together, the ocean and terrestrial biosphere sinks remove between 9.5 and 11 Gt of CO2 every year. So far no artificial carbon sinks have been able to do the same for the environment, and the numbers are falling short in our fight against global warming.

	Carbon Neutral	Net Zero
Definition	Carbon neutral is achieving a state of zero carbon dioxide emission	Net zero refers to zero carbon dioxide emission
Process	Includes several steps such as commitment, counting & analyzing action, reduction, offsetting, repeating	By balancing a particular amount of carbon released with an equivalent carbon emission offset
Method	By balancing carbon emissions with carbon removal or by using renewable energy that does not produce carbon emissions	Use and production of renewable energy

While carbon neutrality is about balancing the scales—the amount of carbon being removed from the atmosphere against the carbon emitted—net zero emissions takes into account all greenhouse gasses (GHGs) such as methane (CH_4), nitrous oxide (N_2O), and other hydrofluorocarbons. This makes net zero emissions a much broader term and a more ambitious task at hand.
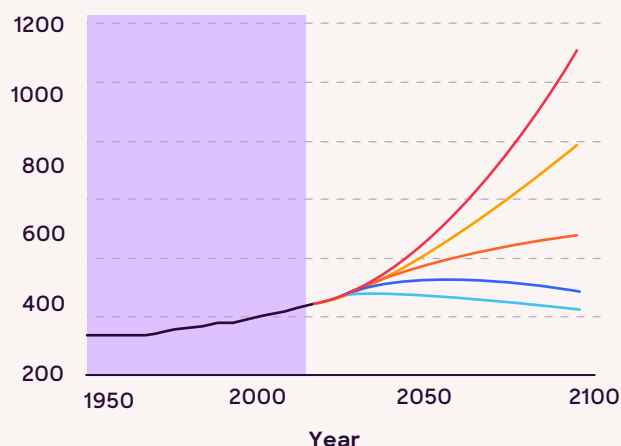
Why carbon neutrality is the need of the hour

In 2021, the global atmospheric carbon dioxide levels reached a high of **416.45 parts per million, in comparison to the 1960 levels of 316.91 parts per million.**

PAST AND FUTURE CARBON DIOXIDE EMISSIONS (billions of tons/year)
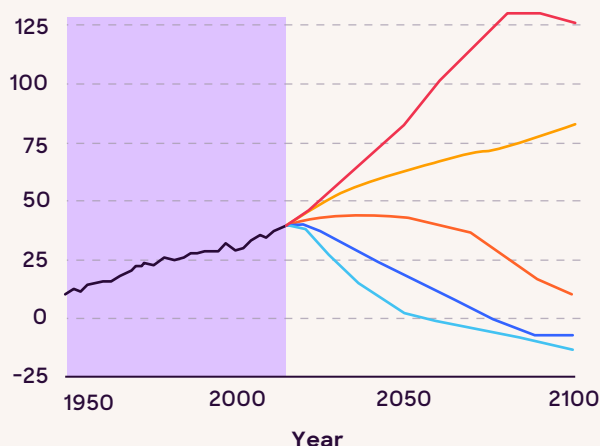
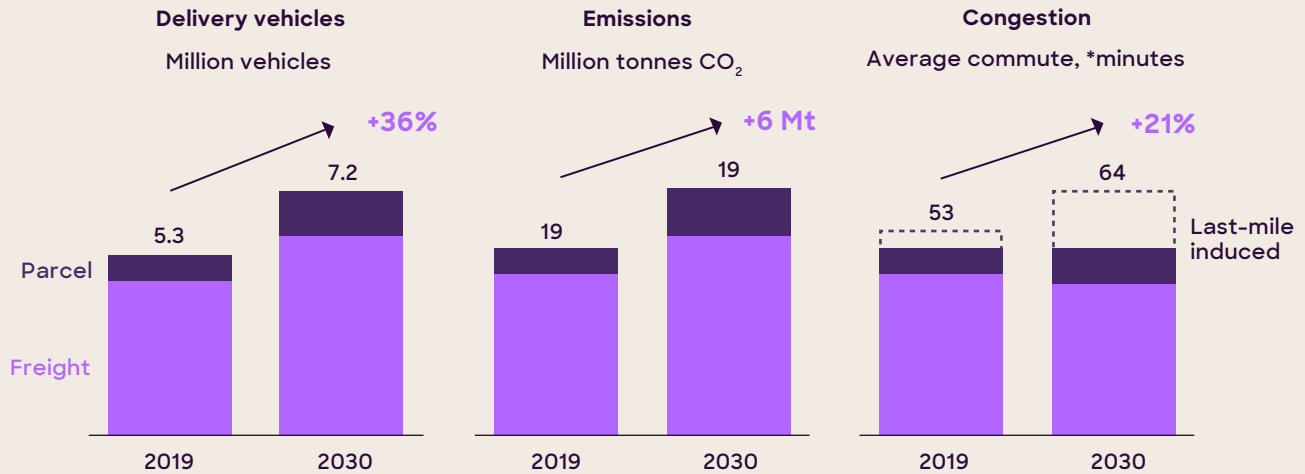**PAST AND FUTURE ATMOSPHERIC CARBON DIOXIDE EMISSIONS (parts per million)**

very high emissions ⟶ very low emissions

SSP5-8.5   SSP3-7.0   SSP2-4.5   SSP1-2.6   SSP1-1.9

NOAA climate.gov, adapted from IPCC AR6 Technical Summary, Figure TS.4

The rate at which global energy is growing, carbon dioxide emissions could reach a whopping **75 billion tons every year,** if not more by the end of the century. This means the atmospheric CO2 levels could be higher than 800 ppm, conditions that have not been witnessed for close to 50 million years.
Emissions from e-commerce delivery and rising congestion add to this, and consumer demand is only expected to rise unless businesses take active steps to reduce their carbon footprint.

2030 BASE CASE SCENARIO

Delivery vehicles	Emissions	Congestion
Million vehicles	Million tonnes CO$_2$	Average commute, *minutes

+36% +6 Mt +21%

Delivery vehicles: 5.3 (2019), 7.2 (2030)
Emissions: 19 (2019), 19 (2030)
Congestion: 53 (2019), 64 (2030)

Parcel
Freight
Last-mile induced

2019 2030 2019 2030 2019 2030

It is as clear as day that climate change issues are at the front and center of risk assessment for businesses. But the benefits of going green go beyond the usual concerns for the environment. Data shows that customers are increasingly choosing sustainable businesses over those that decide to pay no heed to climate change. In fact, it won't be a stretch to say that the **sustainability imperative has been driven primarily by the consumer**. According to this report by **First Insight**, consumers— right from Baby Boomers to Gen Z—are now willing to spend more for sustainable products.

SUSTAINABLE COMPANIES OUTPERFORM INDUSTRY PEERS ON KEY PROFITABILITY METRICS

Top 100   Peer average

Gross profit %   EBIT %   Net profit %
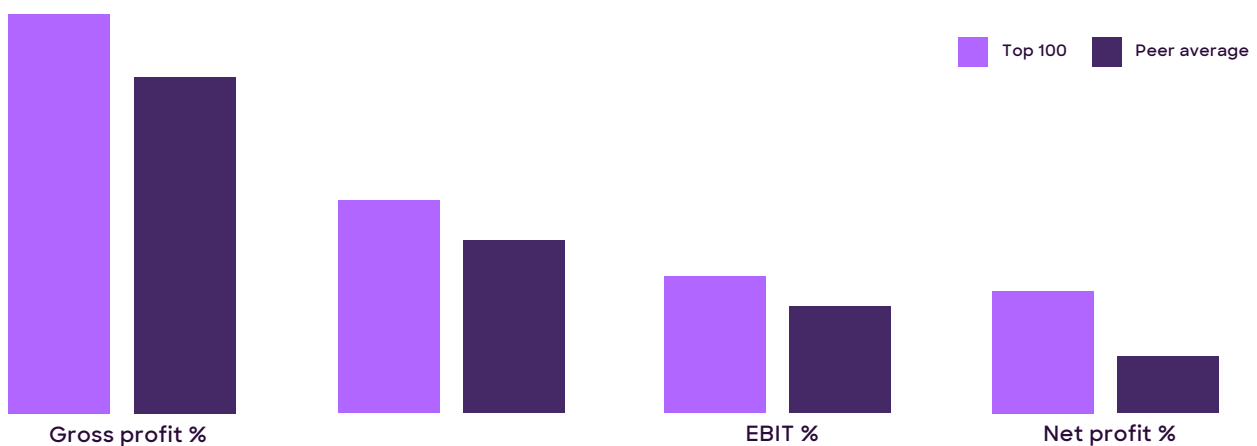
According to **The Journal of Portfolio Management,** businesses that model themselves around sustainability experienced a lower frequency of large and adverse moves in stock prices between 2009 and 2019 when compared to regular businesses. Better risk management and compliance standards across their supply chains could be the contributing factors here, resulting in fewer disruptions and making supply chains more resilient.

What is carbon neutral shipping and what does it mean for the last mile?

Often used as a blanket term by businesses working to lower carbon emissions, carbon neutral shipping is carried out when a company purchases carbon offsets and implements green logistics strategies to balance the scales.

One of the biggest contributors to global carbon emissions is last-mile deliveries and so the burden of reducing carbon footprint also lies with them. This means establishing clear sustainability targets, setting and adhering to green business practices and, at the same time, boosting efficiency and improving the brand's image.

A good example of this is the American multinational technology corporation, Microsoft, which has set itself the **ambitious goal of becoming carbon negative by 2030**. Tackling a complex societal issue such as this requires taking on a principled approach, making intentional investments in carbon reduction and removal technologies, ensuring complete transparency in processes, as well as using the brand's voice to talk about carbon-related policy issues. In India, Tata, Reliance, Mahindra, ITC, ACC, Adani and Dalmia Cement, pledged a move towards carbon neutrality.

Supply chain logistics help track, measure, and even optimize CO2 and energy consumption. It helps opt for resources that are energy efficient and CO2 neutral. A sound logistics and supply chain management system optimizes the various legs of the process.

Becoming a part of the solution: How do you implement carbon neutral shipments?

How can businesses make this happen? A number of multinational corporations have dedicated themselves to working with only those suppliers that adhere to social and environmental sustainability standards. End-to-end **green logistics implementation** is possible if we take effective measures to optimize each activity in order to reduce the overall ecological impact. Some of these are listed below:

- **Calculate your carbon footprint:** The first step to reducing your carbon footprint is to calculate it. It is worth noting that the footprint depends not only on the energy used for shipping based on weight and distance, but on the material used to ship the package as well. When you buy multiple items in the same trip, the carbon footprint per item also goes down. How you buy items and how to transport them makes a big difference in the carbon footprint.

- **Rethink your packaging strategy:** One of the biggest challenges faced by the shipping and logistics industry, especially by e-commerce, 3PL, and courier service providers is the management of the waste produced due from packaging. The modern customer is environment-conscious and demands orders to be delivered in eco-friendly packages that use minimal plastic and non-biodegradable materials. According to a report, **72% of Americans are likely to purchase products in packaging that is easily recycled or reused**—a promising figure and a great incentive for businesses to take sustainability efforts seriously. Several companies are now using recycled cardboard and wrapping sheets, recycled plastic, and eco-friendly fillers to ensure the eco-friendly and sustainable packaging of goods.

- **Bring energy efficiency to your warehouses:** Although often overlooked, warehouses and storage centers use huge amounts of energy in supply chains. For companies that aim to implement greener practices, sustainable warehouse management is an important area to consider. This can be done by investing in lighting and equipment that reduce energy consumption and maintenance costs without compromising on productivity. Where the warehouse is located is also important. Building warehouses in cities instead of outskirts can reduce the need for additional infrastructure such as water and electricity connections, as well as bring increased proximity to urban customers.

- **Switch to greener transportation:** The surest way to make this switch is by using transportation that's not powered by fossil fuels: think hybrid vehicles, drones and delivery robots. These modes of transport significantly reduce the negative impact of deliveries on the environment. One successful example of this includes CitySprint in London, which runs an electric fleet for same-day deliveries. These include push bikes, cargo bikes, electric and hydrogen vans, all of which contribute to lowered GHG emissions. Another example of this is DHL's Cubicycle, which is a four-wheeled cargo containerized bicycle. It uses a pedal system to operate and runs on solar energy. Businesses can follow suit and invest in zero-emission fleets to bring about carbon neutrality.

- **Optimize your delivery routes:** Day-to-day logistics involve route planning and executing innumerable deliveries on time. AI-driven **route optimization solutions** help in planning daily dispatches and delivery routes, taking into account real-world constraints such as zone-based restrictions, traffic conditions, and rider preferences. All of which results in faster deliveries, lesser miles driven, and fuel cost savings.

How Locus' Dispatch Management Platform can help you execute carbon neutral shipments

Locus' **Dispatch Management Platform** (DMP) tracks orders, manages inventory in real time across multiple channels, makes sure order fulfillment is faster, more accurate and more intuitive, and makes reverse logistics easier to manage. It serves as the unified space that allows businesses to manage deliveries across multiple fulfillment channels, saving on costs for the company and fuel for the environment. With Locus' DMP can make carbon neutrality possible with:

- **Exceptional customer experience in the first attempt:** By automatically accounting for customer delivery time preferences as well as allocating and routing **on-demand orders** to best suited drivers, Locus' DMP reduces the chances of failed deliveries, saving miles on the road. It tracks the health and progress of tours from the beginning to the end, even at the order level, bringing about complete visibility in the supply chain.

- **Maximum number of deliveries per vehicle:** Using Locus' DMP, businesses get to fulfill more orders and scale with fewer vehicles, save costs and boost productivity. Its dynamic and **zone-based routing** can allocate resources to zones and minimize overlap between service areas. Its powerful automation can plan and dispatch over 5,000 orders daily with minimal human intervention.

- **Saved time and cost with Locus' geocoder:** The DMP helps to map addresses precisely and eliminate inefficiencies, saving time and cost. It deciphers even the fuzziest of addresses to convert them into accurate geo-coordinates for seamless routing. Locus' geocoding engine alerts dispatchers in case of poor address accuracy and the platform's strategic routing unlocks zone-level SLA and resource management to maximize driver efficiency.

- **Make the plan work with route optimization:** Locus' advanced route planning engine makes this possible by taking into account 180+ variables that include driver availability, delivery address, shipment volume, fuel efficiency, and traffic conditions. **Route optimization** helps determine the delivery windows and calculate the best possible routes while taking into account any last-minute unforeseen events.

- **Ramp up capacity with carrier management:** Locus' Capacity Management module helps to track, monitor and manage the performance of carriers while making room for the business' growing needs. It empowers dispatchers to organize driver schedules in a manner that suits both the person running the business and the one behind the wheel executing the job. Real-time quotes and SLAs provide intelligent recommendations and help businesses to ship orders through a vast carrier network at scale.

Conclusion: While supply chains are predominantly dependent on transportation and fuel in some form or another, carbon-neutral companies strive to balance out their carbon emissions with an equivalent amount of carbon savings elsewhere. With greater awareness around the fact that business activities have a direct impact on all aspects of climate change, supply chain enterprises are becoming more environmentally conscious and adopting green logistics systems in order to reduce the negative impact of transportation, shipping, packaging, and distribution activities on the environment.

Want to wield the power of data and digital tech to reduce your carbon footprint?
Book a demo with us!

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Locus

Locus is a leading-edge technology company dedicated to solving the most challenging all mile problems in global logistics.

1020m+
Total
deliveries optimized

12m+ kgs
Reduction
in GHG emissions

$288m+
Savings
in logistics costs

GROWTH, DELIVERED.

Know more