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WHITE PAPER

Reducing Carbon Emissions Through Logistics Software

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Introduction

Logistics businesses are being scrutinized on their sustainability practices, even as they face exacerbating challenges from COVID-19 disrupting the global supply chain and energy prices have spiked because of the global response to Russia's invasion of Ukraine.

Transportation is already ranked as the **second biggest contributor** to rising levels of greenhouse gasses¹. The average freight truck in the United States emits 161.8 grams of CO2 per ton-mile, according to the **Environmental Defense Fund**. CO2 emissions are particularly threatening, because the compound can persist in the atmosphere for up to 200 years.

Regulations around carbon emissions will place tremendous pressure on logistics enterprises. In August 2021, the Environmental Protection Agency announced **plans** to reduce greenhouse gas emissions and other pollutants from medium- and heavy-duty vehicles and engines through a series of rulemakings over three years. Fortunately, there are now effective and economical ways of stepping up to this challenge. Freight companies today are embracing new means and tools of moving freight and minimizing their carbon footprint. One tool that can be implemented quickly and utilized efficiently is freight software.

This white paper explains how and why the transportation, shipping, and logistics sectors can benefit from reducing emissions with an advanced logistics platform that optimizes loads and routes, and allows companies to reduce carbon emissions and improve ROI.

1. Energy consumption is by far the biggest source of human-caused greenhouse gas emissions, responsible for 76% worldwide. The energy sector includes transportation, electricity and heat, buildings, manufacturing and construction, fugitive emissions, and other fuel combustion. Within the energy sector, heat and electricity generation is responsible for most emissions in 2018, or 31.9% of total greenhouse gas emissions, followed by transportation at 14.2% of total emissions.

Optimization = Sustainability

Ecommerce surged during the COVID-19 pandemic, but it has become clear that its growth is here to stay. The global e-commerce market is expected to total **\$5.55 trillion** in 2022, according to *Shopify*, a 17.9% increase in market share over two years. Growth is expected to continue, reaching 24.5% by 2025.

The rise of e-commerce and package delivery worldwide necessitates the development of new solutions to meet customers' demands for more, faster and free deliveries. The pandemic and supply chain issues have heightened consumers' expectations for visibility into their shipping and delivery: More than 85% of consumers want full visibility into shipping timelines before making any online purchase, *ShipStation* reports.

McKinsey research indicates that 90% of online shoppers in the United States expect free two to three day shipping, while approximately 20 U.S. cities have densities that would typically justify the investments to enable same-day or next day fulfillment.

Meeting these expanding expectations is becoming increasingly difficult for businesses. Therefore, improving route optimization and driving long-term, sustainable growth is critical. A primary logistics concern is the expense attributed to the final mile. *iTechPosts* reports that the last mile accounts for 50% of overall transportation expenses, forcing shipping companies to impose surcharges to meet margins. Shippers must pass on some of the delivery costs to customers, a strategy that may jeopardize their appeal in the massive and competitive retail and ecommerce marketplaces.

“McKinsey research indicates that 90% of online shoppers in the United States expect free two- to three-day shipping...”

Peak freight, another industry challenge, occurs when retailers push inventory into the channel for back-to-school and holiday season shoppers. This impacts all freight modes, from ocean vessels to ports to rail and trucks inland, and impacts all freight capacity, based on the length of the peak and the strength of consumer demand. Peak increases the difficulty in sourcing freight capacity, decreases service levels, and forces freight pricing higher as shippers tap into the volatile spot freight market to augment their shipping requirements. The right freight software addresses and alleviates each of these issues.

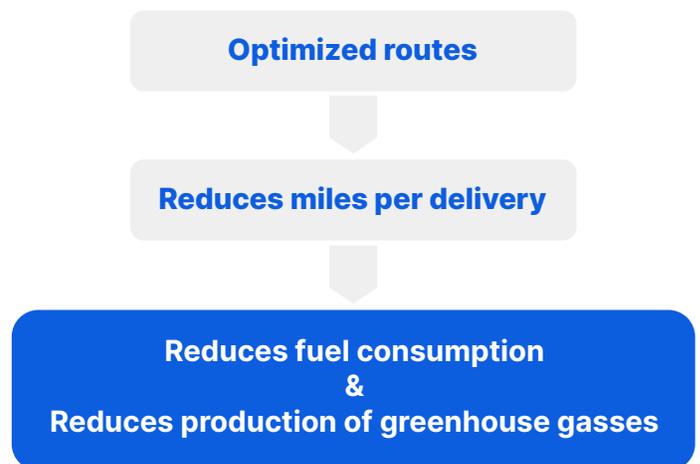
Advanced Logistics Platforms Can Help

A digital Transportation Management System (TMS) is specialized software for planning, executing, and optimizing the shipment of goods. A TMS allows shippers and carriers to find and compare the rates and services of carriers available to ship a customer's order, to book the shipment, and to track its movement to delivery. It improves shipping efficiency, reduces costs, provides real-time **supply-chain visibility** and ensures customer satisfaction.

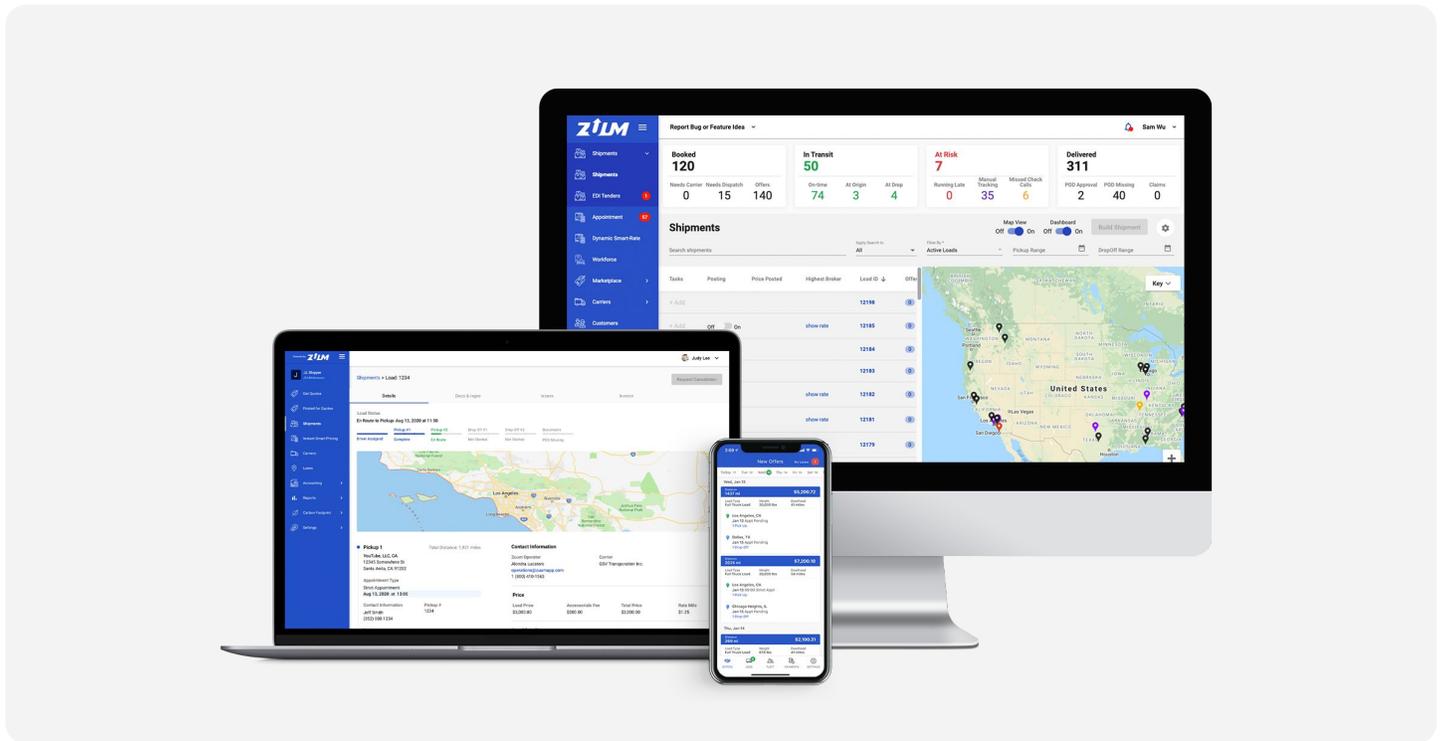
These advanced logistics management platforms also allow shippers to address the looming challenges of meeting consumer demand while also coping with rising expenses and environmental concerns.

A key feature for improving sustainability is these systems' ability to reduce miles per delivery. By using machine learning to enhance route planning, the platform unearths the most fuel-efficient route to execute deliveries and optimizes routes in real-time. By reducing miles traveled, it reduces fuel consumption, and production of greenhouse gasses— while cutting expenses and improving profitability.

A less apparent sustainability feature of an advanced logistics management platform is its ability to reduce paperwork. Paper is a significant contributor to increasing carbon emissions: Research from *N.C. State University* found that 1 tonne of paper emits more than 1.5 tonnes of CO2 into the atmosphere. Traditional execution of supply chain and logistics work entails a heavy dependency on paperwork. An advanced logistics management platform digitalizes core supply chain and logistics processes to curb paper usage. Automation of route planning is one of many cases where the platform makes it redundant to maintain and store physical documents.



Introducing the ZUUM Platform: Shipping Perfected



When looking for a digital freight brokerage operations platform, ensure that it is comprehensive. It should provide a streamlined process, efficient workflow, automated document management, end-to-end integration, real-time visibility, and secure universal integration. Without all of these components, users need to build in ancillary services.

The **ZUUM Logistics Super Platform** provides that complete solution. ZUUM enables customers to forecast, optimize and track every step of the delivery process, decreasing the number of empty miles wasted for shipping and headaches associated with the process. ZUUM's user-friendly technology optimizes and streamlines a business and automates freight in one centralized system. With an integrated

digital workflow, the users can connect and optimize the business workflow of the enterprise, its freight brokerages, freight carriers, and drivers.

ZUUM will book a truck, track shipments, automate reporting, and digitize office workflow. Whether scheduling a dry bed, reefer, or flatbed or requiring full truckload (FTL), partial or less than truckload (LTL), Zuum provides instant freight quotes for enterprises, mid-sized companies, and small businesses to achieve faster load management and move freight efficiently at reduced costs. Zuum's singular platform accesses local and national capacity, with over 100,000 pre-vetted carriers. Its automated reporting and secure integration offer end-to-end visibility for all logistics needs.

Empowerment Through Eco Friendly Logistic Solution



Reducing
Carbon Emissions



Optimizing
Energy Efficiency

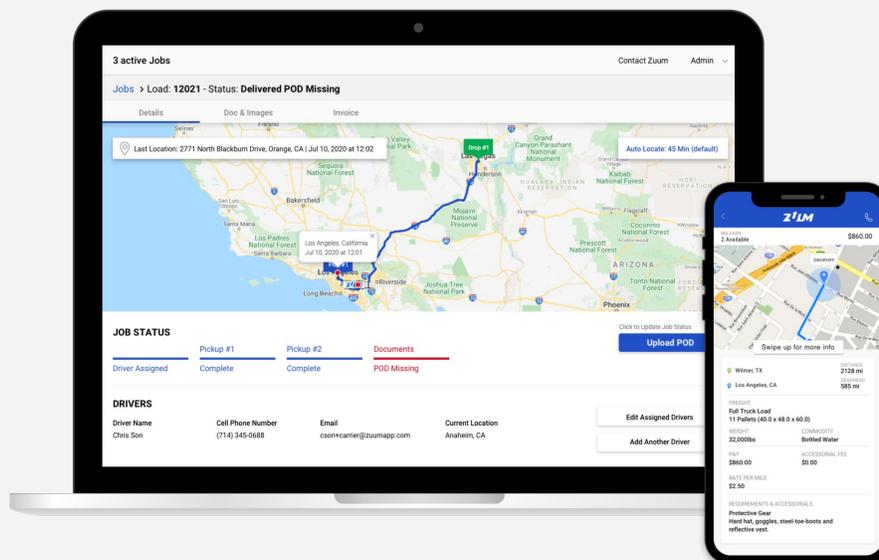


Eco friendly

“To date, ZUUM has saved 63.3 million pounds of carbon emissions.”

ZUUM has been empowering businesses across the United States to execute supply chain and logistics activities in **eco-friendly** ways and aims for net-zero carbon emissions by 2050. To date, ZUUM has saved 63.3 million pounds of carbon emissions. Its platform allows carriers to identify last-minute shipments to help minimize greenhouse gas emissions produced from empty miles. It optimizes energy efficiency through extensive communication and coordination between shippers, carriers, brokers, and drivers so they can reduce engine-idling and increase fuel efficiency.

ZUUM Transportation is committed to minimizing the repercussions the logistics industry has on the planet, creating new opportunities for logistic professionals, and continuing to be champions for change. Access capacity when and where it's needed. Optimize supply chain management and service levels.





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