

The Green Miles

Pioneering the path to sustainable transport solutions

Logistics UK explores the world of

decarbonisation

THE BIG INTERVIEW

Jakob Andersen, CEO of MASH Makes:
How we will remove one gigaton
of carbon from the atmosphere by 2040

INNOVATIONS IN MOTION

The giant cargo conveyer belt
linking Tokyo and Osaka

INDUSTRY INSIGHT

Global Maritime Forum's Jesse Fahnestock
on the shipping industry's green transition

Professor Philip Greening



*"A primary barrier to decarbonising transport is the inherent risk involved in such a large-scale transformation. This is where **digital twinning** comes in."*

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David Wells OBE
Chief Executive, Logistics UK



Welcome

Hello and welcome to this special Logistics Magazine decarbonisation supplement, *The Green Miles*.

As one of the leading business groups in the country, and the biggest in the industry, we believe it is important for us to give members the advice and guidance they need as well as the opportunity to find out more about the key issues affecting the sector, from some of the leading names in decarbonisation.

This supplement also marks the launch of a regular Green Miles e-magazine which will be emailed to members monthly to help you keep up to speed with all the issues affecting the industry's switch to a zero carbon future.



Tim Southwell
Editor & Chief Copywriter,
Logistics UK



Editor's letter

Welcome to *The Green Miles* supplement which features in depth interviews and opinion pieces from those setting the pace in the net zero movement, as well as a myth-busting column to answer the big questions facing our industry.

A big thanks go to our expert contributors who shine a light on everything from helping SMEs on their net zero journey to an initiative which seeks to remove a gigaton of carbon from the atmosphere by 2040.

As David mentioned, this supplement marks the launch of a new monthly e-magazine which will be landing in your inboxes very soon.

We hope that you find this supplement - and the monthly e-magazine - interesting and informative.

Please do let us know what you think by emailing the editor at:

editor@logistics.org.uk

We are very excited to launch *The Green Miles* at such a pivotal point on our industry's decarbonisation journey and look forward to hearing what you think of it.

The Green Miles

Pioneering the path to sustainable transport solutions

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CONTENTS

INDUSTRY INSIGHT

Digital twinning 4

INTERVIEW

The Big Interview: Jakob Anderson 7

SPONSORED CONTENT

The cost of fleet electrification 10

INDUSTRY INSIGHT

The shipping industry's green transition... 12

INNOVATIONS IN MOTION

Turning Japanese 15

Swiss roll..... 16

SPONSORED CONTENT

Tackling scope 3 emissions in automotive supply chains 18

SPONSORED CONTENT

From planning to performance: the tools driving sustainable fleets 20

SPONSORED CONTENT

Helping fleets to achieve their sustainability journey 22

IN BRIEF

China successfully trials driverless freight train 24

Home charging costs fall 24

DPD UK increases last-mile deliveries with electric vans 25

GREEN CLARITY

Providing the answers to your most-frequently asked questions 26

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Digital twinning

a critical tool for decarbonising transport

As the world grapples with the urgency of climate change, the need to decarbonise transport and logistics has never been more pressing. The transport sector is a significant contributor to global carbon emissions, and transitioning to a greener, more sustainable system is critical for the future.



Professor Philip Greening

Logistics expert at Heriot-Watt University in Edinburgh and a joint director of TransiT.

The UK has set an ambitious goal to achieve decarbonised energy by 2030, yet we find ourselves with only five to seven years left in the global carbon budget. The estimated cost of not decarbonising is significantly greater than the investment required to implement green technologies.

But in this context of rapid decarbonisation, a groundbreaking solution has emerged: digital twinning.

WHAT IS DIGITAL TWINNING?

At its core, digital twinning is the process of creating a digital replica of a physical system or object. In the case of transport, this means developing a virtual version of transport infrastructure, vehicles and energy systems.

In a logistics setting, for example, the digital twin can replicate a delivery company's shipment routes and movements, using real time data captured by sensors. The digital twin then analyses this data and sends back its solution for an improved

process to the physical world. This exchange happens almost instantly – in close to real time.

Logistics companies can use this digital twinning data to help them plan how to sustainably move freight in the future. This could include identifying the most sustainable routes, vehicle types, journey times, business models and collaborations.

REDUCING RISK AND UNCERTAINTY

One of the primary barriers to decarbonising transport is the inherent risk and uncertainty involved in such a large-scale transformation. Governments, industries and investors are often hesitant to adopt new technologies or systems without a clear understanding of their potential impacts. This is where digital twinning comes in. By creating detailed virtual models of transportation systems, decision-makers can simulate the outcomes of various decarbonisation strategies – before implementing them in the real world.

These models can account for a range of variables, including energy consumption, traffic patterns and the integration of renewable energy sources. By testing different scenarios in a risk-free digital environment, stakeholders can minimise the uncertainty associated with transitioning to a low-carbon transport system.

BREAKING DOWN SILOED THINKING

Siloed thinking is when different parts of a system or organisation tend to be focused internally and don't routinely share information or collaborate. In a highly fragmented universe like transport, siloed thinking presents a significant barrier to understanding and decarbonising the whole transport system.

Digital twinning can help break down these silos through virtual experiments that optimise the whole system – instead of one particular organisation's operations.

Digital twins can create a "system of federation," where different transport modes are seamlessly integrated. This opens the door to optimising the entire transport network, making it more efficient and less carbon intensive. For example, a digital twin could simulate how shifting freight from road to rail could reduce emissions, or how the integration of electric vehicles into the transport ecosystem could be managed more effectively. By addressing the issue of siloed thinking, digital twinning paves the way for a more coordinated and efficient transport and logistics system.

ADDRESSING HUMAN AND CORPORATE BEHAVIOUR

Human and corporate behaviour is another significant challenge in the decarbonisation process. People and organisations often resist change, particularly when it involves new technologies or unfamiliar ways of working. Digital twins offer

“In a logistics setting, the digital twin can replicate a delivery company's shipment routes and movements, using real time data captured by sensors.

The digital twin then analyses this data and sends back its solution for an improved process to the physical world.”

a solution by providing a platform where both human users and artificial intelligence models can learn from one another.

For example, digital twins can be used to train humans – like drivers, managers, engineers, or policymakers – by simulating different decarbonisation strategies and showing how they would work in practice.

At the same time, the models can learn from human behaviour, adapting to real-world conditions and improving their accuracy over time. This feedback loop between humans and digital twins can help overcome resistance to change by demonstrating the benefits of decarbonisation in a tangible, easy-to-understand way.

GENERATING AND STANDARDISING DATA

One of the biggest barriers to decarbonising transport is the lack of accessible, high-quality data. Without accurate data, it's impossible to make informed decisions or measure

progress towards decarbonisation goals.

Digital twinning offers a solution by generating new data through the deployment of secure, standardised "cyber-physical infrastructure." This is basically a combination of digital and physical systems. For example, our digital twins will collect data in real time from sensors connected to real-world infrastructure – like motorway, railway, shipping or flight monitoring systems.

By creating a common platform for collecting and analysing transport data, digital twins can make this information more accessible and discoverable. This, in turn, allows for better evidenced decision-making, better system optimisation, and a clearer understanding of the impact of different decarbonisation strategies.

HOW INDUSTRY CAN HELP

TransiT's success in using digital twinning to decarbonise transport will depend on the participation and collaboration of industry.

Providing accessible data is one of the key ways that industry players can contribute. The more data that's made available, the more accurate and effective the digital twins will be in optimising transport systems and reducing carbon emissions.

The TransiT Hub will use this data to develop a 'digital twin factory' – a central hub for creating and deploying digital twins across the transport sector.

This will enable different stakeholders – from governments to private companies – to participate in the digital twinning of transport.

By engaging with the digital twins and using them to test different decarbonisation strategies, companies can gain valuable insights into how they can reduce their own carbon footprints – while contributing to the wider, vital goal of decarbonising transport. ■



A UK DIGITAL TWINNING HUB FOR TRANSPORT DECARBONISATION

We have run out of time to carry out real-world transport trials and learn from them. So we have to do our experiments digitally – and digital twinning provides this solution.

The UK government has recognised this by supporting the creation of a new national research hub that will lead the use of digital twins to help decarbonise transport and logistics across road, rail, air and maritime settings.

Called TransiT, the hub is a collaboration of eight universities and 67 partners jointly led by Heriot-Watt University in Edinburgh and the University of Glasgow. It has secured £20 million in funding from the UKRI Engineering and Physical Sciences Research Council (EPSRC) – the main funding body for engineering and physical sciences research in the UK.

Another £26 million in support is being provided by stakeholders across the digital, energy and transport sectors, including transport operators, regulators, vehicle makers, technology companies and energy suppliers.

Through digital twinning technology, TransiT will identify the lowest cost, least risky and most energy-efficient way to decarbonise transport and logistics.

Key to this will be overcoming four primary obstacles: these are risk and uncertainty; siloed thinking across different segments of the transport ecosystem; the challenge of changing human and corporate behaviour – and the difficulty of obtaining and using accessible, reliable data.



The Big Interview: Jakob Anderson

CEO, Mash Makes

The Danish company MASH Makes aims to remove at least one gigaton of carbon from the atmosphere by 2040. Its mission is to produce bio-oil, hydrogen and electricity out of agricultural waste using automated machines. The main byproduct of this process is biochar – a soil amendment that actively absorbs CO₂ from the atmosphere. Biochar can then be used to enrich the soil and support the growth of plants.



Tim Southwell

Editor & Chief Copywriter,
Logistics UK

Above: MASH Makes' first production facility in Udupi, India.

The first operational MASH thermochemical plant is located in Karnataka, India, with multiple others planned to significantly expand carbon removal efforts globally.

So, we sat down with CEO Jakob Andersen to find out more...

Thanks for meeting with us, Jakob. So, what is Mash Makes' mission?

It's actually very straightforward. It's called 'gigaton thinking'. Our ambition is to remove at least one gigaton CO₂ equivalent from the atmosphere by 2040.

In just 16 years? That sounds extremely ambitious...

We have our own unique proprietary technology platform that enables us to do a lot of very exciting things, so we are very confident of this. The technology comes from the Technical University of Denmark. We are essentially standing on

the shoulders of these researchers, who have 40 plus years' experience within this field of research.

Fundamentally, we can take different types of biomass residues and process them to create an energy output. We turn agricultural residues into premium biochar, ideal for large-scale farming.

So, we can improve the output of, let's say, arid soils so that they can start producing biomass. By using bottom-of-the-chain biomass, we convert what would be waste into something valuable for agricultural soil – and the planet.

This creates a residue, so more biomass is created and that equates to a scaling of our platform. We want to produce fuel and other energy products in quantities that allow us to make a big dent in the GHG emissions.

How will your project affect and influence the logistics sector exactly?

We are currently focused on the shipping sector, but we hope to be able to expand across the sector. We are developing something that looks like a heavy fuel and eventually more diesel-like products and - in the not-so-distant future - hydrogen.

So, this can power a cargo ship?

Currently, the shipping industry does not anticipate the use of pure hydrogen as a standalone fuel. Instead, hydrogen is expected to be used as a component in other fuels. While other pathways like methanol and ammonia are being explored in the shipping industry, they require new infrastructure to be built. The transition to these new fuels will be gradual, and our gasifier technology is designed to support a range of fuels, including those that require new infrastructure.

Our focus today is on creating 'drop-in solutions'. These are fuels that can be seamlessly integrated into existing engines and infrastructure without the need for significant modifications. Converting to electricity would require extensive reworking of current systems, which is why we prioritise liquid fuels that can be used immediately within the existing infrastructure.

If there is a need for electricity, we can produce it. Similarly, we can produce ammonia, methanol, or hydrogen—our gasifier technology allows for this level of diversification. It's a versatile starting point that opens up various pathways depending on what the market requires. Our platform is designed to be relevant and adaptable to multiple energy solutions, ensuring we can meet the demands of different sectors.

Why not just focus on electricity?

Very few vessels, especially large ocean-going ships, run on electricity, and the demand for electric solutions in the shipping industry is limited. Focusing solely on electricity

“Our platform is designed to be relevant and adaptable to multiple energy solutions, ensuring we can meet the demands of different sectors.”

would require significant changes to existing infrastructure and storage systems, which is neither practical nor in high demand for the shipping sector.

By producing liquid fuels, we offer these 'drop-in solutions' that can be seamlessly integrated into existing engines and machinery. This approach avoids the costly and time-consuming retrofitting that would be necessary for electricity-based systems. Our focus on liquid fuels makes the transition to cleaner energy more practical and immediate, particularly in sectors like shipping, where flexibility and ease of implementation are crucial.

So, because the technology works in existing infrastructure, logistics operators don't have to have all the kinds of safeguards which you have for gaseous fuels or for methanol.

What particular safeguards are you referring to?

Fuels like hydrogen and methanol, which have low flashpoints, are fire hazards that require specialised safety measures, including pressurised storage, robust containment systems, and complex handling procedures to prevent leaks and manage high-pressure environments. These safeguards are essential due to the flammability and volatility of these gases.

However, only a fraction of the world's fleet is equipped with these safeguards, and therefore equipped to handle these fuels. That's why our biofuel, which can be used as a drop-in alternative to fossil fuels, is so powerful. It does not require changes to existing infrastructure.

This is crucial, as reengineering current machinery and retrofitting ships is a nightmare for the shipping industry – it requires ship owners to take vessels out of service and then spend a heck of a lot of money on these alterations. The sector has been calling for something like this for a long time.

In addition, even if today the whole shipping sector decided that it was going to commit to retrofitting ships, it wouldn't be able to do this quickly because there's simply not enough shipyards on the globe to achieve that. Having these drop in fuels is key to transitioning to net zero shipping.

In fact, these fuels are far more scalable than many people would currently believe. Our most recent versions of fuel are much closer to diesel than earlier versions. And we are just progressing along that line. We will - very soon - be able to synthesise things like methanol, ethanol and all those fuels that are used in the logistics sector.

That's really the pathway we're starting with – going for the lower hanging or lower grade products and then moving into ever more ambitious commodity targets.

How well known in the shipping industry has MASH Makes become?

We are talking to a lot of the world's biggest ship owners, and they are following this very, very closely and with a great deal of interest. We've not been that deliberate in publishing anything because we already had so much interest from these parties.

I think there's been a big, positive shift towards alternative

Biochar, seen here, is an ash-like material made by heating plant waste, like wood or crop leftovers, in an environment without oxygen. MASH Makes biochar, has been proven to help plants grow better by improving the soil's ability to hold water and nutrients. Biochar also helps the environment by trapping carbon in the ground, which helps reduce the amount of carbon dioxide, a major cause of climate change.





fuel solutions like our bio-oil. It is very clear from recent developments that they are really eyeing this space, the biofuel space, the pyrolytic, or the thermochemical biofuel space as something that will have a much bigger role.

Do you see a time when you would be able to supply en masse, other modes of transport?

Absolutely. Ours is a gigaton ambition, right? There's a finite amount of stuff like uranium and gold on the earth but the thing we have in our own production is an output which is literally able to turn deserts into productive biomass systems.

We are going to do this in India in the near future - find arid areas that are today unproductive and treat them with our biochar channel.

We will make sure that there are meaningful allocations to local farming communities so they can gain from these areas being developed. And then we ask, ever so kindly at the end of the day, could we take your residues, right?

You don't care if they're going to produce food for local systems or wood for materials, we just want to take the residues that would come from whatever they're doing.

That is a key component to our scaling strategy. These are like two dots that have just been sitting there and for some reason, no one's ever drawn a line between them. It's so obvious and this is something we are trying right now in India.

Can you give me an idea as to how big the company is?

MASH Makes is comprised of a team of 65 people across Denmark and India. Our existing site in India is reaching optimum productivity later this year and we have already funded the next one. Our existing plant is producing biochar as we speak and we're very close to closing on the third and fourth sites.

We can maybe build 50 to 100 more factories of this particular type. But if we are to have the necessary impact, we will need literally tens of thousands of them.

If something goes wrong, if there's a problem, like a drought,

Above: A MASH Makes research scientist explains the benefits of biochar to Indian farmers, highlighting how it improves soil health, boosts crop growth, and helps combat climate change by capturing carbon in the soil.

bureaucracy or corruption, whatever, you can literally pick the stuff up and redeploy it elsewhere.

And so why India? Is that because it's very rich in the resources you need?

Exactly. This isn't the classic Danish commercial rollout fantasy, which is 'let's make it work in Denmark and then we go to the rest of the world'. Denmark doesn't look anywhere like the rest of the world. India is of a lot more like the rest of the world than Denmark.

By this I mean, for example, the cost of labour. If I was to do something like this in Denmark, I would have a very high degree of automation in place compared to the likes of India or Kenya. That simply means that I'm missing out on the opportunity for local job creation, the chance to create a decent job for someone.

But the main reason from a strategic perspective is that there are just far greater biomass residue resources in India, in sub-Saharan Africa, and in South America. Europe really isn't the panacea for bioenergy that many would have us think. The big resources are elsewhere on the globe, and we want to develop a solution that works on a global scale.

Maybe the future for British logistics could be to source fuels that are produced sustainably and responsibly with great positive social and environmental impact in a place like India.

Biochar creation must be on government radars as well as businesses?

There is a sort of humanitarian tint to it, yes, and we're seeing a lot of interest from what you call development, finance institutions, who are typically government bodies or semi government bodies.

Even NGO funds - these big development funds have heard of it - like the Bill and Melinda Gates foundations of the world. So yes, absolutely. In our work, there's a synergy between creating better lives for impoverished populations and at the same time strengthening sustainable energy systems. That's a win. ■

The cost of fleet electrification

Total Cost of Ownership (TCO) is the model to calculate the cost of an electrification transition project, taking account of the lower running costs of an EV fleet compared to diesel and allowing more innovative and longer-term financing. TCO is lower for EV than diesel in many use cases and reducing as battery prices decline, technology evolves, and vehicle OEM's scale up to mass production. It is possible to achieve fleet electrification today for net zero additional cost.

MAKE INFORMED DECISIONS ABOUT YOUR EV TRANSITION

Stage one is to make robust decisions about the transition based on data from the existing fleet – telematics, power and operations. After analysing these data sets, we give our fleet operators phased implementation plans to go at the right pace to suit the business' sustainability goals, and covering key aspects like power demand, charging infrastructure and route planning.

An important part of this assessment is right sizing the fleet's power requirements. We can determine if a grid upgrade or solar and battery storage is needed and build a strategy to anticipate future needs and plan costs.

MAXIMISE THE PERFORMANCE OF YOUR EV FLEET

An EV fleet essentially runs on data insights, from power to chargers, routes, schedules, shift patterns, seasonality, weather and more. Management platforms (such as VEV-IQ) give fleet operators the data insights needed to drive EV fleet efficiency up and manage costs down. Simply managing energy consumption through smart charging can offer 10-15% cost reduction.

EVs require less service and maintenance than diesel of up to 40% and there are other cost-efficiency gains to be

VEV



Mike Nakrani
CEO, VEV



found in how EV fleets are operated. By taking a forensic approach to power usage and developing a micro-grid with solar generation and battery storage, significant cost savings can be made in power consumption. Driver training is another factor – the prevailing statistic is that range can be increased by 20% with proper EV driving.

Like an Olympic cycling team, the performance of an EV fleet can be optimised through multiple marginal gains.

DO THE RIGHT CALCULATION

Adjusting the mindset from separate upfront capex costs to modelling total cost of ownership (TCO) for the lifetime of a fleet is critical to enable more innovative and longer-term financing.

The typical capital cycle for a diesel vehicle in a fleet is 7 years whereas with EVs it's 15 years with lower redundancy and running costs compared to diesel. And with the continued investment by OEMs in long range, lower cost vehicles, there will be greater choice too. That's a big positive. ■

For more information, click or tap [here](#)



Navigating net zero: The shipping industry's green

The shipping industry, a vital cog in the global economy, faces an unprecedented challenge: transitioning to a net zero future. As the world grapples with the urgent need to mitigate climate change, the maritime sector, responsible for approximately 3% of global greenhouse gas (GHG) emissions, must accelerate its decarbonisation efforts. Without doing so and with global trade predicted to rise, emissions from the maritime sector could reach up to 10% of greenhouse gas emissions by 2050.



Jesse Fahnestock

Director of Decarbonisation
at the Global Maritime
Forum

The International Maritime Organization (IMO), a global authority responsible for shipping safety and reducing marine pollution, has introduced ambitious goals to achieve net zero emissions by 2050 as part of its Greenhouse Gas Emissions Strategy, introduced in 2023. As part of these efforts, a key target for 2030 is to ensure that 5% to 10% of shipping fuel is derived from zero- or near-zero emission fuels.

Achieving net zero in shipping is complex due to its unique operational and technical constraints. Unlike other sectors where electrification or renewable energy can be more easily implemented, shipping involves large vessels operating across vast distances with long life cycles and fuel-intensive propulsion systems.

THE RISE OF ZERO-EMISSION FUELS

The backbone of decarbonising shipping will be the development and adoption of zero-emission fuels. Currently, the vast majority of the global fleet runs on heavy fuel oil, a highly polluting fuel source.

Several alternative fuel options are under consideration, including green ammonia, a carbon-free fuel with significant promise but requiring breakthroughs in storage, handling, and safety protocols, which the industry is tackling through a number of pilot projects.

There's also green methanol, another promising candidate, but one with significant production, storage, and cost challenges due to its energy intensity and reliance on a source of renewable carbon.

Each of these fuels has advantages and drawbacks, and no single solution is expected to dominate in the short term. The path to decarbonisation will likely require a multifuel solution, with regional and operational differences dictating which fuel is best suited for particular trades and routes.

Projections from analysis conducted by the Global Maritime Forum and Arup, "Green Jobs and Maritime Decarbonisation", show that shipping's demand for zero-emission fuels could reach up to over 500 million tonnes by 2040, rising to 600 million tonnes by 2050, which will require trillions in capital investment. This can prove to be a boon for the Global South, where conditions are optimal for the production of zero-emission fuels creating a new wave of green jobs across the supply chain, which could create up to four million opportunities by 2050.

SCALING ZERO-EMISSION FUELS

Scaling zero-emission fuels is a central goal for the industry, with the IMO setting ambitious targets of reaching 5% availability and striving for 10% by 2030.



transition

Demand aggregation is a strategy that involves combining the purchasing power of multiple stakeholders to create a larger market for zero-emission fuels. This can help overcome the “chicken and egg” problem where producers hesitate to invest in large-scale production without sufficient demand, and shipping companies are reluctant to commit to long-term contracts for fuels that are still relatively expensive and limited in supply.

One example of demand aggregation is joint procurement, where groups of shipowners, operators, or charterers collaborate to purchase zero-emission fuels collectively. This can create a more attractive market for fuel producers, leading to lower prices and increased availability. Another approach is for a third-party, such as a port or national government, to play a match-making or even market-making role, connecting buyers and suppliers and possibly even running auctions for purchase and sale of the fuels. This can reduce the financial burden on individual shipping companies and encourage them to adopt zero-emission fuels.

UNLOCKING THE FLOW OF CAPITAL

Decarbonizing the shipping industry will require a monumental shift in capital allocation. Estimates suggest that the transition to net zero could require more than £1 trillion in additional investment by 2050. This will include investments in new fuels, ships, infrastructure, and supply chains. The financing challenge is not just about the size of the investment but about who will bear the cost.

Many shipping companies operate on razor-thin margins, and there is uncertainty over who should pay for the transition. Will it be shipowners, charterers, cargo owners, or even end consumers? The introduction of carbon pricing mechanisms

Jesse Fahnestock is Director of Decarbonisation at the Global Maritime Forum, overseeing the organisation’s pioneering work in the Getting to Zero Coalition, Poseidon Principles, Sea Cargo Charter, and Green Shipping Corridors. His work with the maritime industry’s first movers helped establish Green Corridors as a core element of shipping’s decarbonisation transition.

His background is in energy and climate, with 20 years of experience working with business, research, and civil society on delivering the energy transition. In the early 2000’s he helped establish the Global Risks program at the World Economic Forum, where his focus was on climate and energy security risks. He then served as climate policy advisor for the Swedish power company Vattenfall, and later led the energy and policy foresight work at the Swedish national research institute RISE. Before joining the Global Maritime Forum, he was global lead for the Energy Transition at WWF International. Jesse holds a bachelor’s in history from Princeton University and a master’s in business from the University of Oxford. He lives in Stockholm, Sweden.

such as the EU Emission Trading Scheme may help internalise the cost of emissions, but creating a truly level playing field will require robust policies from the IMO - policies that drive an early transition to new fuels and ensure that higher costs do not create an extra burden for the poorest and most vulnerable countries.

Financial institutions are also grappling with how to finance the shipping industry’s transition. *The Poseidon Principles*, a voluntary initiative that aligns ship finance portfolios with climate targets, is an important step in the right direction. But further work is needed to unlock the vast sums of capital required to achieve net zero.

Governments and private investors will need to work together to create financial instruments that lower the risk of investing in green technologies and provide incentives for first movers.

THE PATH FORWARD

At the Global Maritime Forum, we believe that the shipping industry is capable of rising to this challenge. By seizing the opportunities presented by decarbonisation, the sector can not only reduce its environmental impact but also build a more resilient, innovative, and competitive future. The transformation to net zero shipping is not just an obligation—it is an opportunity for the industry to lead the way in shaping a sustainable global economy. ■



Turning Japanese

Colossal cargo conveyor belt system to tackle driver shortage and radically reduce emissions in Japan.



Tim Southwell
Editor & Chief Copywriter,
Logistics UK

The Japanese government plans to connect major cities with automated, zero-emission logistics links to transport millions of tons of cargo quietly and efficiently, removing tens of thousands of trucks from the roads.

Japan’s population is falling at a rapid rate and, according to a recent study by Nomura Research Institute, the amount of delivery drivers in Japan is set to fall from 660,000 in 2020 to just 480,000 by 2030.

With online shopping continuing to escalate, there are genuine concerns that the transport industry will not be equipped to meet freight demands in the future. So, what do you do?

Well, Japan’s Ministry of Land, Infrastructure, Transport and Tourism has come up with an ambitious plan to create an Autoflow-Road conveyor belt system between Tokyo and Osaka which could carry the same amount of freight as 25,000 truck drivers every single day.

The 310-mile conveyor belt system not only addresses the logistics issue – alleviating traffic congestion on the country’s busiest highways – but will also have a positive knock-on effect by reducing carbon emissions from freight transport in the country.

The Autoflow-Road will be built in a variety of locations: underneath major highways; on above-ground tracks in the middle of roads; and along hard shoulders. Each pallet is estimated to be able to hold one ton of cargo.

Logistics UK’s Head of Engineering Policy, Phil Loyd commented: “The Autoflow road project in Japan is a very exciting innovation and this will be an incredible feat of engineering once completed.

“Logistics UK had a similar idea for the UK which we showcased at a Zenic event a few years ago as part of our presentation of User Cases that could be considered as part of the route to autonomy.

“Our idea was a hyperloop system from ports to distribution centres using old railway tracks. I think Japan’s Autoflow road probably has greater merit – again this is something we’ve suggested for the UK, dedicated lanes on the motorway for connected autonomous vehicles.

“Logistics UK will watch with keen interest how this unfolds.”

The Japan Ministry of Land, Infrastructure, Transport and Tourism has taken its inspiration from the mining industry, specifically the 23km (14 mile) conveyor belt in Kōchi prefecture and the 100km (62 mile) belt in Western Sahara.

It might be a while before we see the plan come to fruition (the ministry has suggested a completion date circa 2034), and cost estimates vary from seven billion yen (£33 million) to 80 billion yen (£388 million).

The ministry is now looking to proceed with discussions for the project and is courting private companies to fund it. In case you were wondering, a similar distance for the Autoflow Road to cover in the UK would be the 294 miles it would need to cover to connect Folkestone and Liverpool. ■

Swiss roll

Solar panels are set to be rolled out “like carpet” on railway tracks in Switzerland in a world-first. Swiss start-up Sun-Ways has been given the green light for a three-year pilot project in the western canton of Neuchâtel, with work to begin in spring 2025.



Tim Southwell

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The Swiss company will use a mechanical system to install its removable solar panels. A train developed by Swiss track maintenance company Scheuchzer will travel along the rails, laying photovoltaic panels as it goes.

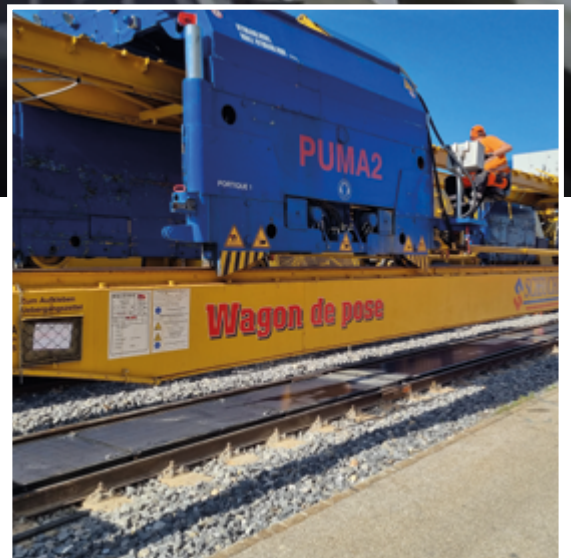
Sun-Ways CEO Joseph Scuderi said: “This will be the first time that solar panels will be installed on a railway track with trains that pass over them. The removable innovation is a crucial one since railway tracks need to be cleared from time to time for essential maintenance work.”

After ten months of building and testing prototypes, Sun-Ways has secured a permit to begin applying the technology to an open line in Neuchâtel and begin a three-year test phase.

During this time, 48 panels will be added to a 100-metre section of track operated by transN, the canton’s public transport company, at a cost of roughly CHF585,000 (€623,000). Electricity produced by the PV system will be fed into the power grid and used to power homes as feeding it into railway operations would be a more complicated process.

Logistics UK’s Senior Policy Advisor, Ellis Shelton, said: “The rail industry plays a crucial role in logistics worldwide and it is encouraging/exciting to see Sun-Ways’ ‘Rolling carpet’ rail track project get underway in Switzerland.

“Innovation is key to the sector achieving its net zero goals, and it is vital that the UK logistics sector works together to



promote rail freight adoption among new businesses, invest in modern facilities and leverage data technology, demonstrate a forward-thinking approach.”

Beyond Switzerland, the company is involved in similar projects being planned in Spain, Romania and South Korea.

There are over a million kilometres of railway lines in the world and Sun-Ways believe that 50 per cent of the world’s railways could be equipped with their system.

The company still has a lot to prove with its pilot project, however. The International Union of Railways previously expressed concern that the panels could suffer micro-cracks, lead to a higher risk of fires in green areas and even distract train drivers with reflections.

Sun-Ways said its panels are more resistant than conventional ones and could have an anti-reflection filter to keep out of train drivers’ eyes.

Built-in sensors also ensure they work properly while brushes attached to the end of trains could remove dirt from the surface of the panels. ■

Tackling scope 3 emissions in automotive supply chains

Unipart Logistics highlights the difficulties in measuring and controlling emissions across numerous suppliers and processes. It emphasises the need for robust measurement systems, supplier engagement, and innovative technologies to achieve carbon neutrality.

Read Richard Hankinson's insight paper that offers best practices, innovative approaches, and expert guidance on reducing Scope 3 emissions in the automotive sector.

In an era where sustainability is no longer optional, the automotive industry faces a monumental challenge: managing Scope 3 emissions. These indirect emissions, occurring throughout a company's value chain, account for a staggering up to 98% of an automotive company's total carbon footprint. As pressure mounts from regulators, consumers, and investors, addressing these emissions has become crucial for meeting sustainability goals and maintaining competitiveness.

THE SCOPE 3 CONUNDRUM

Imagine trying to measure and control emissions from thousands of suppliers across multiple tiers, spanning raw material extraction to end-of-life vehicle disposal. This complexity is just the tip of the iceberg when it comes to managing Scope 3 emissions in the automotive sector.



Richard Hankinson
Sector Strategy & Business
Development Director -
Automotive, Unipart Logistics

Key challenges:

- Intricate supply chains with limited visibility into lower-tier suppliers
- Data collection and quality issues across the value chain
- Balancing emission reduction with cost and performance requirements
- Measuring and influencing end-user vehicle emissions

A ROADMAP TO REDUCTION

Despite these challenges, leading automotive companies are making strides. From establishing comprehensive measurement systems to engaging suppliers and leveraging cutting-edge technologies, the industry is slowly but surely charting a course towards carbon neutrality.

But how exactly are they doing it? What strategies are



Ability to measure and move needle on scope 3 carbon zero targets

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proving most effective? And how can your company navigate this complex landscape?

Our latest insights paper, "Ability to measure and move the needle on scope 3 carbon zero targets," dives deep into these questions. Authored by Unipart Logistics' Head of Automotive Sector, Richard Hankinson, it offers invaluable insights into:

- Current industry benchmarks and best practices
- Innovative approaches to measurement and reduction
- The role of external support in emissions management
- Future outlook and opportunities for the sector

READ OUR EXPERT INSIGHTS

Discover how your company can transform ambitious carbon reduction goals into tangible, measurable progress towards a sustainable future. Don't miss out on this crucial resource for anyone involved in automotive sustainability efforts.

Download our insight paper now and accelerate your automotive company's journey to reducing scope 3 emissions:

To download, click or tap [here](#)

From planning to performance: the tools driving sustainable fleets

The race towards a greener future for transport is accelerating, with the transition to electric vehicles (EVs) sitting at the heart of this movement. However, to truly achieve an environmentally sustainable future in fleet management, industry-wide innovation and collaboration are crucial. Fleets need access to intelligent solutions that simplify the switch to electric mobility and drive sustainable practices throughout their operations.

UNIFIED PLATFORMS SIMPLIFYING THE EV TRANSITION

One of the key challenges for fleets adopting EVs is the complexity of integrating energy and mobility services.

Industry innovation is now addressing this with technology capable of connecting fleet managers with leading service providers, streamlining access to energy management, battery analytics, EV charging and routing solutions – all in one place.

A recent Webfleet development, the EV Services Platform, enables fleets to select tailored options for their specific electric objectives, whether it's infrastructure planning or cost optimisation.

The platform, for example, offers integrated hardware and software for charging, providing expert guidance on infrastructure needs and the means to monitor charging practices. By incorporating smart charging solutions, fleets can reduce costs and emissions, avoiding peak energy loads and utilising renewable energy sources more effectively.

This kind of technology also provides comprehensive energy management insights, guiding fleets on infrastructure, energy balancing and securing optimal tariffs.

Furthermore, real-time battery analytics have become pivotal in improving vehicle reliability and extending battery lifespan, while route planning tools now take account of energy, charging and battery constraints, enhancing overall fleet efficiency.

PLANNING TOOLS TO AID THE EV JOURNEY

The decision to electrify a fleet is not one to be taken lightly and it requires careful planning. Innovative tools that leverage



Beverley Wise

Webfleet Regional Director for Bridgestone Mobility Solutions

fleet data to identify vehicles suitable for conversion can play a crucial role in this transition.

Building on the power of the EV Services Platform, Webfleet's EV Transition helps fleet managers identify vehicles eligible for conversion and advises on suitable EV models, infrastructure requirements, and cost implications.

Such tools can also connect fleets directly with EV experts for tailored advice on the necessary charging infrastructure, removing guesswork and facilitating a smoother, more efficient electric transition.

DATA-DRIVEN FLEET MANAGEMENT FOR SUSTAINABILITY

The conversation around sustainability extends beyond vehicle choice – it's about optimising overall fleet performance.

Recent advancements in AI technology are now enabling fleet managers to interact with their data in more intuitive ways. The Webfleet AI Assistant, for instance – a beta project in collaborating with customers – marks a new era in fleet management. Through the use of generative AI, managers can pose questions about fuel consumption trends, driving behaviour and other key indicators, receiving immediate, tailored responses.

This access to real-time and historical data allows managers to make more informed decisions, addressing issues such as idling, speeding, and harsh braking to improve efficiency and sustainability. These AI-driven solutions are paving the way for smarter fleet management, allowing for quick and accurate adjustments that align with green goals.

A ROADMAP TO SUCCESS

The drive towards greener fleets intensifies as more innovations come to market, helping businesses meet their sustainability objectives.

The future of transport hinges not only on adopting electric vehicles, but on creating an interconnected ecosystem that supports sustainable operations at every stage.

Together, through continuous innovation and collaboration, the fleet industry can pave the way for a greener future. ■

For more information, click or tap [here](#)

Helping fleets to achieve their sustainability journey

Fleets across Europe are turning to fuel-efficient tyres as part of their drive to improve the sustainability of their operations, but does it come at the expense of performance and profitability? And can solutions play a part in cost reductions and sustainability?

What role do tyres play in a fleet's sustainability goals?

As the only contact point between a vehicle and the road, the role of tyres should not be underestimated. Choosing the right tyres and maintaining them properly can help fleets save fuel and increase their range, reducing their impact on the environment and saving money with each mile driven.

How do fleets know what to look for in a tyre?

Sustainability can be achieved while keeping with the use of premium tyres and can also come with financial benefits. We have addressed this concern with our new **EQMAX** and **EQMAX ULTRA** range of tyres, which offer up to **20% better mileage** and up to **6% improved rolling resistance** compared to their predecessors.¹

As more and more operators add electrified vehicles to their fleet, tyre manufacturers need to offer products that are suitable for all vehicle types. Goodyear EQMAX and EQMAX ULTRA are **Electric Drive Ready**, meaning they are suitable for diesel, gas, electric and hydrogen trucks. With a higher load capacity than conventional tyres of the same size and lower rolling resistance, they help to optimise the range of electric vehicles without compromising on performance for other vehicle configurations.

What can fleets do to maximise the efficiency and sustainability of their vehicles?

It's clear that tyres come to mind when fleets consider their sustainability strategies; in the latest edition of the Goodyear Sustainable Reality Survey (viewed at news.goodyear.eu), we found that 52% of fleets are prioritising fuel-efficient tyres. There are steps they can take before purchasing new tyres, though.

¹ In comparison to predecessor, based on internal Goodyear data.



Richard Tawlks

Manager Fleet Mobility, UK,
Goodyear

For more
information,
click or tap
[here](#)

Maintaining the right tyre pressure is an easy fix to save fuel and money. A tyre pressure monitoring system (TPMS) can give real-time data and proactive alerts to avoid potential tyre-related issues before they happen. **Goodyear's TPMS** can lead to 90% fewer tyre-related issues², providing time savings and increases on the rate of on-time deliveries.

Goodyear's Total Mobility package combines tailor-made solutions that drive operational efficiency, reduce downtime and lower costs. Goodyear's TPMS is part of this, along with **Goodyear CheckPoint** a yard-based system that delivers essential measurements in seconds. The system can contribute to reduce maintenance hours as tyre checks are performed in seconds. It can help maximise uptime as checking tyre status reduces the likelihood of tyre-related breakdowns. Goodyear CheckPoint also contributes to optimal fuel consumption by making it easier to maintain perfect pressure in each tyre and longer-lasting tyres, as the right tyre pressure can extend the tyre life.

How will tyre manufacturers keep up with sustainability targets?

Tyres have definitely become more sustainable throughout their entire lifecycle. Retreading and regrooving can extend the life of tyres by **150%**³ and reduce the amount of crude oil used in manufacturing by **56%**⁴. Recent developments have also allowed for more sustainable practices at the start of a tyre's life, too. Goodyear is among the leaders with this trend; released in 2024, the EQMAX and EQMAX ULTRA tyres are made of up to **55% sustainable material**⁵, including ingredients like silica based on Rice Husk Ash, a byproduct of rice processing that is often discarded to landfill.

² Comparison of 50 fleets before and after installation of Goodyear TPMS, 2019.

³ Based on internal analysis, comparing the use of a new Goodyear tyre versus a new Goodyear tyre that is regrooved, retreaded and regrooved a second time.

⁴ Based on internal data.

⁵ EQMAX range featuring up to 55% of sustainable materials. Goodyear defines sustainable material as a bio-based (defined as material of biological origin (Source: ISO 14021)); renewable; or recycled (defined as material that has been reprocessed from recovered [reclaimed] material (Source: ISO 14021)) material; or one produced using or contributing to other practices designed to promote resource conservation and/or emissions reductions, including ISCC PLUS mass-balance (defined as a certification verifying our capability to track the amount and sustainability characteristics of circular and/or bio-based material in the value chain and attribute it based on verifiable bookkeeping (Source: www.iscc-system.org/certification/chain-of-custody/mass-balance/)) material.

China successfully trials driverless freight train

China is no stranger to unmanned urban rail systems, but - for freight rail - a recent test run represented a groundbreaking moment.

In a bid to boost logistics efficiency, the country has now successfully tested a driverless coal train on an approximately 150 kilometre stretch of railways.

The test, China's first "smart heavy-haul railway transportation paradigm", works with a centralised station control system and an intelligent driving system, and

was performed on an unmanned heavy-haul train on the railway connecting North China's Hebei and East China's Shandong provinces.

The successful project marked a key milestone in advancing from automated to unmanned heavy-haul railway technology. Comprising 108 cars with a total length of nearly 1,300 meters and a total weight of 10,800 tons, the test train travelled from Huanghua city in Hebei to Dongying city in Shan-

dong in two and a half hours on 26 September, according to China Media Group (CMG).

The test route is primarily used for coal transport. Once unmanned driving is widely adopted, the average operation speed of the nation's trains will be increased by 1.7 kilometres per hour, while the average traction energy consumption will decrease by 2.9 percent, significantly boosting transportation efficiency of China's west-to-east coal transportation.

Previously, the unmanned train technology was primarily used in urban rail systems both in China and abroad and has not yet been applied on a large scale on heavy-haul transport railways.

Three key technologies of the test train - comprehensive support and simulation, remote control and autonomous driving, and integrated safety monitoring from air, space, and ground - fill critical manufacturing gaps in China. ■



Home charging costs fall

The cost of charging electric vehicles (EVs) on standard rate domestic tariffs has fallen and drivers will pay less than five pence a mile, according to the AA EV Recharge Report.

The rate, a result of the 2p reduction in the energy price cap which took effect from 1 July, is the 'worst case' scenario, and EV drivers can pay even less if they plugin at off-peak times, typically overnight.

Across the public charging network, all tariffs remained static, and the Department for Transport's latest statistics show the number of publicly available electric vehicle charging devices in the UK has risen 47% to

64,632 compared to 1 July 2023.

Head of Cities and Infrastructure Policy at Logistics UK, Jonathan Walker said, "The electric van operators whose drivers charge their vehicles at home will be able to take advantage of cheaper electricity, but it is the public charging infrastructure that will ultimately power the sector's transition to net zero.

"At the moment, public charging infrastructure has an uneven geographical distribution and is not being delivered with logistics in mind. It is this infrastructure that needs to be delivered at pace if the sector is going to meet its environmental goals and



Jonathan Walker

maintain the supply chain.

"The amount of energy required for the UK's fleet of HGVs and vans to be fully electric or hydrogen fuel cell is substantial so it is also critical that the national grid can handle the uplift in demand for power." ■



DPD UK increases last-mile deliveries with electric vans

Parcel company DPD UK has reported that it is on target to deliver a 46% reduction in emissions by the end of 2024, from the 2020 baseline, with a third of its final mile van fleet now electric and 95% of its transport fleet running on HVO (Hydrogenated Vegetable Oil).



Michelle Gardner

The company is targeting a 46% reduction in emissions by year end with a third of its final-mile fleet now electric. An additional 350 EVs (4.25t Ford eTransits) are being deployed over the next few months which will take its EV fleet close to 4,000 strong.

The announcement comes as the Society of Motor Manufacturers and Traders (SMMT) reports that battery electric vehicle (BEV) registrations for July were down to 1,415 units (-14.6%).

Since January 2024, BEVs have ac-

counted for 5.1% of all new vans and SMMT predicts that BEV share of LCV registrations under 3.5 tonnes will be 6.6% by the end of the year.

Logistics UK, alongside partners of the Zero Emission Van Plan Campaign, has been calling on government to ensure van fleet operators have the confidence to invest in zero emission vehicles and Michelle Gardner, Deputy Director – Policy at Logistics UK said, “While it’s fantastic news that large operators are making significant progress greening their fleets, more needs to be done to help smaller operators.

“A simple legislative change requiring no infrastructure would be to align 4.25 tonne electric vans with 3.5 tonne diesel vans. The batteries in electric vans make them heavier than the equivalent sized diesel vans, meaning operators that make the switch are exposed to costly licensing, more expensive MOTs and drivers’ hours rules designed for HGVs.

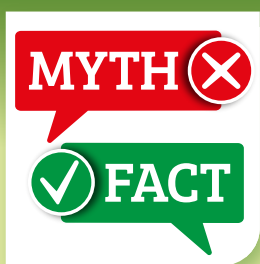
“Aligning electric and diesel vans would help remove the regulatory barriers that are currently limiting the uptake of electric commercial vehicles.” ■



“ I see a future where getting to work or to school or to the store does not have to cause **pollution** ”
Bernie Sanders



Providing the answers to your most-frequently asked questions



Question Number 01 John (Fleet Manager) *“I’ve heard that the national grid won’t be able to handle the transfer to electric vehicles...”*

There are two aspects to whether the electricity grid can manage lots of EVs being plugged in at once:

- Whether enough electricity is available.
- Whether the wires that carry that electricity have enough capacity to do so.

It’s important to remember that the shift to EVs is happening gradually – not overnight. Renewable energy sources are constantly being developed to supply us with more clean and green electricity, and we’re constantly evolving the electricity grid to be better equipped to handle it – including through the National Grids Great Grid Upgrade, the largest overhaul of the electricity transmission network in generations.

One of the main sources of concern for people has been the scenario of all EV owners charging their EVs at the same time. So, is it possible to spread out the demand, while still making sure we all get our EVs charged when we need it?

The short answer is yes.

The UK Government has introduced Electric Vehicle Smart Charge Points Regulations, which ensure that EV charge

points will have smart functionality; allowing the charging to happen when there is less demand on the grid, or when more renewable (and therefore often cheaper) electricity is available.

This means that no matter what time you plug in your car, it will charge when you need it but can automatically pause during those peaks when demand on the grid is highest and energy is most expensive.

The most demand for electricity in recent years in the UK was for 62GW in 2002. Since then, the nation’s peak demand has fallen by roughly 16% due to improvements in energy efficiency.

Even if we all switched to EVs overnight, we believe demand would only increase by around 10%. So, we’d still be using less power as a nation than we did in 2002 and this is well within the range of manageable load fluctuation.

A significant amount of electricity is used to refine oil for petrol and diesel. Fully Charged’s video ‘Volts for Oil’ (available on YouTube) estimates that refining one gallon of petrol would use around 4.5kWh of electricity – so, as we start to use less petrol or diesel cars, some of that electricity capacity could become available. ■

