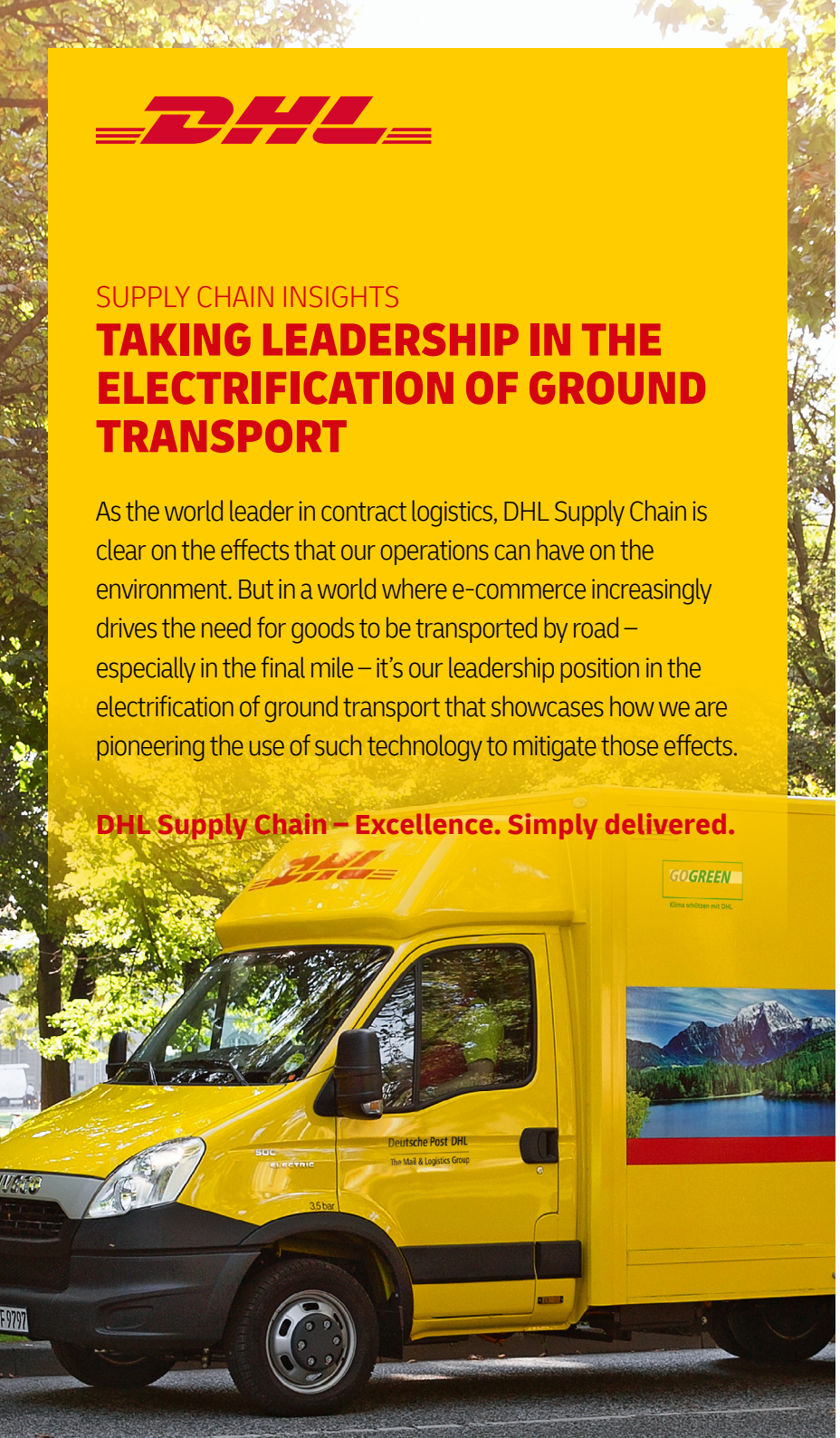

SUPPLY CHAIN INSIGHTS

TAKING LEADERSHIP IN THE ELECTRIFICATION OF GROUND TRANSPORT

As the world leader in contract logistics, DHL Supply Chain is clear on the effects that our operations can have on the environment. But in a world where e-commerce increasingly drives the need for goods to be transported by road – especially in the final mile – it's our leadership position in the electrification of ground transport that showcases how we are pioneering the use of such technology to mitigate those effects.

DHL Supply Chain – Excellence. Simply delivered.

In recent years we have seen highest temperature records regularly being broken all over the world. Scientists tell us that the planet's average surface temperature has risen around one degree since the late 19th century – a change that has triggered a series of extreme weather events in recent decades.

Stephan Schablinski, VP, Global GoGreen, Global Operations Excellence, says the broad scientific consensus is that these changes in temperature are the direct result of human activity: "While inconvenient, the truth is that we are at a crossroads. We have the power – and a responsibility – to alter the worrying trajectory of man-made climate change."

The logistics industry, second only to the energy sector, is in the front line of global business' battle to curb climate change, with transportation estimated to account for around 16.2 percent of global greenhouse emissions.[1]

The amount of fossil fuels consumed today by commercial road vehicles not only presents a growing cost factor, but is one of the major contributors to the carbon emissions produced by the logistics industry. Since it is this mode of transport that links global supply chains with the final consumers who increasingly reside in urban areas, it is also the industry's single biggest contributor to local air pollutants such as particulate matter, ozone, nitrogen oxides and sulphur dioxide.

It is no surprise therefore, that a growing number of cities are launching measures to reduce pollution levels and congestion. They aim to maintain their cities' attractiveness to residents, reduce the time that commuters spend in traffic, and attract tourists – while at the same time encouraging businesses to base their HQs there, provide jobs, and ensure a seamless flow of goods in and out of the city.

In our research on companies' transportation strategies, 'THE LOGISTICS TRANSPORT EVOLUTION: THE ROAD AHEAD'[2], survey participants highlighted as a particular issue the impact of urbanization – the migration of populations into urban and mega-urban centers.

Concerns about transportation's significant carbon footprint, and consequently congestion, air and noise pollution, will only grow as an issue and a potential constraint in delivering goods into highly populated urban areas. Already, 76 % of our survey respondents said that legislation around mandatory carbon reporting is having an impact on their transportation decision-making.

Driving towards a more sustainable future

As the global logistics leader, DHL has a key role to play in driving our industry towards a more sustainable future and in providing solutions that help both our customers and the communities around them with warehousing and transport solutions that come with reduced, or even zero, emissions.

This role is anchored in our climate protection target to reduce all logistics-related emissions to net zero by the year 2050 with a roadmap to 2030, which is in line with the Science Based Target initiative.

To help realize that vision, we have established a number of ambitious interim goals across the main action areas of our sustainability strategy, as Stephan explains.

"While 2050 is still a long way off, we have set out a number of interim goals that we want to achieve by 2025, including globally reducing our transport carbon footprint by 20% compared to a business-as-usual scenario. We will achieve this through the increased efficiency and the use of cleaner fuels within our own fleet and with our subcontractors".

[1] Climate Watch, WRI (2020)
[2] http://dhl.lookbookhq.com/ao_product_transportation

Stephan further explains: “This is also an opportunity to support and grow sustainably with our customers, where we see that almost three quarters of our globally managed accounts are also signed up to the SBTi.”

Such solutions are increasingly vital at a time when the combined effect of the e-commerce boom and rising urbanization pose significant challenges for logistics providers.

So what are some of the concrete solutions?

Increasing use of electric vehicles
Innovation will play a key role in increasing carbon efficiency and accelerating the ‘green transformation’ of logistics.

Electric vehicles are a case in point, and driving their proliferation are the benefits offered by e-mobility, which make them a perfect solution for the challenges that cities face.

Firstly, electric vehicles release only a fraction of the local pollutants and tailpipe emissions of their diesel counterparts, as no combustion of fuels is taking place.

Secondly, electric motors are significantly more efficient than diesel engines, consuming less than half the energy for the same job. In addition, with only 10-20% of this energy being lost to heat in comparison to about 60% in the case of diesel, electric vehicles contribute to energy conservation.

Aside from the benefits linked to fuel consumption, an electric vehicle also reduces maintenance and repair costs by as much as 80%. Added to these advantages, there is another which presents a major source of relief for urban residents – electric vehicles offer drastically reduced noise levels.

At DHL, we are investing in research and development to increase the use of electric trucks for both long and short haul within our operations. Since 2014, DHL has pioneered the production of electric vehicles for commercial use.

In addition to growing our fleet of electric vehicles, we are also expanding the infrastructure required to charge it.

Fully electric truck in the UK
At the heavier end of the electric vehicle spectrum, in 2020, DHL began operating the first purpose-built fully electric 16-tonne vehicle in the UK. The Volvo FL Electric 4x2 rigid is now part of DHL Supply Chain’s fleet in London, making last mile deliveries into the West End shopping district.

The vehicle is powered by four 200 kWh batteries which can run for 120 miles, carrying a maximum of 12 pallets and weighing up to 6 tonnes.

It recharges overnight at DHL’s base in Purfleet for daily operations into the city center. As a zero emission vehicle, it does not contribute any carbon or harmful emissions into the atmosphere. It will also be 3 star compliant to the London Direct Vision Standard having great all-round visibility and supporting the safety of all London’s road users.

The driver experience is also worth noting here. Rob Webb is a driver in the Purfleet Transport Team and has worked for DHL for just over 15 years. He reports, “Driving around London in this vehicle takes away all the stresses and strains of a normal conventional vehicle. It’s quieter, smoother, easy to park and fully conforms to the Direct Vision Standards (DVS) that are now enforced within London.”

Renewable energy sources
So what impact do electric vehicles have on carbon emissions? There is a lower consumption of energy compared to diesel, but the reduction in carbon emissions depends on how the electricity used to charge the vehicle’s batteries is produced. In the case of DHL Supply Chain, around 90 percent of all the electricity the division consumes comes from renewable sources such as solar photovoltaic (PV), hydro or wind power plants.

Solar PV, in particular, plays an important role in our transport strategy and solar film for trucks and trailers where DHL pioneered the TRAILAR product is a good example of this in action.

DHL is integrating thin film solar mats that are fitted to vehicle roofs and connected to the battery, or additional on-board batteries. The solar energy that’s generated is used to power on-board activities such as tail lifts, reducing overall fuel consumption.

Real world applications have proved to be very successful, and the mats can be fitted from new, or retrofitted to any vehicle during a short routine service visit.

Fewer, cleaner, quieter vehicles
Ian Clough, MD, Network Logistics and Transport for DHL Supply Chain UK&I, says: “Ultimately we need fewer, cleaner, and quieter vehicles. This can be achieved while also helping customers reduce their transport costs. That’s why we’re committed to developing new sustainable transport solutions that can be rolled out across all supply chains for the benefit of the environment, the public and our customers.”

Stephan says: “At DHL, in our capacity as the world’s largest logistics provider, we are very conscious of our responsibilities, and we have a long-standing corporate commitment to sustainability. It’s reflected in our commitment to initiatives such as EV100, which has brought together leading companies to accelerate the transition to electric vehicles. Companies like ours have to be prepared to show leadership in reducing fuel consumption, energy usage, and greenhouse gas emissions within their logistics and supply chain operations.”

There are some who are leading the way. IKEA, for example, has a target for all its last-mile deliveries to be by electric vehicles or other zero-emission means by 2025.

Carbon-efficient logistics go hand-in-hand with cost-effective logistics. By reducing our resource use, we reduce our resource costs because we have a lower procurement need. Going green with logistics has the potential to deliver efficiencies and reduce pollution, while at the same time generating cost savings and potential new sources of revenue.

E-mobility plays a crucial part in our efforts to reach our ambitious zero emission targets. This requires collaboration with customers, subcontractors and vehicle manufacturers on the one hand, but also bold decisions to make it a real alternative which is not only ecologically, but also technically and economically viable.

Electric is just part of the solution

With electric solutions not expected to be largely commercially viable at the heavier end of the spectrum until the latter part of this decade, electric vehicles are just part of the solution. Interim solutions for DHL include the use of biofuels such as bio-LNG and bio-CNG; but equally important is the rigorous application of environmental standards to the design of customer solutions – this includes technologies such as telematics and aerodynamic design and practices such as the network design and the engagement of drivers to deliver the best possible efficiency based on eco-driving principles.

E-MOBILITY IN ACTION IN BRAZIL

In Brazil, DHL Supply Chain is using electric cars for deliveries on behalf of customers in the retail, consumer, technology, and healthcare sectors. Having been trialed in Rio de Janeiro the cars are now being used for deliveries in the Greater São Paulo and Campinas regions.

Senior Director of Transportation at DHL Supply Chain Brazil, Fabio Miquelin, says: “Aside from the fact that they do not release any harmful gases into the environment, the other major advantage is the reduction of noise pollution, since electric motors are very quiet. These vehicles therefore bring great benefits to society and the distribution of goods in urban centers.”

The electric cars have a capacity of 750 kg (or 3,330 liters) and room for two occupants. With a range of up to 250 km with one single load, they can reach a top speed of 130 km / h.

The battery has a storage capacity of 48 kWh and a recharge time of up to 2 hours while the engine brakes use regenerative technology that enables the vehicle to leverage the energy employed in braking.

Fabio says: “The vehicle brings many practical benefits. The only sound it emits comes from the friction of the tire on the road, and for the driver it’s extremely comfortable while also being very stable. Because it is electric there are no restrictions regarding its use in São Paulo’s Maximum Circulation Restriction Zone.”

The vehicles are currently in use for three customers within Brazil.

The team in Brazil has recently added another electric vehicle to its urban distribution fleet - an electric truck that will prevent the emission of up to 600 tons of CO2 over 30 years, compared to a model powered by traditional fuel.

The JAC iEV1200T VUC truck is fully powered by electricity. In addition to not emitting any polluting gases, the vehicle has a low operating cost, a 200 km range, 97 kWh lithium iron phosphate batteries and a cost per km that is five times less than an equivalent diesel-powered truck.