

LogiSYM

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READY FOR THE NEW
NORMAL**

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BY WOLFGANG LEHMACHER
AND MIKAEL LIND

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COP26: 5Zs that changed the world

Part 1—Defining the moment

by Wolfgang Lehmacher, Anchor Group & Mikael Lind, Research Institutes of Sweden (RISE)

“Even with all new Glasgow pledges for 2030, we will emit roughly twice as much in 2030 as required for 1.5 degrees Celsius,” states the Climate Action Tracker. This year the annual United Nations (UN) Climate Change Conference (COP26) was held at the SEC Centre in Glasgow, United Kingdom, from 31 October to 13 November 2021. Such meetings are generally hyped as platforms that can bring sweeping global action which makes it very hard for the participants to live up to the expectations. Critical is, though, that commitments are honored and actions followed through.

COP26 has received more attention than previous summits. Maybe because many have realized that the time has come to put an end to the self-destructive economic behavior of the last two centuries. In respect to logistics and transport something remarkable happened at COP26. The industry which previously showed largely low levels of commitment to engage in the COP agenda, showed the world that it exists and can take a seat at the COP table to actively contribute to fight climate change - but the sector also expressed its need for support.

Help is indeed needed from various sides, such as from automotive manufacturers in form of climate-friendly vehicles, from energy companies that need to

provide alternative fuels and re-fueling infrastructure at scale, from training institutes that can support with new curricula and clean skills, and from public private partnerships that are required to create platforms of innovation to accelerate technological developments in the field of CO2 emission reductions. Very positively, these topics have not only been discussed at COP26 but multiple initiatives were launched with some of them having the potential to significantly contribute to decarbonizing the global supply chain network.

This article focuses on the most relevant initiatives, the five zero (5Zs) emission initiatives contributing to decarbonizing logistics and transport to place these initiatives into the industry context and reflect on them in light of the ongoing industry discussions and developments (see figure 1). We also indicate what each action may mean for the sector.

The first Z - Zero emission road transport: Global MOU for ZE-MHDVs

In 2018, according to data from the International Energy Agency (IEA) road transport accounted for three-quarters of transport emissions. Most of this, 45.1 percent resulted from passenger vehicles (cars and busses) and the remaining 29.4 came from trucks carrying cargo.

At COP26, CALSTART’s Global Commercial Vehicle Drive to Zero program and campaign (Drive to Zero™) and the Dutch government have facilitated a memorandum of understanding (MOU) plus endorsement which is a collective action that is dubbed the Global Agreement on Zero-Emission Trucks and Buses. 15 countries, Austria, Canada, Chile, Denmark, Finland, Luxembourg, The Netherlands, New Zealand, Norway, Scotland, Switzerland, Turkey, the United Kingdom, Uruguay and Wales declared that they will collaborate towards realizing 100 percent zero emission new trucks and bus sales by 2040. Under the first ever global agreement on zero emission busses and truck, the Global Memorandum of Understanding for Zero-Emission Medium- and Heavy-Duty Vehicles (ZE-MHDVs), the signatories have also set an interim goal of 30% zero emission new vehicle sales by 2030. Subnational governments like Québec in Canada and Telengana in India as well as manufacturers and fleets like DHL, Heineken and Scania are endorsing the MOU and declared that they will align with the decarbonization effort. Furthermore, 32 countries, 39 cities, states and regions, six vehicle manufacturers (Ford, GM, JLR, Mercedes, BYD, Volvo), 28 fleet operator and 13 investors declared their determination to achieve 100 percent zero emission new car and van sales latest by 2040 globally and 2035 in leading markets.

Realizing the zero emission ambition requires cross-industry coordination. In particular, the transition towards zero emission vehicles, including heavy goods vehicles (HGV) requires close collaboration between governments and local authorities as well as private companies along with significant investments to drive the urgently needed technological developments in the areas of alternative fuels and refueling infrastructure.

The transport industry has already been addressing the challenge for some time with leading truck manufacturers shifting their focus on a range of different types of environmentally friendly vehicles. Also, tools have been developed to enable horizontal partnerships to reduce empty truck miles. Or to increase the visibility on alternative rail or ferry connections to reduce carbon emissions. At the same time the largest container shipping liner, Maersk Line, has ordered eight large ships powered by carbon neutral methanol carrying approximately 16 000 containers each, and made a call for “pit stops” for appropriate infrastructure to source green methanol. Transport nodes, such as ports, are following this trend by developing capabilities becoming energy hubs providing but also becoming powered by sustainable fuel. The initiatives launched at COP26 will significantly reshape the transport and logistics ecosystem, its fleets, its infrastructure and its practices.

The second Z - Zero emission shipping routes: the Clydebank Declaration

With about 90 percent of world trade volumes transported by

sea, global ocean shipping accounts for nearly 3 percent of global CO₂ emissions and the industry is under increasing pressure to reduce its carbon footprint.

On 10 November 2021 at COP26, 19 countries – including Australia, Germany, Japan, the Netherlands, Norway, the United Kingdom and the United States of America (USA) – joined the first framework to establish zero emission maritime routes. Signatories to the so-called Clydebank Declaration have agreed to collaborate to support the creation of green shipping corridors between two or more port pairs. This will allow trade partners to incentivize or oblige carriers to service these routes only with zero emission ships and catalyze shore-side investments in clean energy and zero emission electro-fuel infrastructure.

The optimal impact of such efforts will not be reached without collaboration to coordinate and synchronize operations across the shipping corridors; and collaboration at such scale will not be possible without digital means. At the core of the discipline of maritime informatics, is the balancing act between capital productivity, which is an organizations’ concern driving the development agenda, and energy efficiency, which is an urgent societal concern. Both type of concerns may be empowered by digital data sharing (see figure 2). This means that changes for enhanced energy efficiency need to be motivated by actors of the transport and logistics ecosystem through incentives that make it attractive or compulsory to contribute to a better good, either driven by business logic or legislation.



While establishing the selected zero emission corridors all major shipping routes should thus be empowered by digital data sharing across nations and platforms. In recent years the industry has taken important steps to raise the awareness of how digitalization empowers collaboration bringing actors closer to each other in the self-organized ecosystem of transport and logistics. Technologies empowering collaborative decision making (CDM) and situational awareness among involved parties brings the necessary means for the transport industry to achieve enhanced coordination and synchronization. This requires that data on plans, progress and disruptions are shared among the participants, within ports, between ports, and between transport operators and ports. The Clydebank Declaration has the potential to create testbeds that will not only drive the development of alternative fuels and the respective refueling infrastructure but will also further the digitalization of the maritime supply chain network as a whole – which includes the hinterland connections as well.

The third Z - Zero emission technology: First Movers Coalition

Significant emission reductions require large scale innovation and major capital investments across the globe. “Roughly half of

the emission reductions needed to reach the 2050 climate goals rely on technologies in early development, demonstration or prototype phases,” states a World Economic Forum release. The decarbonization of the economy, supply chains and the logistics and transport industry, requires unprecedented cross-sectoral and cross-border collaboration. An inclusive approach where the richer and faster should motivate and assist those in need.

But at the end it is demand that drives research and development (R&D). Creating demand for new clean solutions requires pioneers and critical mass. The First Movers Coalition led by the World Economic Forum and John Kerry, U.S. special presidential envoy for climate that was launched at COP26 aims to decarbonize “hard-to-abate” sectors such as shipping by providing demand signals to create new markets for critical technologies and zero emission fuels. Amazon, A.P. Møller-Mærsk, Deutsche Post DHL Group, and Yara International joined the coalition as founding members. The coalition’s platform allows companies to make purchase commitments for zero emission fuels and technologies, sending drivers for R&D and adoption of those solutions throughout the global supply chain network with all its modes.



In the quest of reducing costs but also the impact on the environment innovation efforts have recently accelerated in the transport and logistics industry. One example is the joint venture between Hamburger Hafen and Logistik AG (HHLA) with HyperloopTT, a “crowd-powered” company and innovator by design. The goal of this collaborative innovation is to move containers at the speed of air cargo through a vacuum tube, an enclosed highly reliable system, connecting ports with their hinterland in a new way, reducing time and carbon emissions. In Sweden, there are initiatives such as I.Hamn and SARGASSO. For I.Hamn the ambition is to allow the 50 + Swedish ports to join forces in supporting each other on their journey towards a more sustainable and resilient transport ecosystem. SARGASSO is an open innovation platform for blue growth, that engages industry clusters across domains to contribute technology to the maritime industry whilst receiving challenging maritime opportunities. Another example of economic and environmental co-benefits is Cubex Global, a digital marketplace selling unused space in shipping containers, developed in the context of the World Economic Forum’s UpLink Innovation Challenge. Considering that every year, 100 million containers cross the ocean almost empty, producing 280 million tons of carbon emissions and costing \$25 billion a year in lost revenue, this digital solution allows an ocean-friendly model for shipping. These examples are indicators that the logistics and transport industry wants to change and that it can make progress when there is courage to open up, network and bring in external parties or the crowd to support innovation efforts.

By joining alliances like the First Mover Coalition transport and logistics companies can significantly enhance their innovation firepower.

Look out for the continuation of this article where the concluding sections 4th Z and 5th Z, including some valuable conclusions will be issued in the LogiSYM February 2022 edition.

About the Authors



Wolfgang Lehmacher is operating partner at Anchor Group and advisor at Topan AG. The board member, executive advisor and former head of supply chain and transport industries at the World Economic Forum and President and CEO Emeritus of GeoPost Intercontinental is advisory board member of The Logistics and Supply Chain Management Society, ambassador of The European Freight and Logistics Leaders' Forum, and founding member of the think tanks Logistikweisen and NEXST.



Mikael Lind is the world's first Professor of Maritime Informatics and is engaged at Chalmers, Sweden, and is also Senior Strategic Research Advisor at Research Institutes of Sweden (RISE). He serves as an expert for World Economic Forum, Europe's Digital Transport Logistic Forum (DTLF), and UN/CEFACT. He is the co-editor of the first book of Maritime Informatics recently published by Springer.