



Ambitious yet logical

by Christian Lorenz, *Editor-in-Chief, HHLA*

Speaking at the 2026 Petersberg Climate Dialogue, Germany's Federal Minister for the Environment, Carsten Schneider, emphasised the need to advance electrification in international climate policy. He said this was a "global megatrend" with rapidly growing markets. Hamburger Hafen und Logistik AG (HHLA) is at the forefront of the transition to electric mobility. Its Container Terminal Altenwerder (CTA) in the Port of Hamburg has already been operating highly efficient equipment powered by renewable electricity for years. This concept is now being rolled out to other terminals.

HHLA recognised this trend early on and incorporated it into a long-term climate strategy, aimed at reducing carbon emissions. The European logistics company, headquartered in Hamburg, has already reduced its specific CO₂ emissions at its container terminals by 58.5% since 2008 – through increasingly electrified systems and processes powered by renewable electricity from certified sources.

Cleaner and more efficient – and with less hustle

This has been the case for all of HHLA's Hamburg sites since 2024. The

ship-to-shore container cranes have been designed to operate on a continuous direct power supply for decades. At the Container Terminal Burchardkai (CTB) yard, a block storage system is also increasingly replacing diesel-powered straddle carriers. This new solution has almost doubled the storage capacity and made storing containers more energy-efficient and environmentally friendly. For similar throughput figures, diesel consumption fell by around three million litres – saving approximately 8,000 tonnes of CO₂ when setting 2025 operations against the initial 2010 phase. For a company that takes care of six million

TEUs across Hamburg's quays yearly, shaving each gram off a container's carbon footprint counts.

The switch from straddle carriers to automated guided vehicles (AGVs) is also well underway at CTB. The prototype for today's standard electric AGV was developed in collaboration with the German manufacturer Gottwald for CTA, making Altenwerder a global pioneer in this technology. All AGVs there have been battery-powered since 2023, saving up to six million litres of diesel thus far.

But battery-powered AGVs (first tested in 2009) aren't only better for the environment – they're also more efficient and



Photos: HHLA/Thies Rätzke

less prone to defects. From around 25% overall efficiency for a diesel-electric AGV, this figure has been improved to over 70% for a battery-electric AGV. The economic principle underlying the transition to electric mobility is obvious: the direct use of electricity enables greater efficiency. These machines are also much easier to service, as many components – such as the diesel engine, generator, rectifier, and motor control system – are no longer needed.

As almost all equipment at CTA is now electric, workshop operations have

become cleaner and quieter. “Instead of adjusting valves and relying on intuition and experience to find faults, we’re now measuring insulation values and using diagnostic tools to analyse system log files,” shares team leader Sebastian Thiess. He also mentioned that the new generation

of lithium batteries (NMC cells) offers greater performance and that the battery management system is more reliable.

Battery-powered operations offer additional advantages in places like Hamburg, where the port is located close to the city. Local emissions – including CO₂, soot, and nitrogen oxides – are eliminated. And with no diesel engine required, the noise level is considerably lower. The same applies to HHLA’s employee and visitor transport fleet, most of which is now electrified.

From project to project

The transition to electrically powered machines and processes is being driven forward in various projects. While most of CTA’s heavily used tractor units already run on electricity stored in batteries, battery-powered hoists are being tested at several HHLA terminals.

Through these efforts, HHLA is targeting at least a 90% reduction in scope 1 and scope 2 emissions at the group level by 2040 – an ambitious yet logical goal that aligns with the environmental principles underpinning the company’s business model. □



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