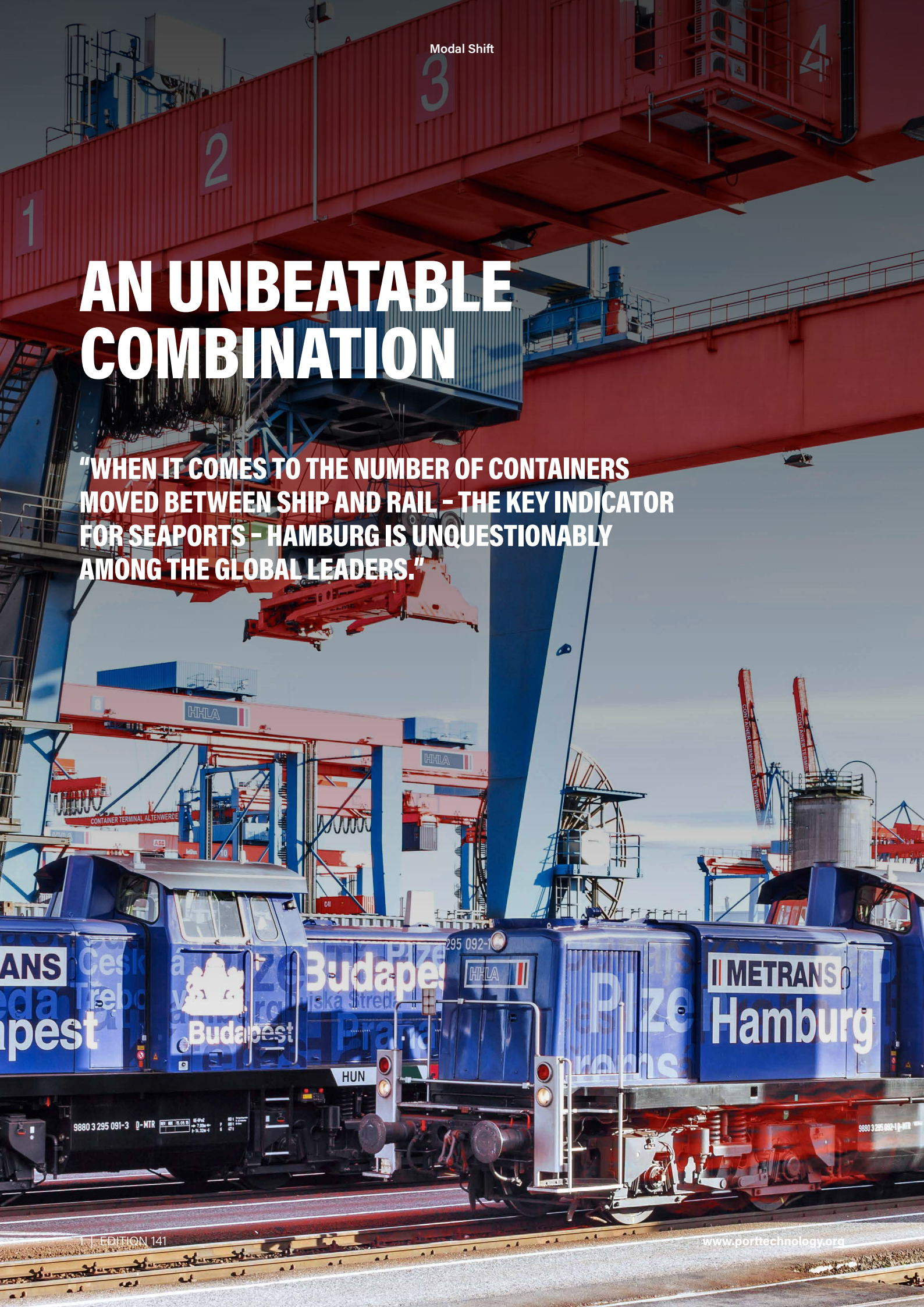
AN UNBEATABLE COMBINATION

“WHEN IT COMES TO THE NUMBER OF CONTAINERS MOVED BETWEEN SHIP AND RAIL – THE KEY INDICATOR FOR SEAPORTS – HAMBURG IS UNQUESTIONABLY AMONG THE GLOBAL LEADERS.”



Christian Lorenz, Chief Editor, HHLA

Europe can only achieve its climate goals with eco-friendly supply chains. The Port of Hamburg plays an important role in this by combining ship and rail transport in a unique way.

IS HAMBURG REALLY THE WORLD'S LARGEST RAIL PORT?

That cannot be said with the absolute certainty required by official statisticians. The data is inconclusive, as there is no clearly defined, internationally accepted parameter for port rail throughput. However, when it comes to the number of containers moved between ship and rail – the key indicator for seaports – Hamburg is unquestionably among the global leaders. In Europe, Germany's largest seaport is the undisputed number one.

The Hamburg port railway, operated by the Hamburg Port Authority (HPA), is the link between the port's many terminals and the European rail network. It provides 290 kilometres of track for the handling of around 210 freight trains comprising more than 5,500 wagons every day. No other port offers its customers nearly as many rail connections throughout Germany and Europe. Hamburg has 1,891 connections. An impressive 13 per cent of all of Germany's rail freight transport begins or ends in the Port of Hamburg. In terms of national container traffic, a full 32 per cent of boxes transported by rail in Germany pass through Hamburg. If the Port of Hamburg were solely a rail terminal, it would rank among the biggest rail freight stations in the world.

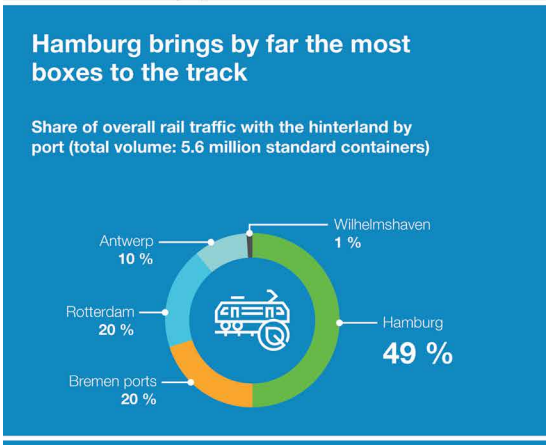
First of all, trains are much more energy-efficient than heavy goods vehicles and emit fewer harmful substances. Converted to tonne-kilometres (the number of kilometres travelled multiplied by the quantity of goods transported in tonnes), a truck emits 110 times more CO2 than a train. Additionally, rail requires only 1.2 hectares of land for 1 kilometre of route, while road freight requires 3.6 hectares – three times as much land use!

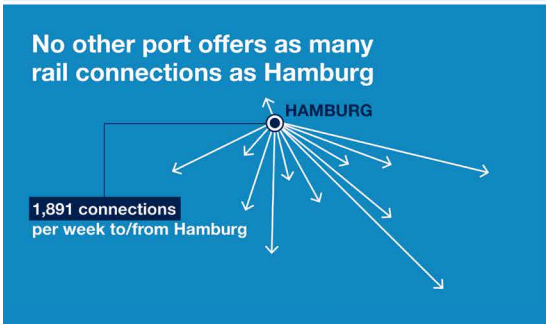
WHY IS A RAIL PORT ESPECIALLY ENVIRONMENTALLY FRIENDLY?

Rail, already an eco-friendly mode of transport, is combined with large vessels at the Port of Hamburg. Container mega-ships, massive ore carriers and supertankers bring their cargo almost 110 kilometres inland along the river Elbe. Such "channel navigation" is beneficial from an overall environmental perspective. Why? There are various interrelated reasons for this.

Firstly, no other form of transport manages to keep its energy consumption and carbon footprint per tonne of cargo carried even remotely as low as mega-ships. Moreover, container (and other) ships bring their cargo directly to one of Europe's most important economic regions, as the Port of Hamburg is Germany's largest contiguous industrial area, covering 4,226 hectares of land. Lastly, a disproportionately high level of the goods destined for (or coming from) other regions are moved by rail.

In 2023, almost 46 million tonnes of goods were transported via the Hamburg port railway's



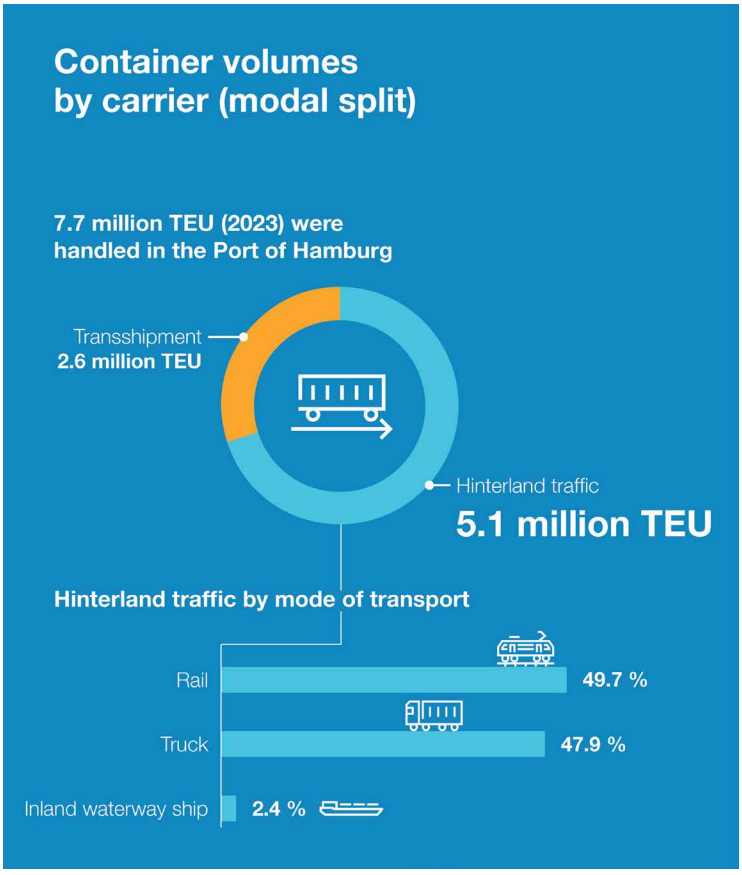


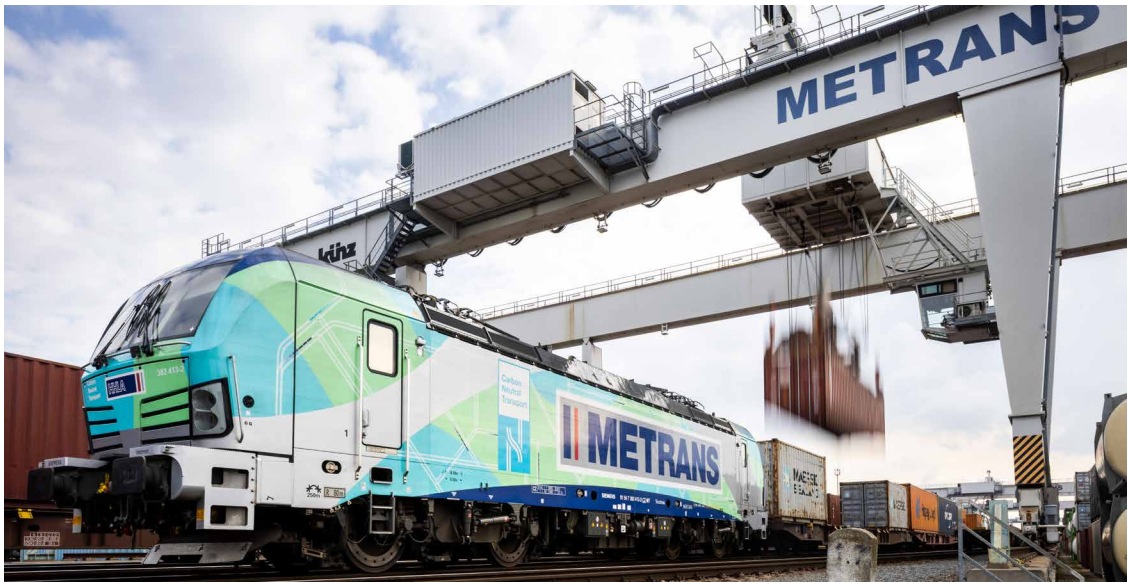
tracks. In particular, the containers transported by rail covered significantly longer distances than those carried by road. Container mega-ships with a capacity of 20,000 TEU ensure plenty of activity. In Hamburg, an average of around 9,000 TEU are lifted from ships (unloaded) and loaded. Of these, 6,000 come from or head to the hinterland, while the remaining 3,000 or so containers are transshipments. Transshipments are transfers between the container mega-ships and smaller feeders, which are used to transport the boxes onwards by sea, primarily to the Baltic region. All of the trucks, trains and ships needed for this would have to cover much greater distances if the Port of Hamburg did not serve as a hub.

ABOVE
The Port of Hamburg is Germany's largest contiguous industrial area, covering 4,226 hectares of land.

NOT ONLY COLOURFUL BOXES

Rail is also indispensable for many bulk goods. Trains loaded with potash arrive at the K+S AG Kalikai site from the Werratal region, to be shipped from here to all around the





RIGHT
Metrans runs mainline locomotives in Germany with green electricity.

"WITHOUT SMART RAIL OPERATORS LIKE HHLA'S INTERMODAL COMPANY METRANS, THERE WOULD BE NO HIGH-FREQUENCY CONNECTIONS BETWEEN THE PORT AND THE HINTERLAND."

world. And in the Port of Hamburg's fuel depots, tens of thousands of tank wagons are processed every year. Travelling by rail, they ensure the supply of a wide range of mineral oil products and chemicals.

The block trains that carry up to 6,000 tonnes of iron ore and coal to the Salzgitter and Eisenhüttenstadt steelworks are the heaviest trains operating in Germany. They are loaded by HHLA subsidiary Hansaport by means of an automated process. Quantities that could only be transported by rail are handled at the Hamburg terminal. Nobody could countenance having heavy goods vehicles transport up to 15 million tonnes of ore and coal on Germany's roads each year.

Almost everything apart from bulk goods (such as coal and mineral oils) is transported in containers. The colourful boxes are mainly handled in the west of the port at the HHLA and Eurogate container terminals. The rail terminal at HHLA Container Terminal Altenwerder (CTA) holds the record with around 900,000 TEU per year, making it Germany's largest rail terminal and Europe's biggest container terminal.

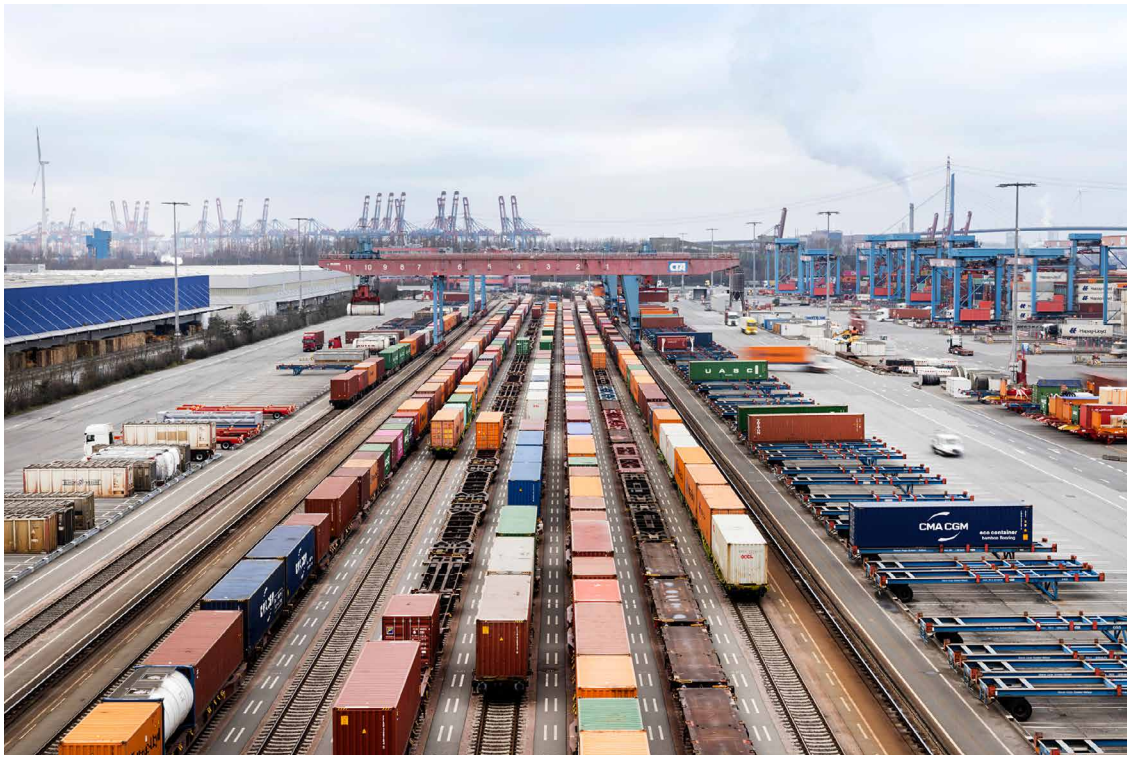
Such quantities mean that every hour of operation and every square metre of space must be optimally used. Everything runs extremely smoothly here and the four rail gantry trains are constantly in motion. The nine tracks, each 720 metres in length, are occupied around the clock. The annual track capacity is divided into slots of equal duration that are assigned to the trains of the rail operators. Each slot is five and a half hours long, during which time the CTA employees must unload and load the entire train.

MAKING RAIL TRANSPORT ATTRACTIVE

Without smart rail operators like HHLA's intermodal company Metrans, there would be no high-frequency connections between the port and the hinterland. Metrans runs modern electric locomotives that move the company's own block trains throughout large parts of Europe, while its environmentally friendly hybrid locomotives perform shunting work at the Port of Hamburg. But the company is more than just an operator of technology.

Metrans has developed a well-organised hub and shuttle system that works in a similar way to large airports, where passengers on their way from Leipzig to New York, for example, change planes in Frankfurt. Such pooling of intermodal traffic, just as in air transport, connects smaller and medium-sized locations to the efficient Metrans network. Regular shuttle services reliably move the containers in a carbon-neutral way between Hamburg and the hub terminals.

The HHLA terminals at the seaport load the import containers from the vessels onto the Metrans block trains in any order. Sorting only takes place then in Prague, Ceska Trebova or Dunajska Streda. The reverse is the case for export containers. However, this system is



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The rail terminal at HHLA Container Terminal Altenwerder (CTA) holds the record with around 900,000 TEU per year, making it Germany's largest rail terminal and Europe's biggest container terminal.

not suitable for every connection. Flexibility is therefore a must. Metrans must try to coordinate the volumes at the individual terminals, which vary daily, with the respective destination and the imbalance in import and export.

To this end, so-called multi-group trains are used. Metrans puts together block trains from wagon groups of varying strength that are loaded at the individual terminals and then travel to Munich, for instance. Such logistically and economically viable logistics solutions make rail transport an option for a large group of customers. This in turn has a positive effect on transport prices. The benefits of rail as a mode of transport already mentioned can only be fully exploited through this kind of optimised interplay exemplified at Hamburg's rail port.

RIGHT
Up to 15 million tonnes of ore and coal imported by Hansaport are transported away from the port by rail and the inland waterway.

ABOUT THE AUTHOR:
Christian Lorenz is a trained journalist who studied political science in Hamburg. After working for various publishing houses, he became a press spokesman for the Minister of the Interior in the federal state of Mecklenburg-Vorpommern. In January 2005, he took over as Head of Marketing within Corporate Communications at HHLA (Hamburger Hafen und Logistik AG) in Hamburg. There he gained expertise in many areas of logistics and is now head of the editorial team.

ABOUT THE COMPANY:
Hamburger Hafen und Logistik AG (HHLA) is a leading European logistics company. It develops logistical and digital hubs for the transport flows of the future. In doing so, the focus is on innovative technologies and sustainable solutions. The Group currently employs approximately 6,600 people.