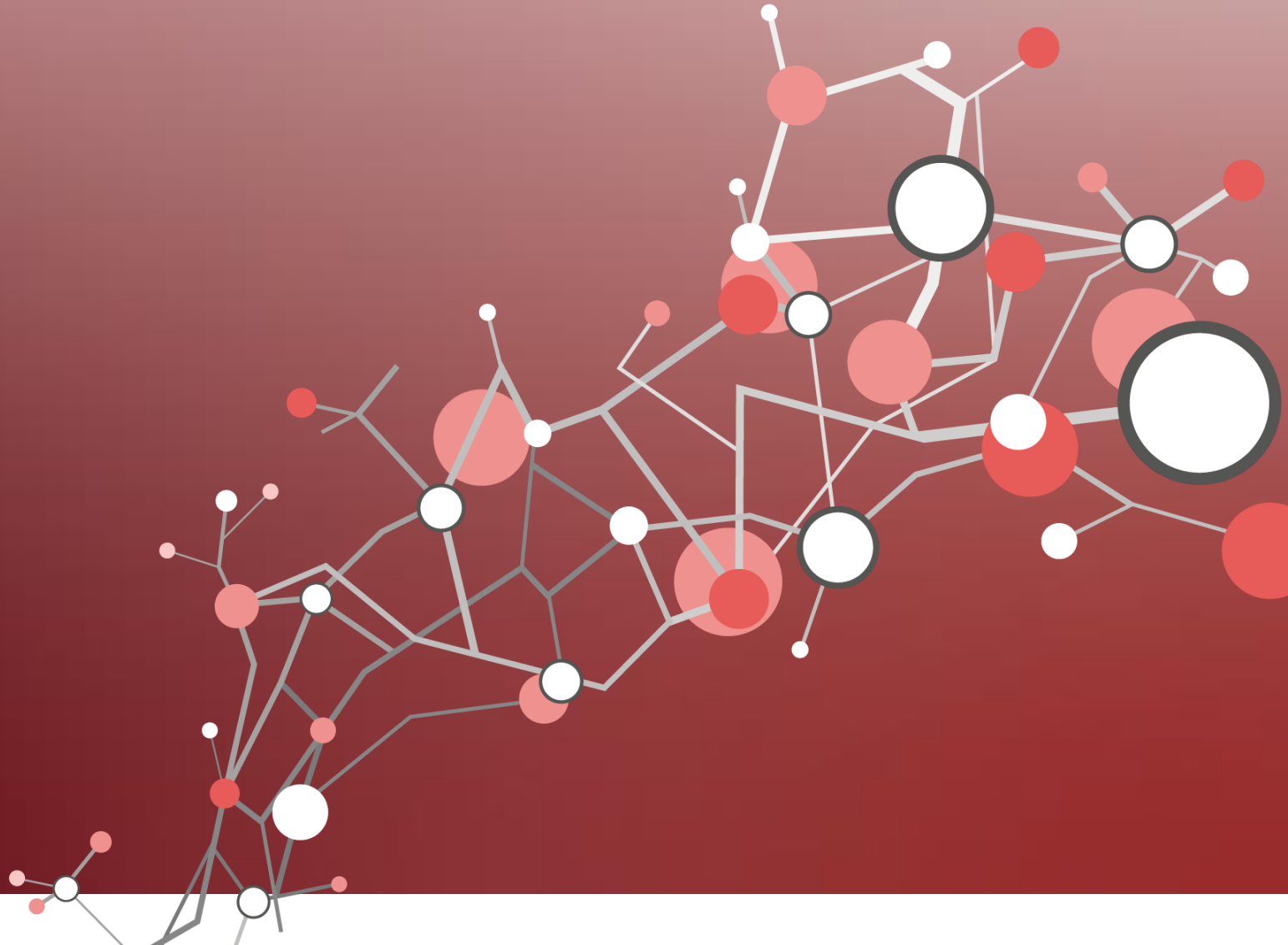


Excerpt –  
Corridor analysis on extended RFC 8

**SCI**/Verkehr

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Hamburg, Berlin



## The following slides represent an excerpt from a RFC8-Corridor analysis of SCI Verkehr for RLE

SCI Verkehr has been assigned as strategic consultant for the project “Corridor analysis on extended RFC 8” by RLE. The conditions for the assignment can be found in the contract “Corridor analysis on extended RFC 8” in the version of 28.07.2023, confirmed on 29.08.2023.

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### SCI studies also provide corridor information

#### European rail freight transport market 2023

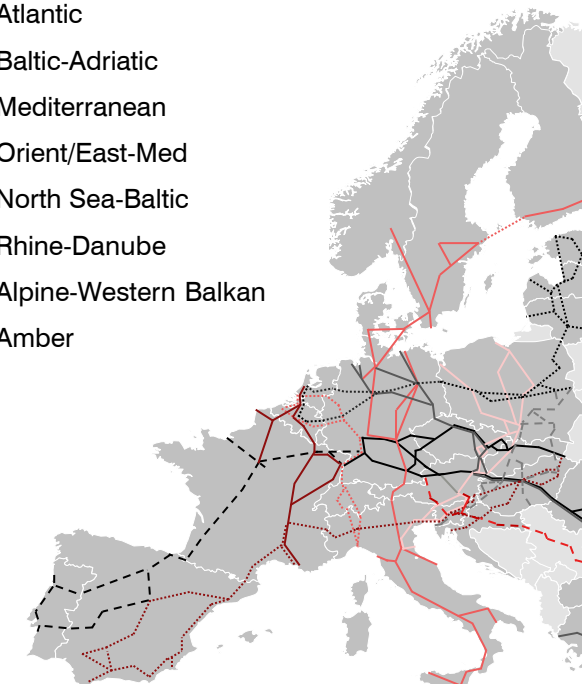
Containing: Rail freight performance –  
Modal share –  
Analysis of main operators –  
Detailed analysis of 24 country markets –  
Market shares and factsheets of 12 operators –  
Rail freight turnover – and more

#### European intermodal rail freight market 2023

Containing: key trends and developments -  
analysis of ports and hinterland traffic -  
intermodal market by rail freight corridors -  
relevant hubs, players and economic centres along the corridors –  
intermodal rail freight in 6 country markets (DE, PL, FR, IT, ES + Benelux) –  
outlook until 2028, market drivers – and more

### European rail freight corridors

- ..... RFC 1 Rhine-Alpine
- RFC 2 North Sea-Mediterranean
- RFC 3 Scandinavian-Mediterranean
- - RFC 04 Atlantic
- RFC 05 Baltic-Adriatic
- ..... RFC 06 Mediterranean
- RFC 07 Orient/East-Med
- ..... RFC 08 North Sea-Baltic
- RFC 09 Rhine-Danube
- - RFC 10 Alpine-Western Balkan
- - RFC 11 Amber



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The compact studies offer uniform views and definitions of the markets, prepare inventory and forecast data, document current trends and provide comprehensive detailed information on market and industry developments. Regional extracts = market reports are available in some cases.
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## Scope of the study

1

### Development of the transport market

- Historic transport performance on RFC 8 (including France/Spain and the Baltics) in tkm (2010 until 2022)
- Forecast of the rail freight development (until 2032)
- Current commodity mix for good segments on the extended RFC 8 and forecast in tkm
- Modal split development in terms of volume until 2032
- Condition of the rail infrastructure

2

### Market structure and competition

- Analysis of the market structure and competitive landscape
  - on rail
  - on road
  - on short-sea
- Mapping of key competitors in important market segments

3

### Analysis of competitors' key operative parameters

- Analysis of operative parameters of competitors on rail (including locomotives), road and short sea (price level, transit time, quality)

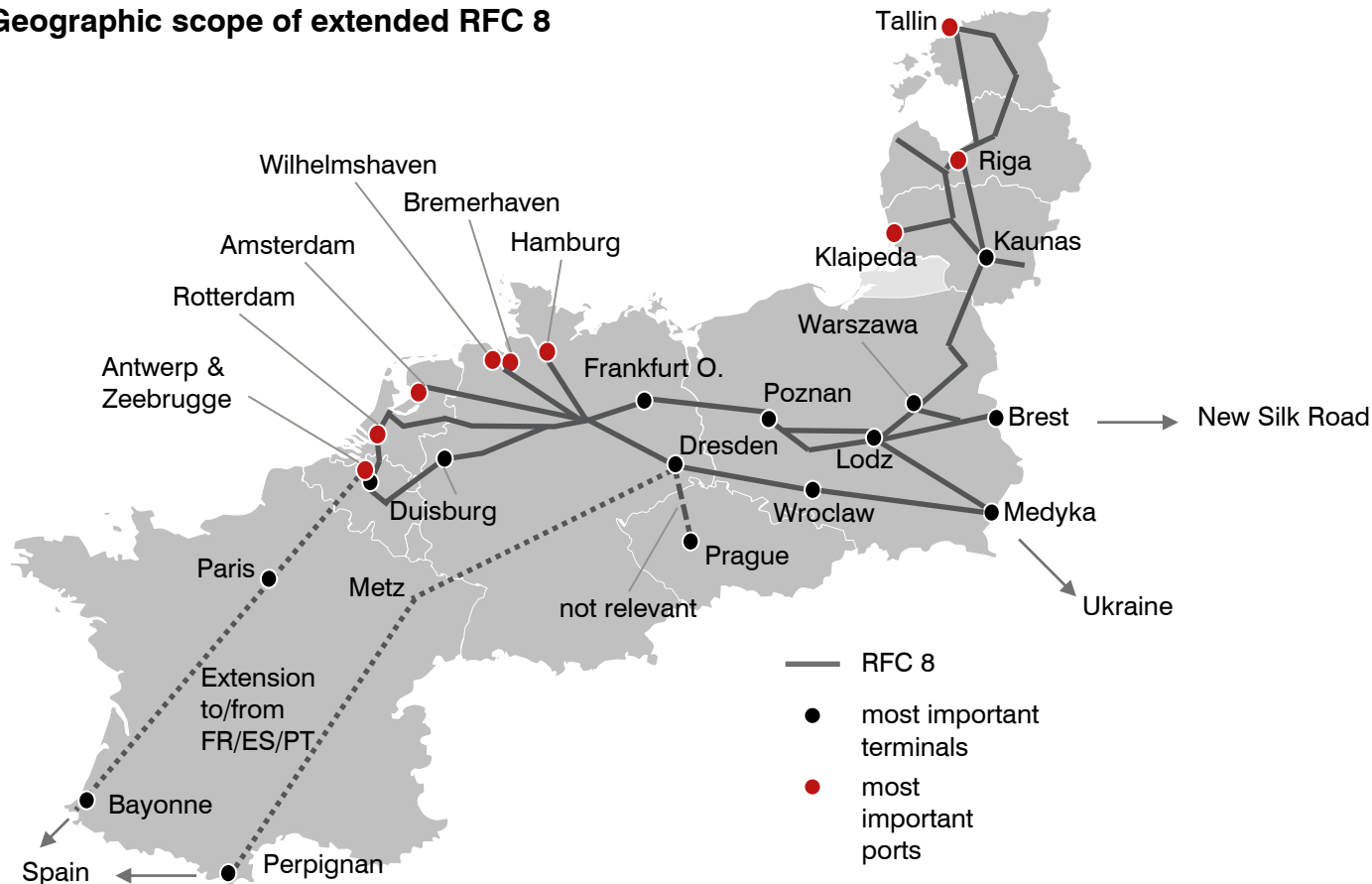
4

### Assessment of potential for modal shift

- Benchmarking and comparison of key operative parameters of competitors/ key competitors
- Evaluation of potential for modal shift in tkm until 2032 from rail, road and short-sea

The RFC 8 runs from Benelux via Germany and Poland/Czechia to the Baltic States – the west-east connection from France and Spain to Poland and the Baltic States was also considered

### Geographic scope of extended RFC 8



### Transport mode



Rail



Road



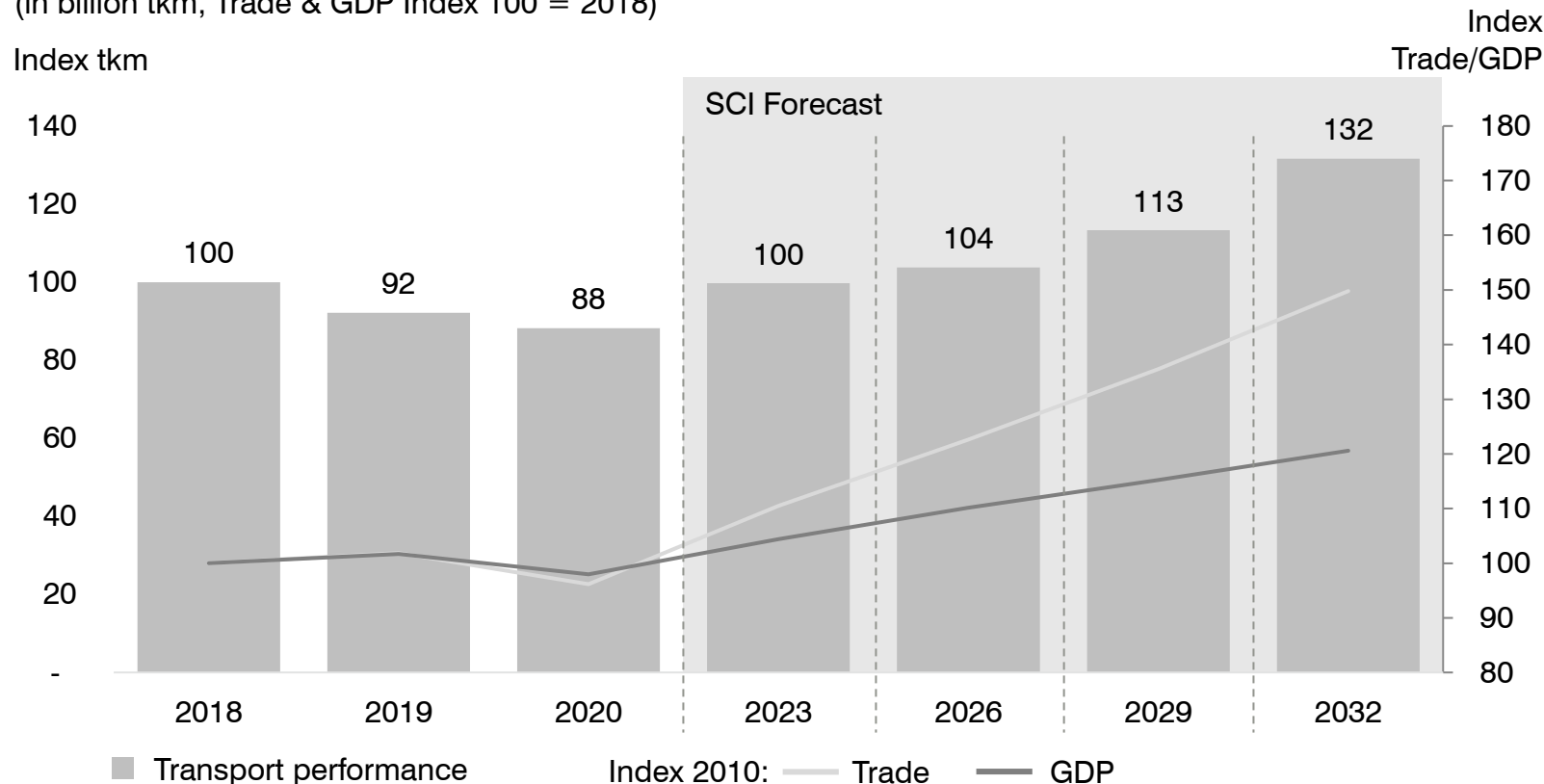
Short-Sea

### Definition of long-distance routes:

Only long-distance traffic is considered  
At least two borders must be crossed  
Exceptions are routes from the HUBs in Duisburg and Frankfurt O.

SCI expects a significant increase in transport performance on RFC 8 with an average growth of 2.0% p.a. (2018-2032), due to trade and GDP growth and an improved infrastructure

**Forecast of the rail transport performance on RFC 8\***  
(in billion tkm, Trade & GDP Index 100 = 2018)

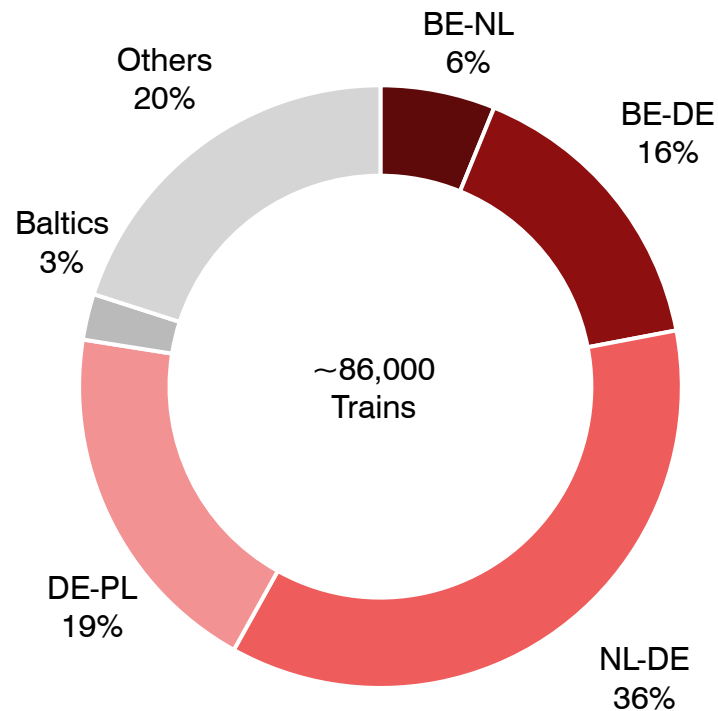


- SCI expects a significant increase in transport performance by an average growth of 2.0% p.a. (2018-2032).
- The following infrastructure projects will temporarily severely restrict transport on the Corridor. After completion, however, increased performance on these routes is expected:
  - Emmerich – Oberhausen 2024/2025
  - Lehrte – Berlin 2027
  - Minden – Wunstorf & Weddel – Magdeburg 2030
  - Rail Baltica ~2032

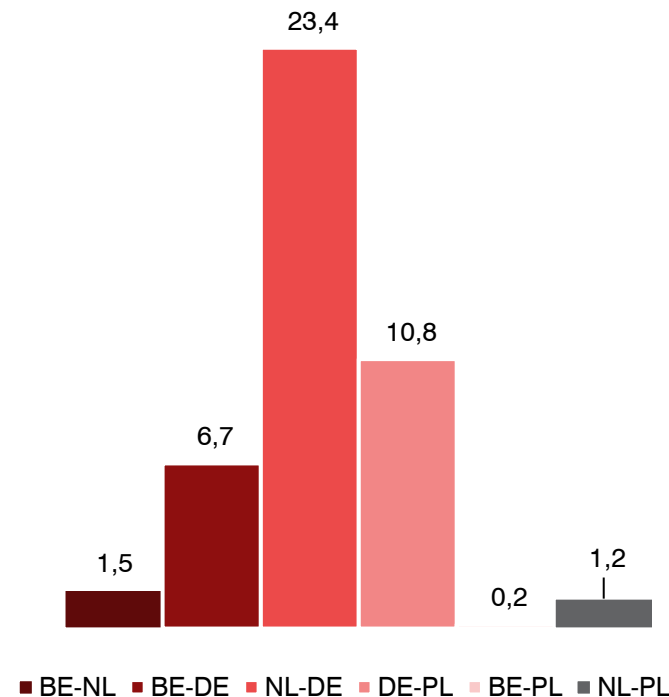
Sources: Eurostat, IMF, SCI Verkehr estimation; \*excluding Czech Republic

Most volume is transported on the NL-DE and DE-PL routes – of the long-haul connections, NL-PL has developed positively

**Volume at border crossings on RFC 8 in 2022**  
(% of trains)



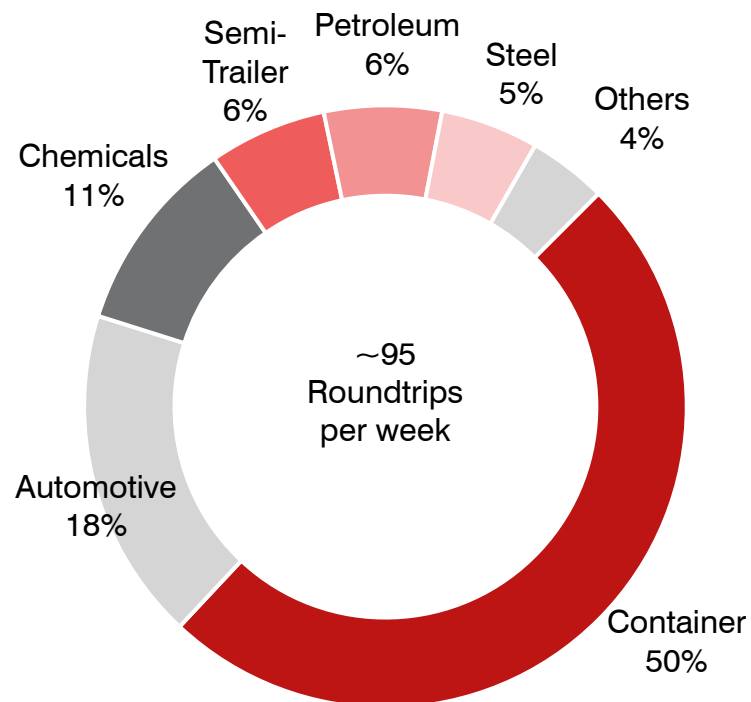
**Transport volume of international trains on RFC 8 in 2017** (in million tons)



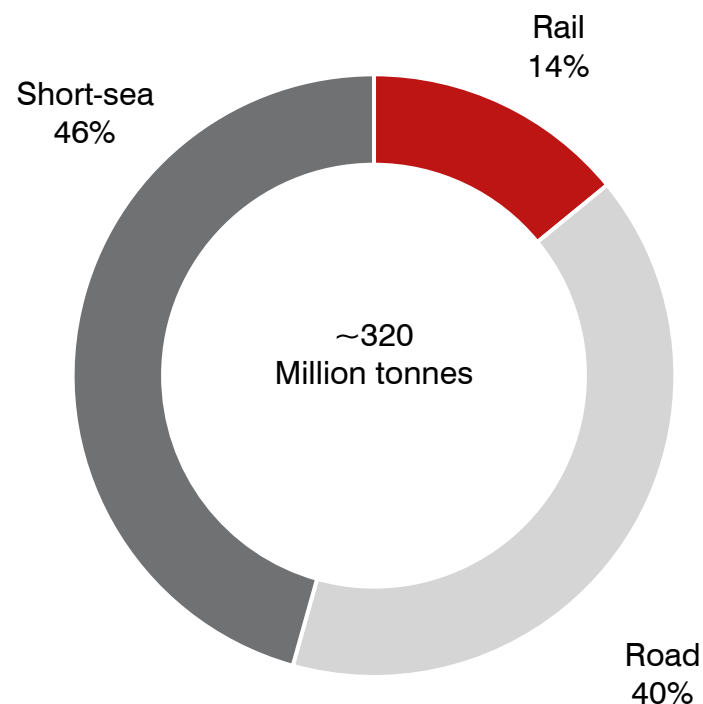
- International traffic on RFC 8 remained almost constant in 2022, both in terms of the total number of international trains and the number of border crossings. After the Covid downturn of 2020, border crossings are at a very high level. In 2021 and 2022, almost 140,000 trains crossed borders along RFC 8. However, the total number of international trains has not returned to the 2019 level of almost 100,000 trains. The most border crossings take place between NL-DE, with around 50,000 trains.
- When it comes to the volume of international trains, the NL-DE relationship makes up by far the largest part. Long-haul connections such as BE-PL or NL-PL, on the other hand, only account for a fraction of the volumes on the corridor.
- When looking at the development of traffic performance on long-haul connections, NL-PL and FR-PL relations have recently increased significantly. The latter was on a level with the BE-PL connection in 2022.

Containers are the largest segments in the long connections on the RFC 8 – automotive traffic to Belgian ports is high – semi-trailers, petroleum and steel are relevant between PL-FR/LU

**Commodity mix on long-distance relation on extended RFC 8 in 2022** (% of roundtrips per week)



**Modal Split on RFC 8\* in 2022** (in % of tonnes)

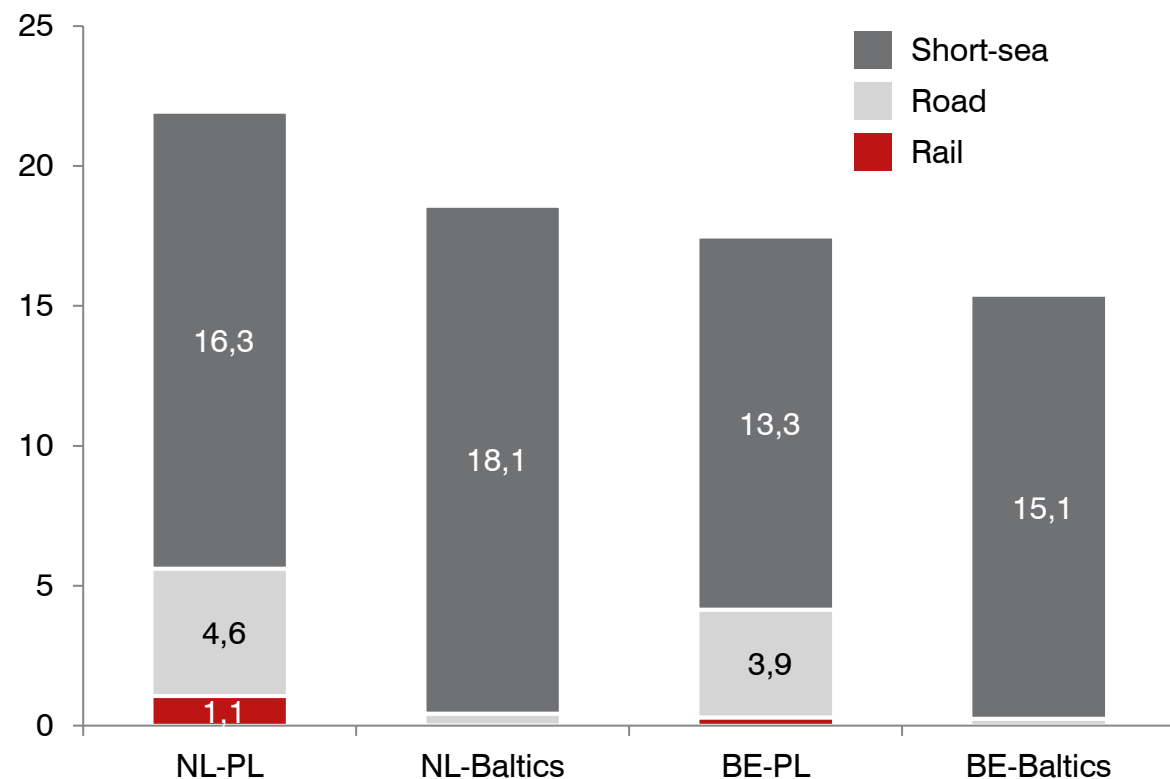


- Container transport is the dominant form of transport on long-haul routes along the expanded RFC 8. Three quarters of all tonnes transported come from this segment. Other important segments are Automotive, Chemicals and Semi-Trailers. Other goods transported on this axis include petroleum and steel.
- Rail has a relatively small share of 14% in 2022 on the RFC 8. Road and short-sea divide the remaining part approximately equally between each other. While the rail share has varied little in the past, the road and short sea shares have fluctuated greatly.
- The volume of traffic on road was constantly increasing until the Covid pandemic. After a significant recovery in 2021, the volume in 2022 slipped below the 2018 level, which is due to expensive diesel prices and a tense situation with available truck drivers.

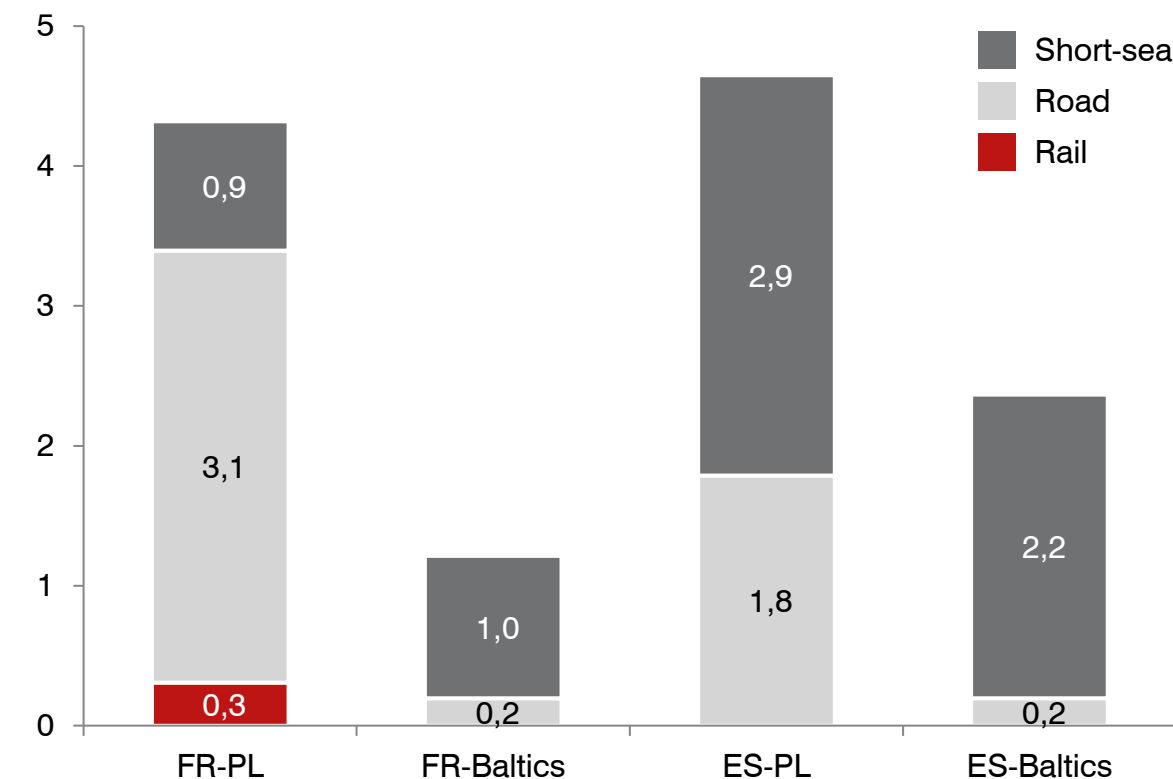


In almost all long-distance relations, transport by sea predominates – road accounts for a larger share of connections to Poland – currently rail only has a notable share in NL-PL

**Modal Split on selected long-distance relations between NL/BE and East in 2022** (in million tons)

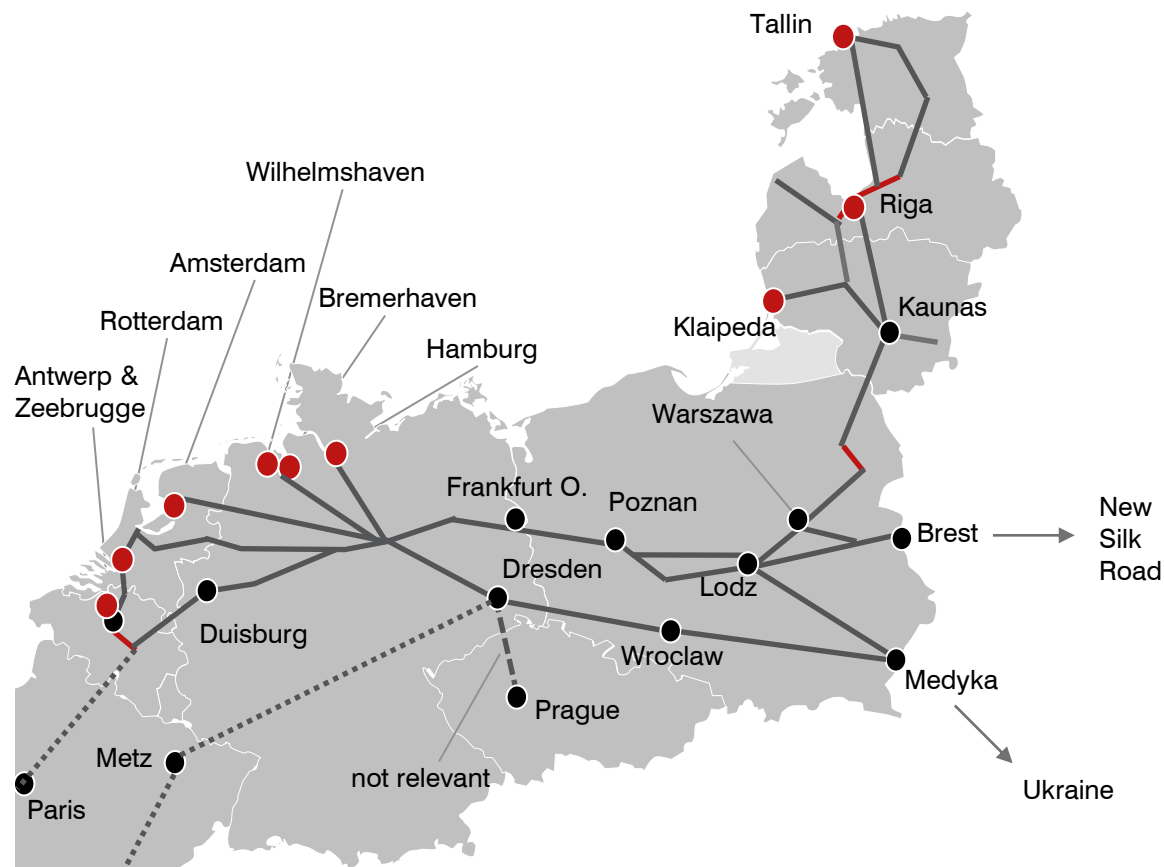


**Modal Split on selected long-distance relations between FR/ES and East in 2022** (in million tons)



Source: Eurostat

The infrastructure on the corridor is largely in good condition – modernization of the Polish network and standard gauge for the Baltics will improve interoperability – extension in Belgium and Ukraine



Sources: RNE, railfreight.com, RFC 8

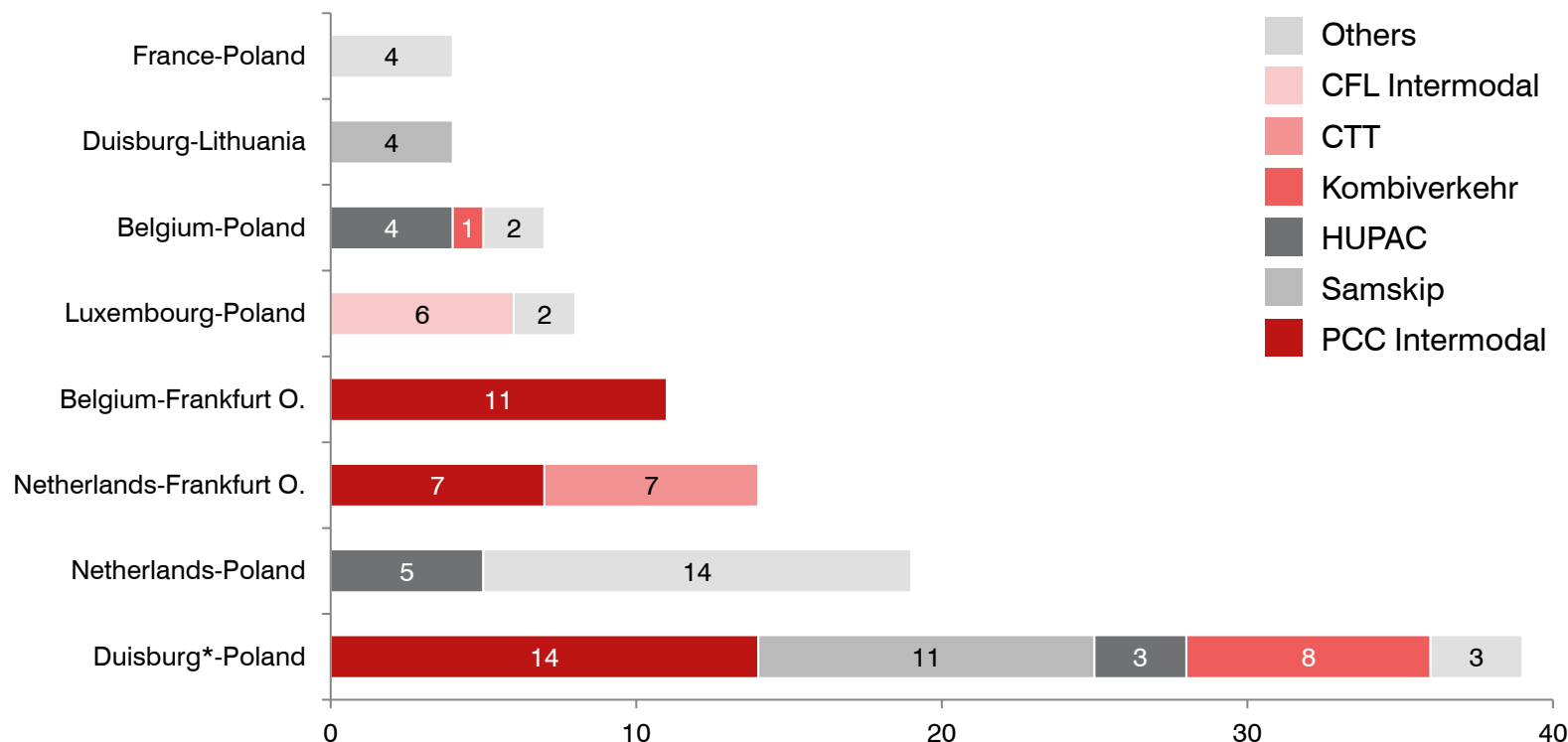
### Infrastructure overview

- The total length of the RFC 8 based on the preliminary routing is more than 5,600 km. The extension to France up to the Spanish border considered in this study increases the route network under consideration by a further 2,500 kilometers.
- Compared to other European corridors, the infrastructure is in a sufficient condition, particularly in Benelux, Germany and France, whereas the condition in Poland is outdated but increasingly being modernized. The different gauge in the Baltic states represents a problem in interoperability. However, as part of the Rail Baltica project, the new infrastructure will be based on the standard gauge, as in the rest of the corridor.
- Most of the corridor lines are double-tracked lines. Almost each country has a different voltage and frequency value, and not all the sections are electrified. The maximum train length on the corridor lines varies from 580 m to 740 m.
- The corridors has recently been extended to Gent and Zeebrugge as well as to Medyka, which connects these large Belgian freight centers respectively the Ukraine to the east-west corridor.

## Half of the intermodal long-distance connections on the expanded RFC 8 is operated by PCC Intermodal, SAMSKP and HUPAC – most operator bundle the traffic in the Hub Duisburg



**Intermodal operator on selected long-distance relations in 2022**  
(number of roundtrips per week)



- Besides operating freight trains, **PCC Intermodal** currently operates five modern intermodal hubs, in Central Poland (Kutno, Gliwice, Brzeg Dolny and Kolbuszowa), and on the German side of the border in Frankfurt (Oder).
- Samskip** is a global logistics company, operating transport via rail, road, short-sea and barge. Concerning rail, the company jointly owns and operates the Duisburg multimodal rail terminal. To a smaller extent, the terminal also serves as a hub between the ARA ports and Poland/Lithuania.
- HUPAC's** network of intermodal connections covers the whole European continent. Most recently, the company opened the terminal in Brwinow and added new connections between the ports and Poland.
- Among other relations, **Kombiverkehr** offers German-Spanish relations via Ludwigshafen. Transport volume to Poland is low.

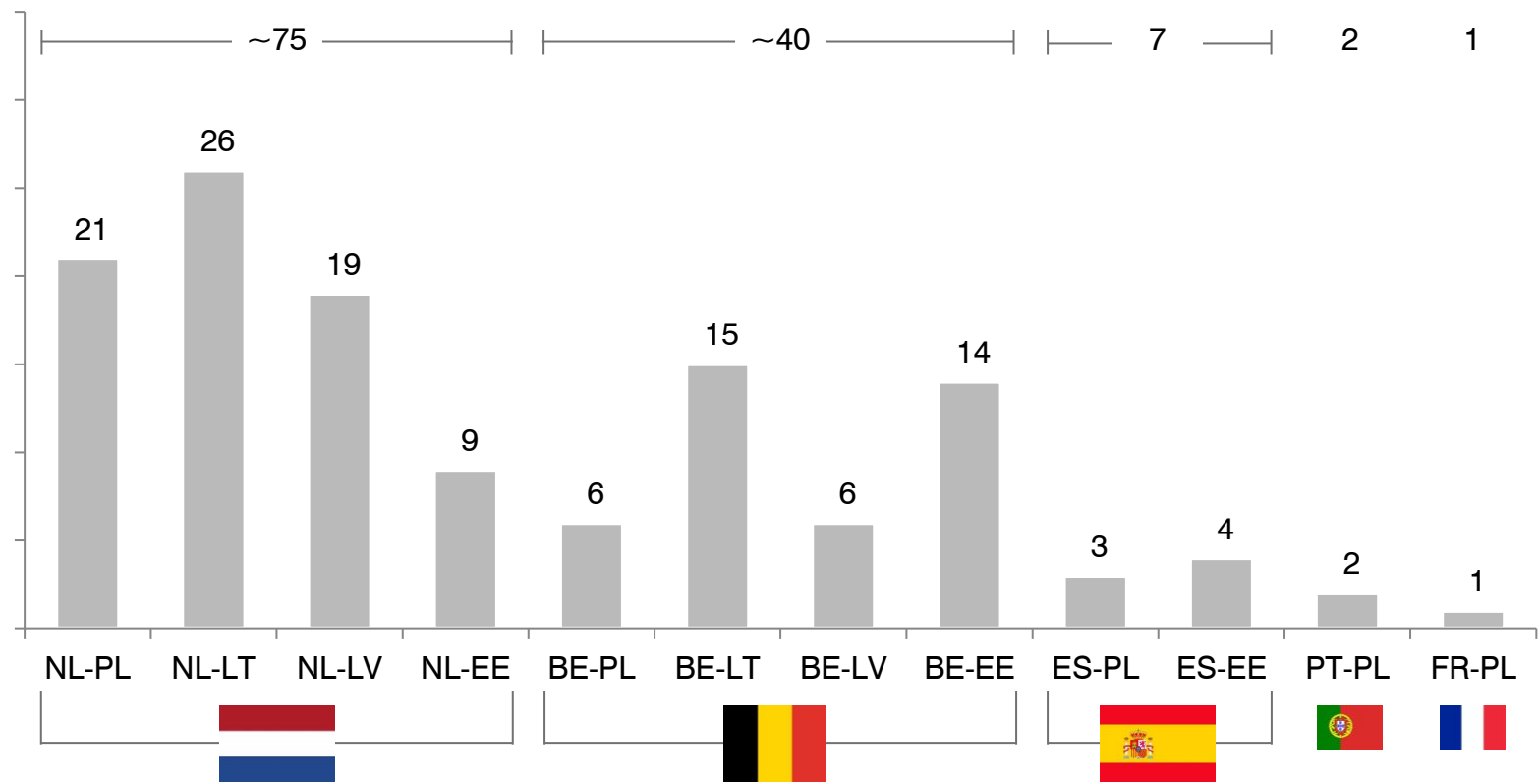
\* Kombiverkehr partly uses Ludwigshafen instead of Duisburg for its traffic from Spain to Poland

Sources: transportation plans of operator and ports; Business handbook freight railways; Others consist of ~10 operators

Most connections to Poland and the Baltics come from the Netherlands – the connection to the Baltics by sea is significantly stronger than by rail – there are also connections from Spain/Portugal



Routes on long-distance relations on extended RFC 8 in 2023  
(routes per month)



Source: companies' websites and route plans

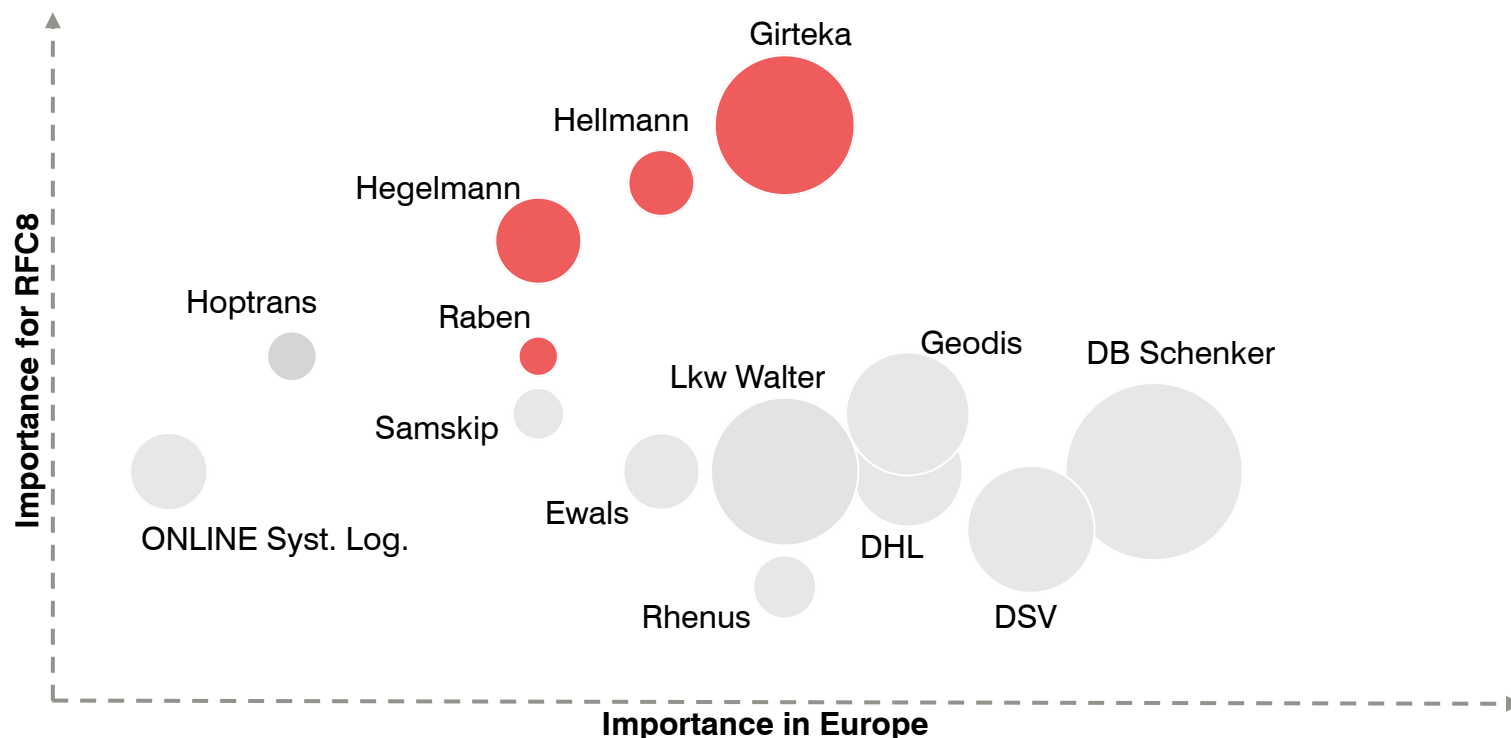
Number of routes by port (in routes per month)

Port	Country	Routes
Rotterdam	NL	~70
Moerdijk	NL	~5
Antwerp	BE	~40
Zeebrugge	BE	~5
Le Havre	FR	1
Bilbao	ES	~5
Algeciras	ES	2
Leixoes	PT	1
Lisbon	PT	1
Szczecin	PL	~5
Gdynia	PL	~20
Gdansk	PL	~10
Klaipeda	LT	~40
Riga	LV	~25
Paldiski	EE	~15
Tallinn	EE	~5
Muugu	EE	~5

The operator landscape in the North Sea and Baltic area is very heterogeneous –many competitor serve the whole of Europe; Girtoka and smaller operators have specialised on east-west transport



European FTL<sup>1</sup> operator landscape  
(selection<sup>2</sup>)



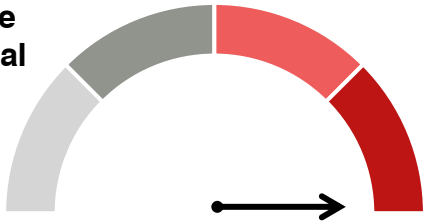
- The **operator landscape** for road transport relevant for RFC 8 is **very heterogeneous**: while many bigger European player which offer all kinds of logistics services are active on the corridor, there are also companies specialised in FTL (e.g., **Girtoka**) or in transports to Eastern Europe (e.g., **Hellmann**).
- In general, it is hard to estimate the total number of operators that are relevant for the corridor due to the granularity of the sector.
- Big competitors like **DHL**, **DB Schenker**, **DSV** are important operators in Europe, but without focusing on the North Sea and Baltic area.
- On the other hand, there are several medium-sized competitors, like **Samskip**, **Raben** and **Hoptrans**, with a much bigger focus on transports to and from Eastern Europe.
- **Geodis**, subsidiary of SNCF group, offers road transport across Europe with a focus on France.

1: Full-Truck-Load; 2: selection by company size (revenue), amount of locations and offices, share on markets along RFC 8  
Source: Company website, SCI Database, Fraunhofer/DVZ

Key buying factors for potential customers in a competitive market environment are price-sensitivity and quality-orientation – CO<sub>2</sub> emission savings can become a larger factor in the long term

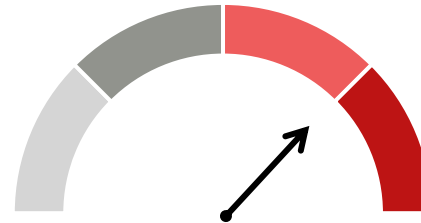
### Price

Importance  
for potential  
clients



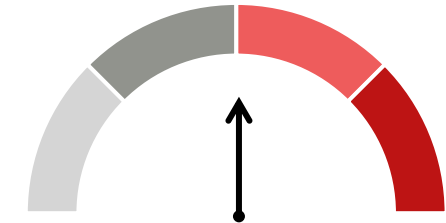
- Road freight transport is a highly competitive market, resulting in very high-cost awareness on side of potential clients. In most cases, intermodal operations are only competitive if costs for total transport chain are less than costs for road
- **Rail transport can offer competitive prices on some long-distance routes; future advantage for rail with increasing road producer prices**
- **The rising price of diesel, also with a view to CO<sub>2</sub> pricing, and the increases in tolls are leading to rising prices in road transport. Fluctuations in electricity prices also affect rail**

### Speed & Reliability



- Road freight operators usually operate in tight time schedules in just-in-time supply chains, resulting in a need for fast and reliable connections
- **Rail transport eliminates the need for law-mandated breaks for drivers, resulting in shorter transport times**
- **Longer handling time when compiling trains compared to road traffic becomes increasingly less relevant the longer the total distance is**
- **Poor infrastructure or avoiding construction sites comes at expense of speed and reliability**

### CO<sub>2</sub> emission savings



- Growing commitments by companies to reduce carbon emissions in the next decades puts forwarders and road freight operators under pressure to cut transport-related CO<sub>2</sub> emissions
- **Rail transport allows potential clients to reduce CO<sub>2</sub> emissions without cost increases for end consumers, as rail transport is considered low emitting, whereas clients must actively decide to offset emissions when choosing road transport, which involves higher costs**

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