



INTERMODAL TRANSPORTATION

Navigating Future Challenges and Opportunities

An aerial photograph of a large container yard, showing numerous stacks of colorful shipping containers (blue, red, green, yellow) and several yellow gantry cranes. The yard is situated next to a road or railway track.

ITN WORKSHOP

18 February 2025

11:00 - 17:00

Brussels, Belgium!



epca.eu/itn

brought to you by EPCA's
Supply Chain
Program Committee



10:30-11:00

Badge pick-up and welcome coffee

11:00-11:15

Welcome and introduction

11:15-11:45

A recap of the ITN journey so far – and looking ahead

11:45-12:30

Outlook on the success factors and trends - Keynote presentations with Q&A
1. Legislative outlook, Maria Koidu (European Commission)

12:30-13:30

Lunch break

13:30-15:00

Outlook on key success factors and trends (continued)
2. Development in the Spanish rail market: Javier García (ADIF)
3. IT interoperability and visibility: Aldo Puglisi (DX Intermodal)
4. Infrastructure capacity and modal shift facilitation: Ralf-Charley Schultze (UIRR)
Q&A

15:00-15:30

Coffee break

15:30-17:00

Workshop: integrate learnings on the outlook

17:00-17:15

Closing

The Intermodal Transportation Network

EPCA, the ITN team and partner Deloitte are pleased to host you here today

The intent of the ITN is to **examine opportunities for improvements in intermodal transportation and explore ways the EPCA community can work together to provide mutual support**



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Welcome to our guest speakers of Today!

We are pleased to introduce to you the guest speakers that will share their interesting perspectives and outlooks today

1

Promoting intermodal transport



Maria Koidu

European Commission Official

2

KV4.0 - Digital data hub for intermodal transport



Aldo Puglisi

Managing Director of DX Intermodal

3

Infrastructure capacity and modal shift facilitation



Ralf-Charley Schultze

Director General UIRR

4

Development in the Spanish rail market



Javier García

Deputy Commercial Director,
Directorate of Logistics Services ADIF

The background of the slide is a photograph of a beach with driftwood, overlaid with a semi-transparent green filter. The driftwood is scattered across the sand, and the ocean is visible in the distance. A white rectangular box is positioned in the upper half of the slide, containing text.

Please share with your table your name, background, and why you are joining this event today

The background of the slide is a photograph of a beach with driftwood, overlaid with a semi-transparent green filter. The driftwood is scattered across the sand, and the ocean is visible in the distance. A white rectangular box is positioned in the lower-left corner of the slide, containing text.

**5 minute icebreaker:
Introduction to your table**

EPCA

A recap of the ITN journey so far –
and looking ahead

by **Deloitte.**

FEBRUARY 2025 | DELOITTE | INTERMODAL TRANSPORT

Our journey so far

Let's briefly recap the ITN initiative's efforts

1. ITN

- 1. Carbon neutral transportation
- 2. Respond to driver shortage
- 3. Improve customer experience

2. WORKSHOP APR. '24

- Conducted survey
- Identified obstacles to intermodal
- Developed solutions, action plans

3. WEBINAR: NOV. '24

- Took stock on Intermodal Shift
- Action plan lessons learned

4. WORKSHOP #2: TODAY

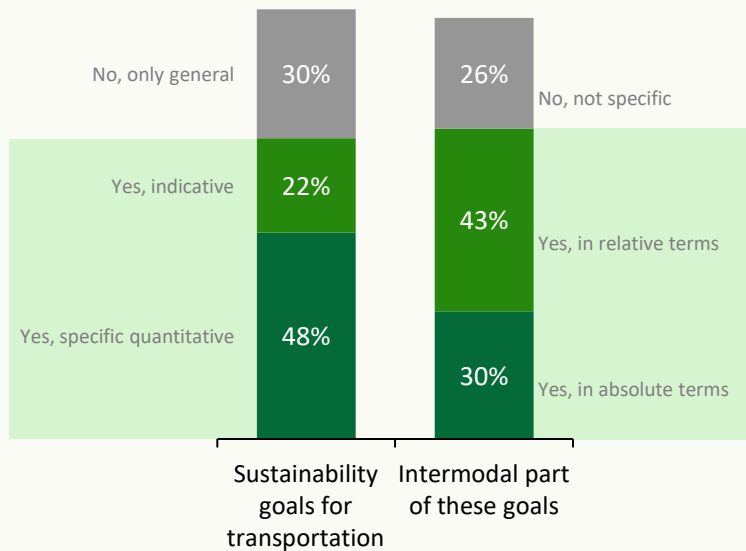
- Navigating future opportunities – and challenges

'24 Survey results: commitment to intermodal and expectations of growth

Most Shippers and LSPs are committed to leverage the potential of intermodal transport and increase its use, which to date has not been fully exploited

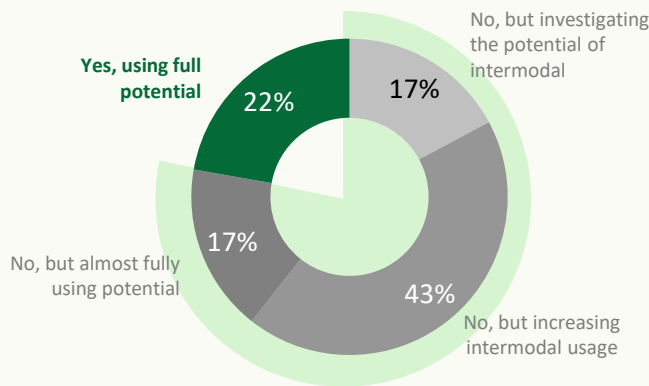
SUSTAINABILITY GOALS FOR TRANSPORTATION

- 70% of respondents indicated they have specific or indicative sustainability goals for transportation
- 73% stated the goals are focused on intermodal transport in absolute or relative terms



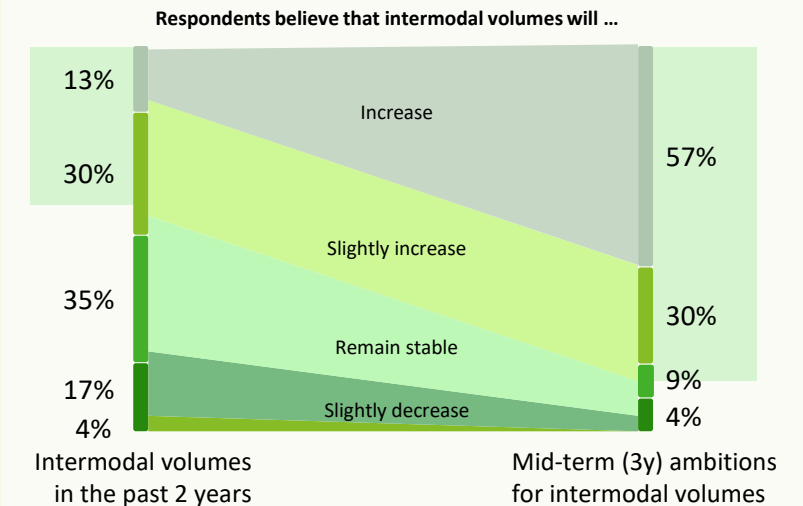
INTERMODAL POTENTIAL UTILIZATION

- 78% believes full potential of intermodal transport is not yet utilized



INTERMODAL VOLUMES





- Only 43% of the respondents stated that intermodal volumes (slightly) increased during the past 2 years
- However, 87% believes intermodal volumes will increase over the coming 3 years







'24 Survey results: Key factors determining the modal decision

Last year from the responses to our survey it emerged that cost, reliability, and safety were critical to transportation decision-making.

KEY FACTORS DETERMINING MODAL DECISION IN 2024

-  **Cost and reliability** were widely perceived as most critical regarding intermodal transportation (65-70% first or second priority)
-  **Safety** is an important factor in the modal split decision, but as a pre-requisite
-  **Sustainability, Flexibility, and Transparency** are lower priorities
-  **Frequency** of intermodal transportation was not an immediate priority for modal shift

KEY DRIVERS EXPECTED TO BENEFIT INTERMODAL IN THE FUTURE

-  **Stringent regulation on GHG emissions** is generally expected by both LSPs and shippers to increase intermodal use
-  **Planned higher investments in rail are expected to improve rail reliability and capacity**, although relatively more shippers expect this effect than LSPs
-  Most shippers and LSPs expect **pressure from end-consumers to use greener transportation**
-  **Increasing cost for road transportation** due to fuel prices, labor cost and road charges) is considered as a key driver for change to intermodal according to most shippers and LSPs

'24 Workshop: outcomes and tools developed

During the first ITN workshop common challenges were identified, possible solutions brainstormed, and templates for action plans shared in the report-out.

STAKEHOLDERS AGREED ON THE INTERMODAL CHALLENGES



In an **increasingly volatile, uncertain, complex and ambiguous world**, supply chains must be nimbler and more responsive than ever before



During the workshop we found that the **challenges that are encountered are recognizable** for the different personas in the industry (Shippers, LSPs and Operators)



Challenges occur on all levels: strategic level (e.g., capacity, long-term strategy and commitments to invest), tactical (e.g., flexibility, customer requirements) and operational levels (e.g., data sharing, performance)

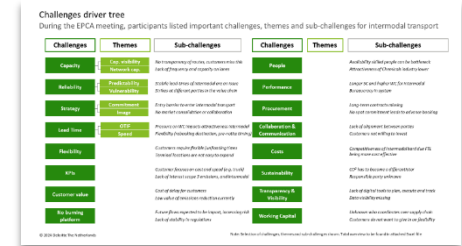


We brainstormed possible solutions to resolve the challenges and enable growth of the share and volume of intermodal transportation

THE REPORT OUT CONTAINED TOOLS TO ADDRESS THE CHALLENGES

The report out provided attendees with:

- A clustered overview of challenges identified
- A template “5-5-5” action plan describing activities (to perform in 5 days, 5 weeks, and 5 months) to implement the possible solutions and increase the use of Intermodal
- **The plans were tailored to the three main stakeholder types, Shippers, LSPs, and Operators**



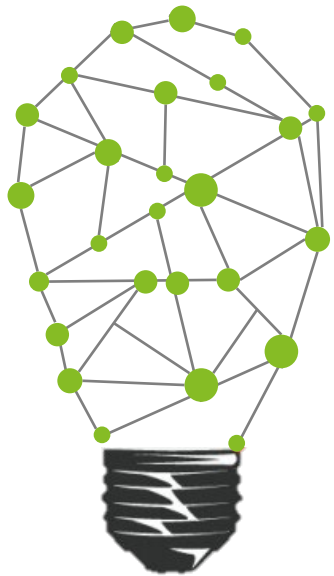
Solution category	Explanation
1 Set-up company intermodal (project) team	Define the involved parties and teams to manage the intermodal shift
2 Assess additional potential for intermodal	Collect and analyse volumes and calculate the potential of intermodal transportation
3 Engage and collaborate with external partners	Discuss cross-persona collaboration, and identify main corridors and network operations incl. expected volumes
4 Involve procurement	Collect and analyse all current contracts, and review if renewals are required
5 Perform process optimization across value chain	Perform process analyses and assess possibilities to integrate and share data
6 Integrate supply chain data	Integrate all data throughout the chain to facilitate intermodal transportation
7 Set up KPIs and report to stakeholders	Deploy intermodal KPIs and share with key stakeholders

Project Management Tool





Task	Start	End	Progress
Set-up company intermodal (project) team	2024-01-01	2024-01-05	100%
Assess additional potential for intermodal	2024-01-06	2024-01-10	50%
Engage and collaborate with external partners	2024-01-11	2024-01-15	20%
Involve procurement	2024-01-16	2024-01-20	10%
Perform process optimization across value chain	2024-01-21	2024-01-25	5%
Integrate supply chain data	2024-01-26	2024-01-30	0%
Set up KPIs and report to stakeholders	2024-01-31	2024-02-05	0%

Lessons learned from the previous workshop

Participants of the workshop appreciated the opportunity to hear the experience of others with intermodal and to explore opportunities for innovative intermodal logistics approaches



LESSONS LEARNED

CONFERENCE OUTCOME	IMPLICATION
 Obtained outside-in view on how intermodal performs	Sharing experiences led to “a-ha” moments: all companies that aim to replace road with intermodal transportation experience the same challenges
 Helped set realistic expectations	The solutioning workshop revealed that there are no silver bullets – this helps manage expectations for internal stakeholders (e.g., commercial and sales departments) that are pushing on service levels and price
 Provided inspiration for new logistics approaches and models	Intermodal is not only an alternative to road transportation and should not be seen that way: it also can enable new logistics models where stock is distributed, forward-based, and mobile close to key markets
 Served as a market exploration	Quickly interact with multiple shippers, LSPs, network operators, to learn what is on their mind, which topics are prioritized, and what their outlook

Workshop objectives

Today we will listen to four speakers who will provide us with insights on the factors moving the 'modal seesaw'. We will engage in dialogue after their presentations to integrate those insights in a 'wisdom of the crowds' exercise

Our main question for Today is....



What is the outlook on the position of the factors on the seesaw, and their relative weight?



How are these factors expected to develop in the short, medium, and long term?



What are the key interventions for the factors with the largest impact?



Do these interventions apply to outbound volumes, inbound volumes, or both?

We will work on these questions in break-out sessions. The outputs will be consolidated to create a wisdom of the crowds outcome

The modal 'seesaw'

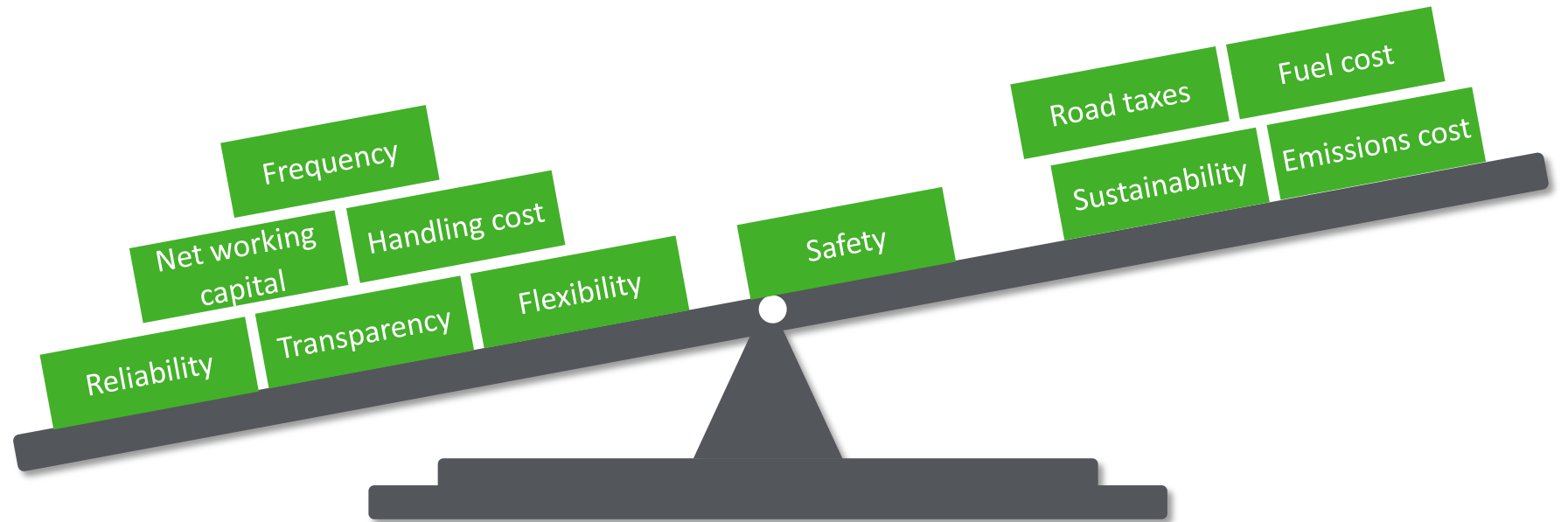
We identified the factors influencing modal decision-making in the first workshop. The balance can fall in favor of either road transport or intermodal transport depending on the weight and position of these factors on the 'modal seesaw'

Illustrative example of the 'modal see-saw' for a particular lane

- ❖ **Reliability:** timeliness of deliveries
- ❖ **Fuel cost:** diesel (surcharges)
- ❖ **Road taxes:** vignettes & other taxes
- ❖ **Emissions cost:** financial cost of emissions, e.g., CO₂ taxes
- ❖ **Handling cost:** (un-)loading at pickup, modal shift, delivery, etc.; wages and automation
- ❖ **Net working capital:** cost of inventory in transit
- ❖ **Transparency:** visibility on shipment status, coordinates
- ❖ **Frequency:** of the service between shipper and customer
- ❖ **Flexibility:** ease of booking,
- ❖ **Sustainability:** (brand) value of more sustainable shipping
- ❖ **Safety:** risk of handling hazardous goods

Road transport

Intermodal transport

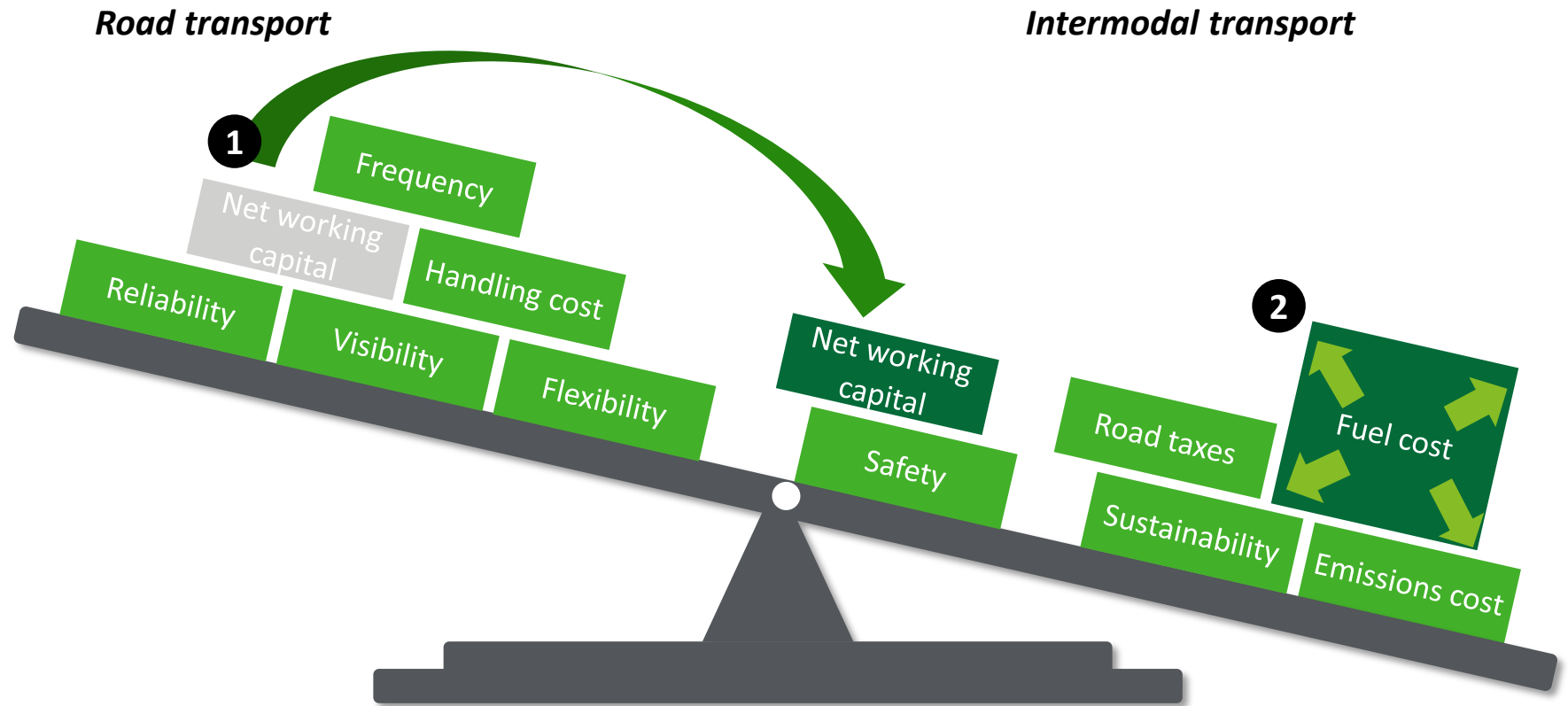


Example of a shifting balance

As the factors increase or decrease in weight, or shift position on the seesaw, the overall balance changes, such as in this example where lower interest rates and higher fuel costs facilitate a modal shift

Impact of two factors shifting on lane decision-making

- 1** Lower interest rates will reduce pressure on working capital optimization and make its impact on the decision for road transport or intermodal transport neutral, shifting it to the center of the balance
- 2** Rising fuel costs for trucks increase the relative advantage of intermodal



Follow-up interviews and webinar: taking the pulse

We performed follow-up interviews with workshop participants and conducted a brainstorm exercise during the November webinar to identify themes for this workshop. Several common threads emerged, and we have invited four speakers to provide us with insights



1. How to obtain internal stakeholder buy-in?

- How to **show crucial stakeholder that intermodal creates value**? E.g., Sales departments are often hesitant to offer intermodal transportation rather than road deliveries.
- How can intermodal be **more than an alternative to road** transportation?
- What are the **logistics models** that intermodal enables?



2. What is the impact of changing regulations on intermodal?



Maria Koidu
European Commission

- What does the EC see as **advantages of intermodality over road**
- **Which areas (geographical / sectors) have the greatest growth potential** for combined traffic according to the EC?
- What **framework and/or budgets** can be expected to facilitate such support?
- **What support can we expect from the EC** in terms of combined traffic / intermodality in the years to come?



3. How will IT developments facilitate the modal shift?



Aldo Puglisi
Mng. Director DX Intermodal

- What initiatives are ongoing to **improve and standardize data sharing**?
- **How will this increase flexibility and resilience** to avoid delays, or provide better visibility on rerouting impact and scenarios?
- Where can **simplification** of ways of working contribute to increased overall efficiency?
- What is the outlook for intermodal ecosystem players to start using similar processes to **create transparency**? (e.g., in booking process for each terminal/operator)



4. What (positive) impact will the infrastructure works have?



Ralf-Charley Schultze
President UIRR



Javier García
Deputy Commercial Dir. ADIF

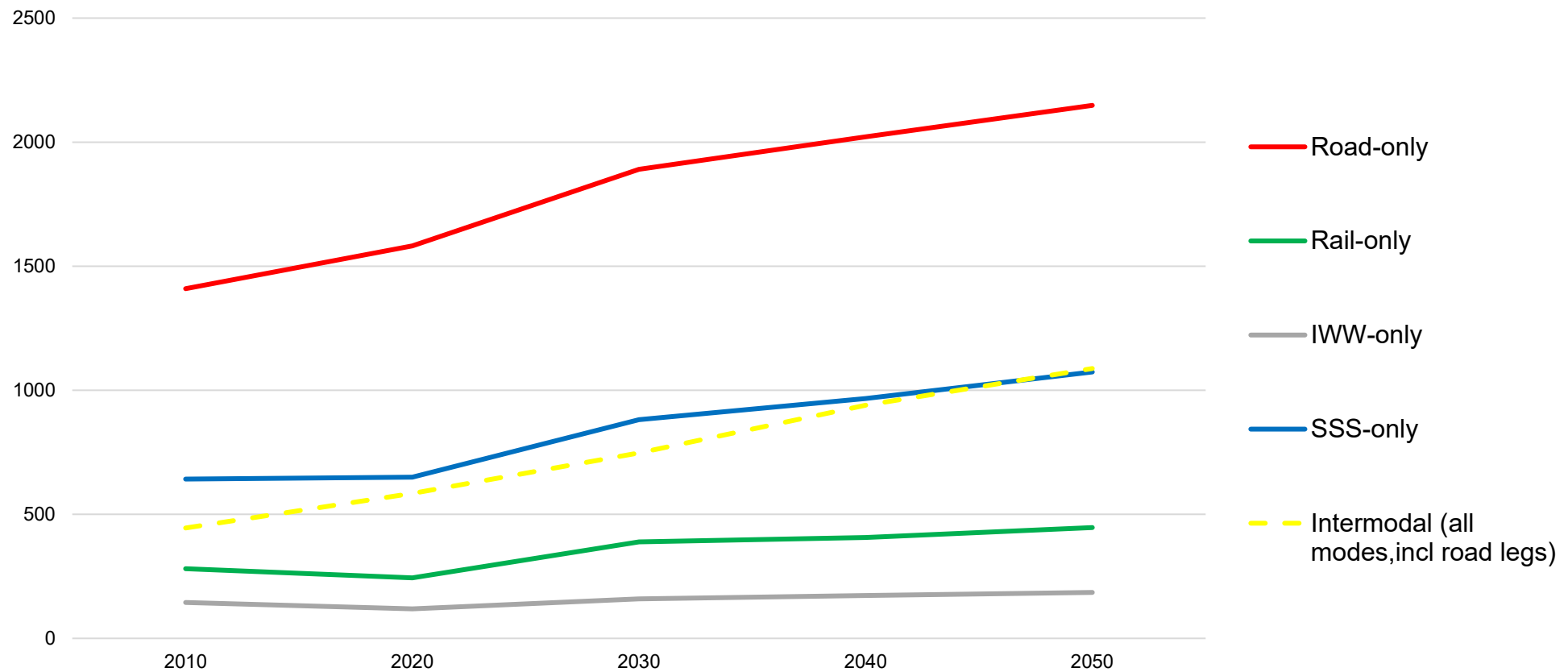
- How can (and have) investments in infrastructure **improved competitiveness** of intermodal on cost and performance compared to road?
- Which **other solutions are being implemented** through greater investment to resolve issues? (e.g., traffic management and other operational bottlenecks)

Promoting intermodal transport

EPCA Intermodal Transportation Network Workshop

18/02/2025

Intermodal transport (in tkm) prognosis

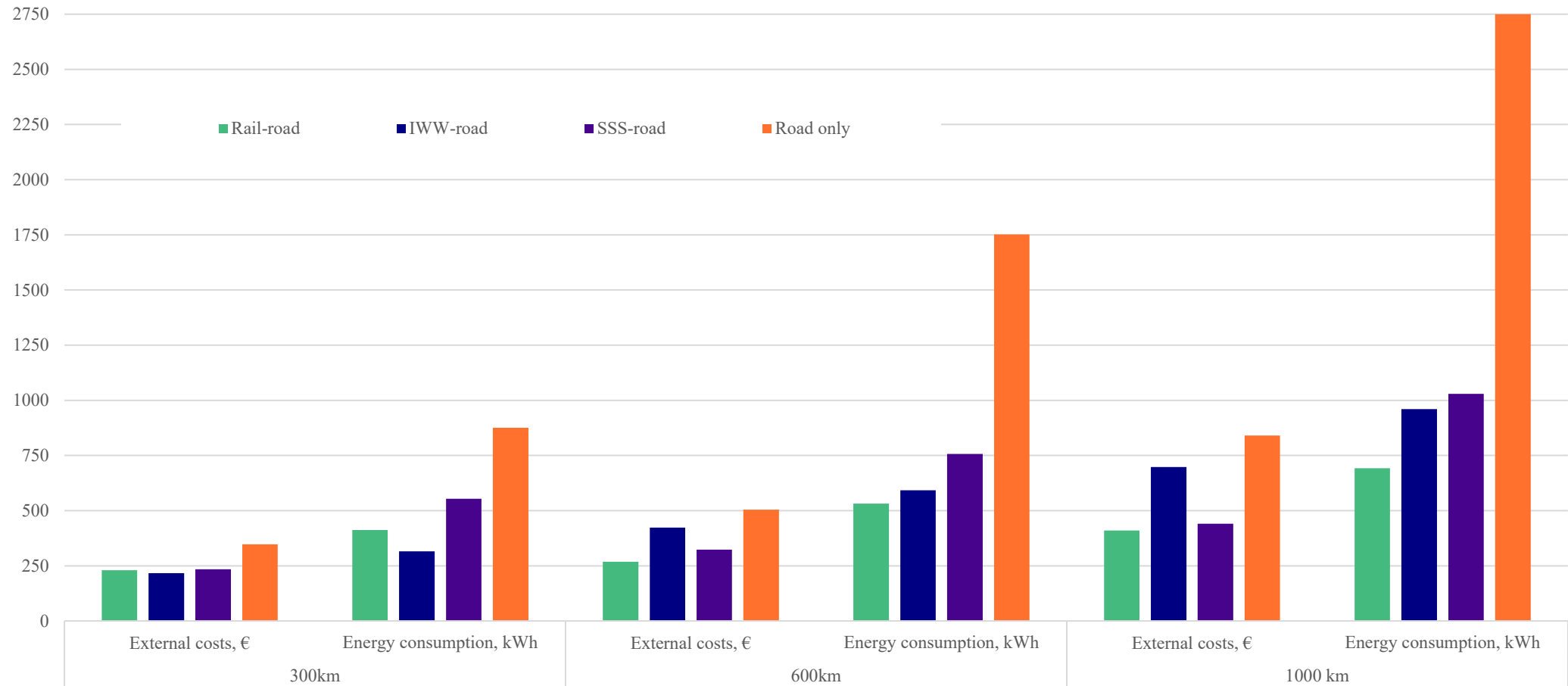


What are the advantages of intermodality over road?

- Not a target *per se*
- For society: improved sustainability aka reduction of negative externalities and energy used > for shippers/buyers: image
- For society: transport system optimisation > for shippers: new opportunities in logistic chain management



What are the advantages of intermodal transport over road?

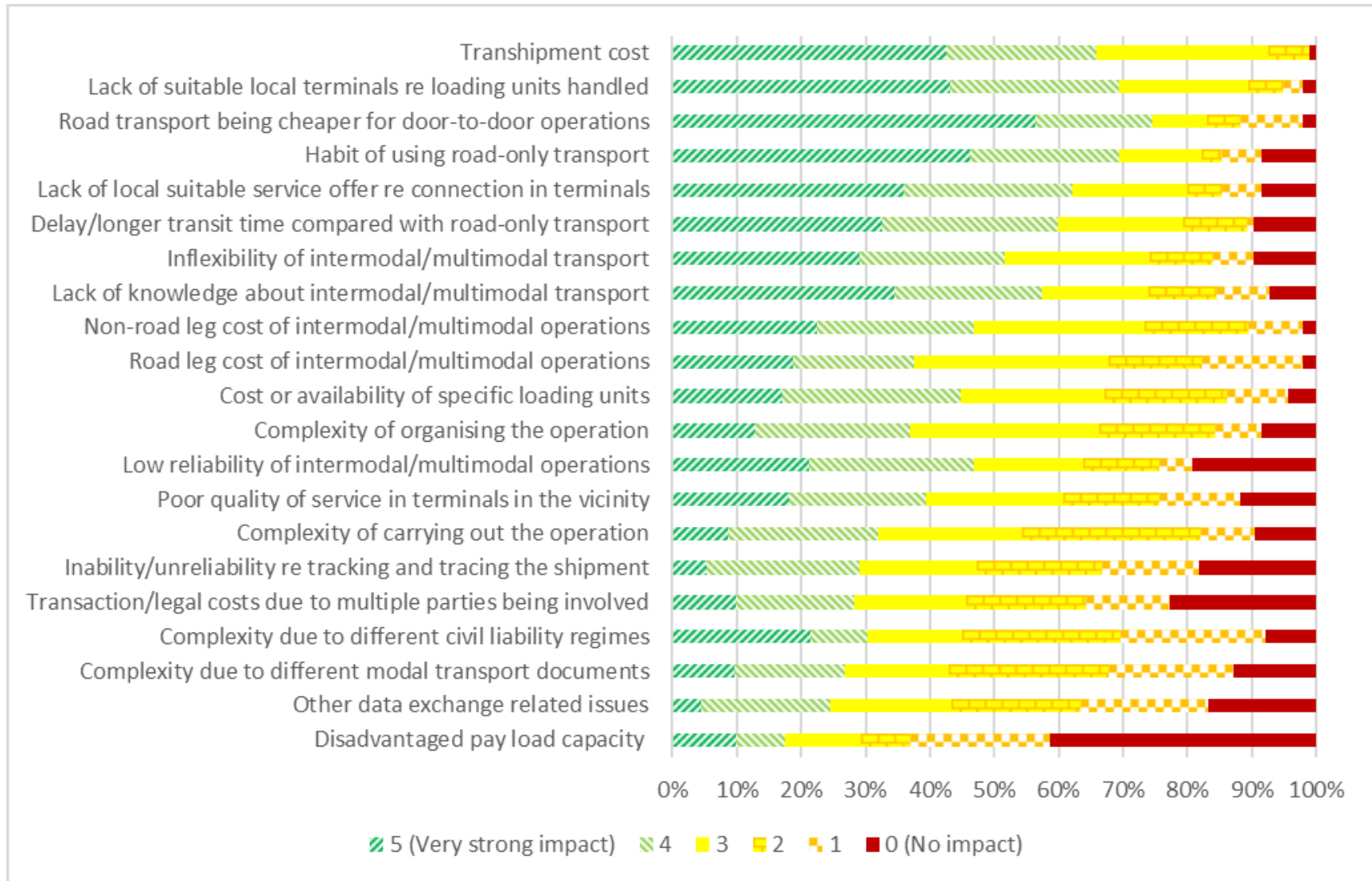


Where are the hurdles for intermodal?

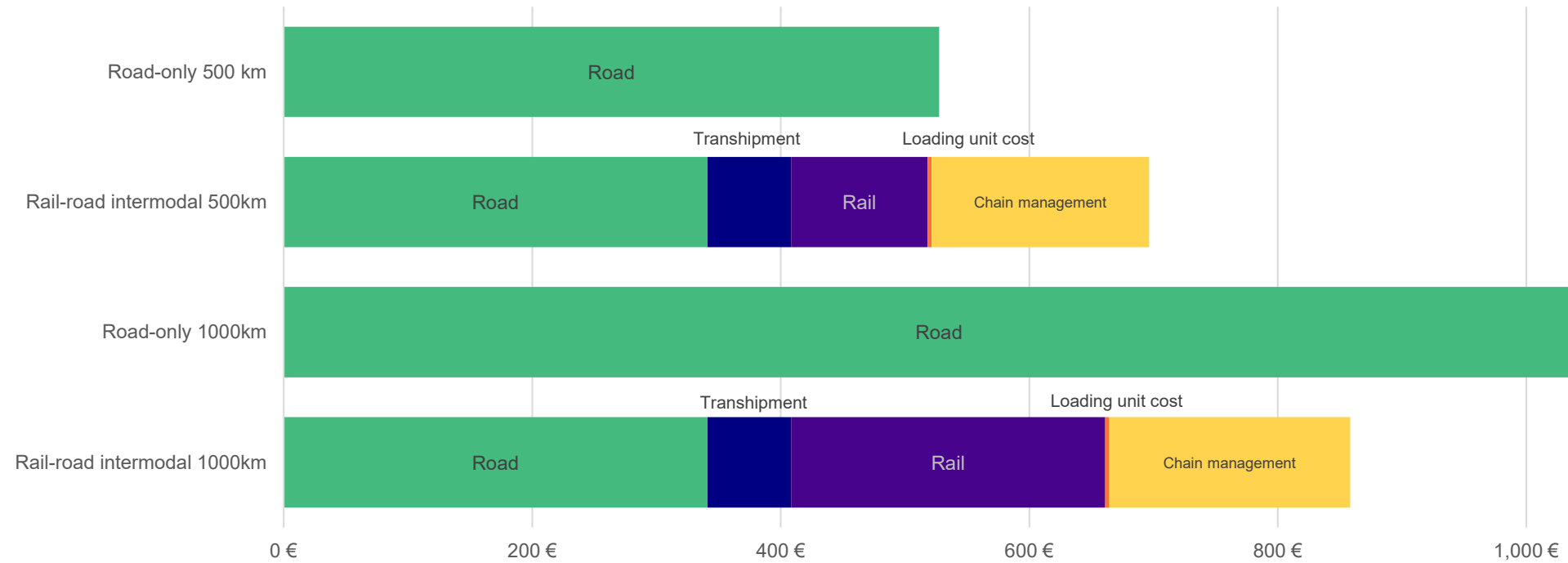
- Higher cost than road transport, mostly driven by:
 - transshipment costs
 - organisation/complexity costs
- Intermodal and non-road infrastructure and services:
 - Lack of terminals in vicinity that offer suitable service (type of loading unit, destinations, suitable timing and frequency)
 - Network and capacity
 - Quality and availability of services
- Convenience
- Habit and fear



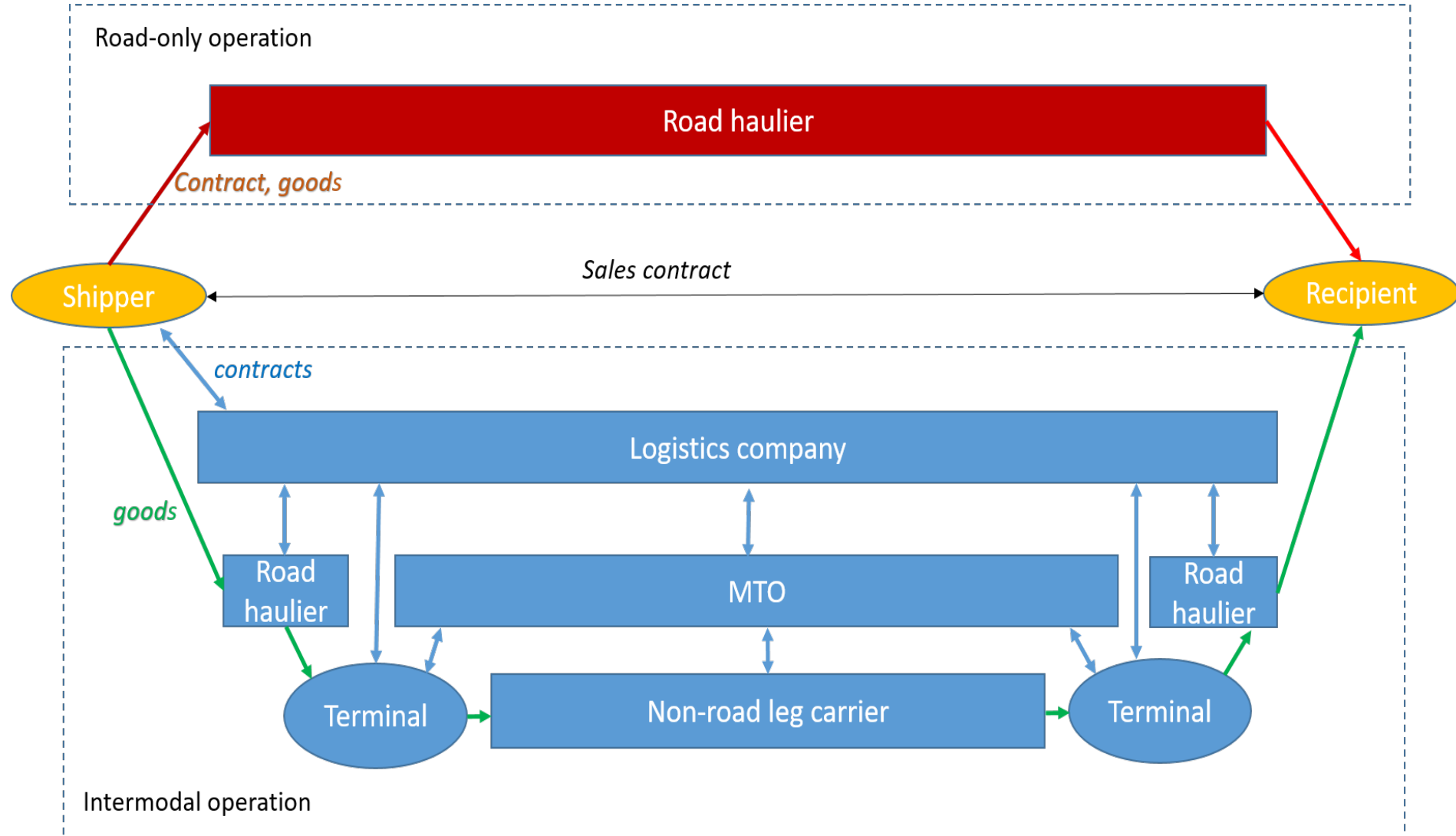
Where are the hurdles?



Cost compared to road, D2D



Complicated organisation and multiple set of rules



Which areas have the biggest potential to grow for intermodal traffic?

- For transport lanes, COM will be carrying out a study to identify the trade lanes with modal shift potential
- For sectors/shippers > high volume, regularity
- For modes > capacity constraints (transshipment, network) > maritime



The legal framework for support of intermodal transport

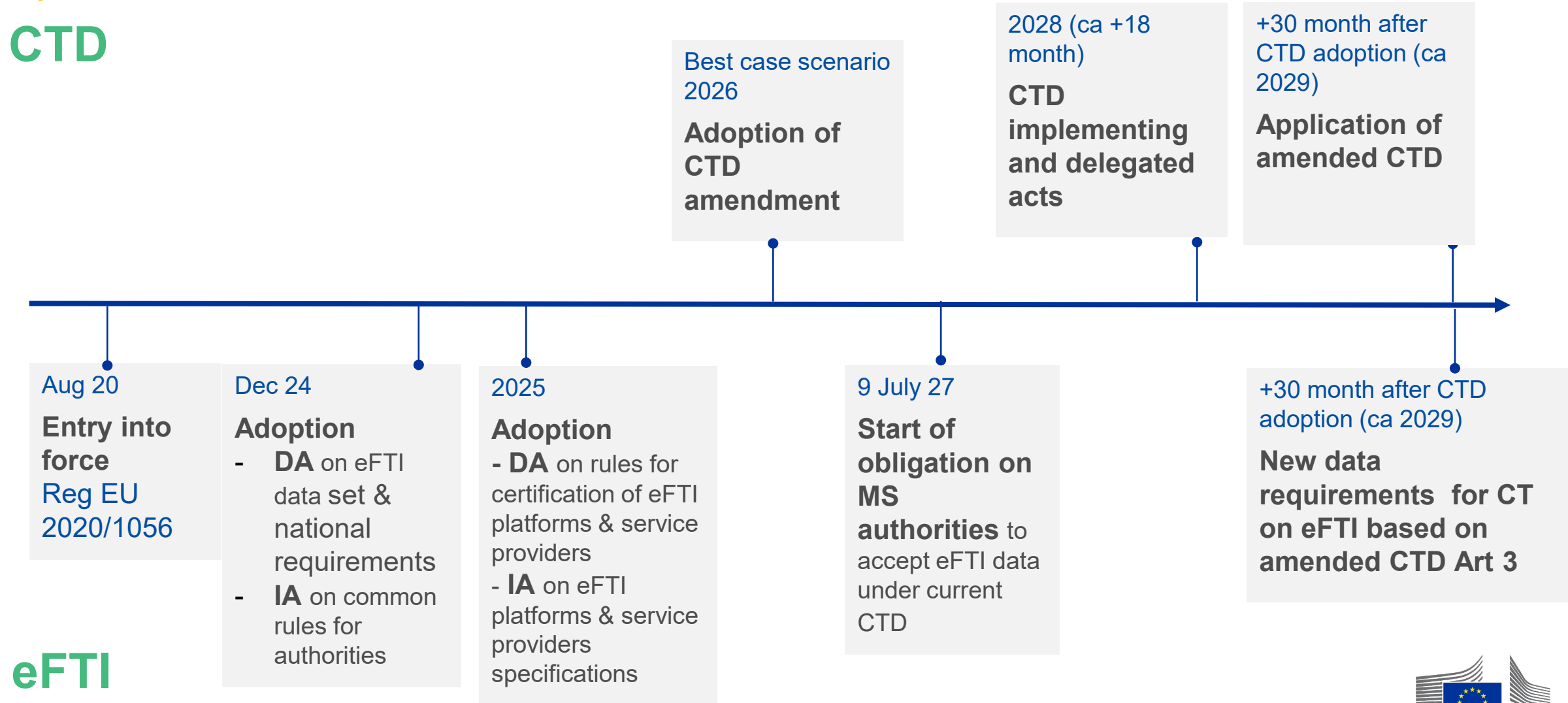
- Modal issues – modal regulation, e.g. rail capacity management, road weights and dimensions
- Horizontal issues – horizontal regulation, e.g. eFTI, CountEmissionsEU
- Intermodal issues – CTD, TEN-T terminals (Art 36)
- Cost – State aid for investments and operations



eFTI Regulation and CTD timelines

MS – Member States
DA – Delegated act (Commission Regulation)
IA – Implementing act (Commission Regulation)

CTD



eFTI



Support from EU budget

Investments (network and terminals) :

- CEF
- EIB
- Regional funds
- RRF
- Social Climate Fund

Operational support

- No operational support from EU funds



What can you do to accelerate growth of intermodal transport?

- Get better understanding of available options, but also identify clearly reasons for not using it so that these could be better addressed
- Bring it up with your governments to explain importance, but also reasons why not used as much as could
- Use the tools to educate buyers (e.g. GHG/externalities calculations)
- And most of all, start using it more to allow for economies of scale



Questions and comments?



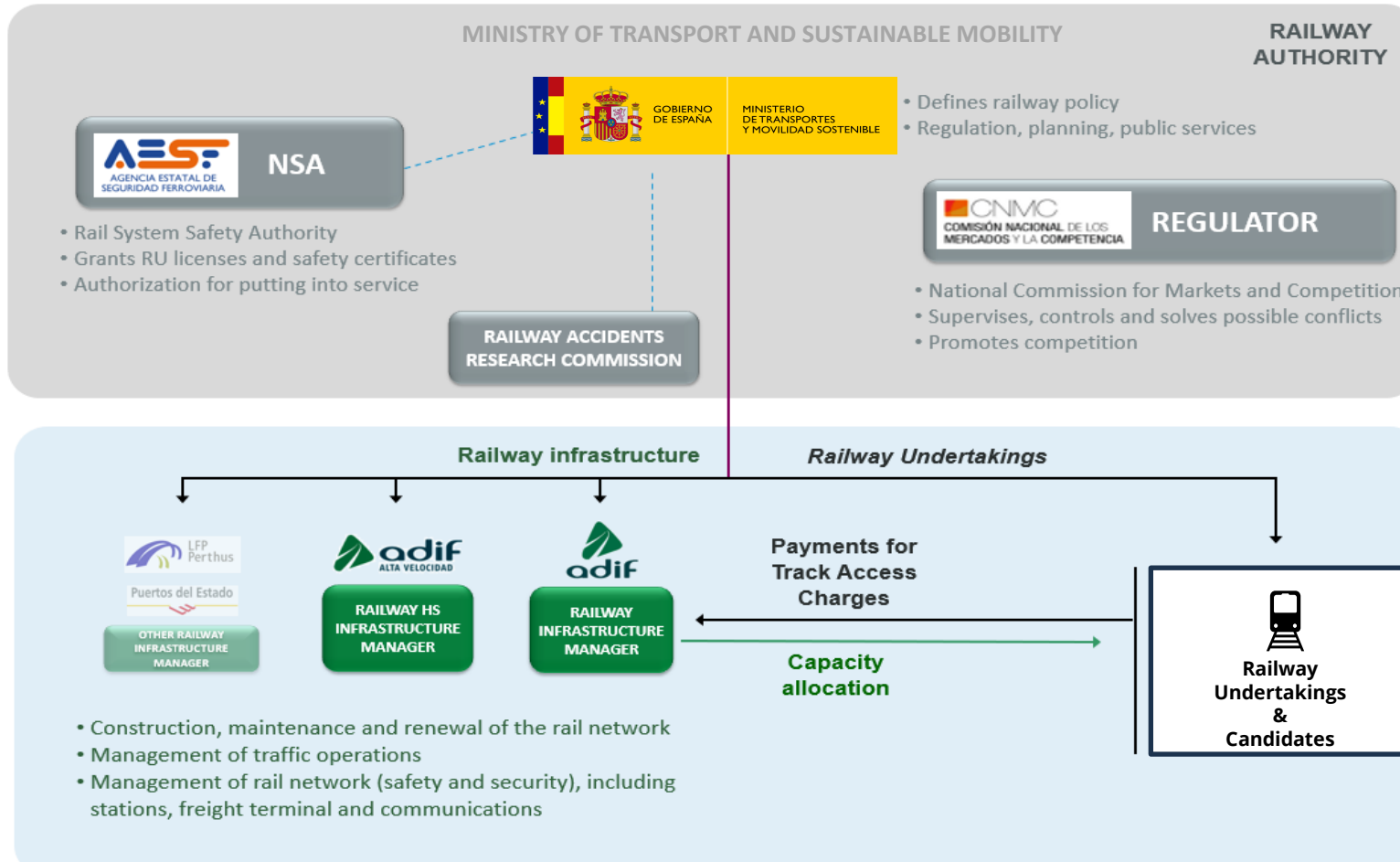
February 18th, 2025

Development in the Spanish rail market



Background & figures

Spanish railway sector



ADIF: Main tasks

-  Planning & Design
-  Construction
-  Capacity allocation
-  Traffic management
-  Maintenance and renewal

Chemical sector in Spain

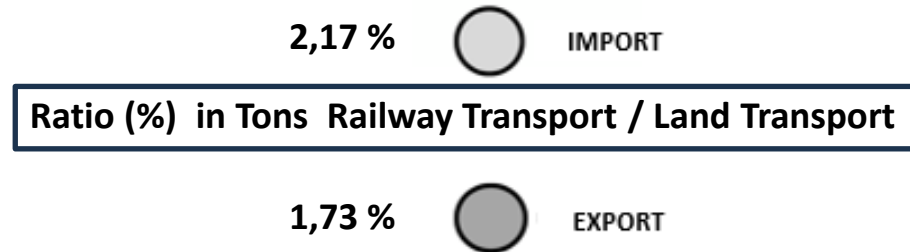


Source: FEIQUE, 2024

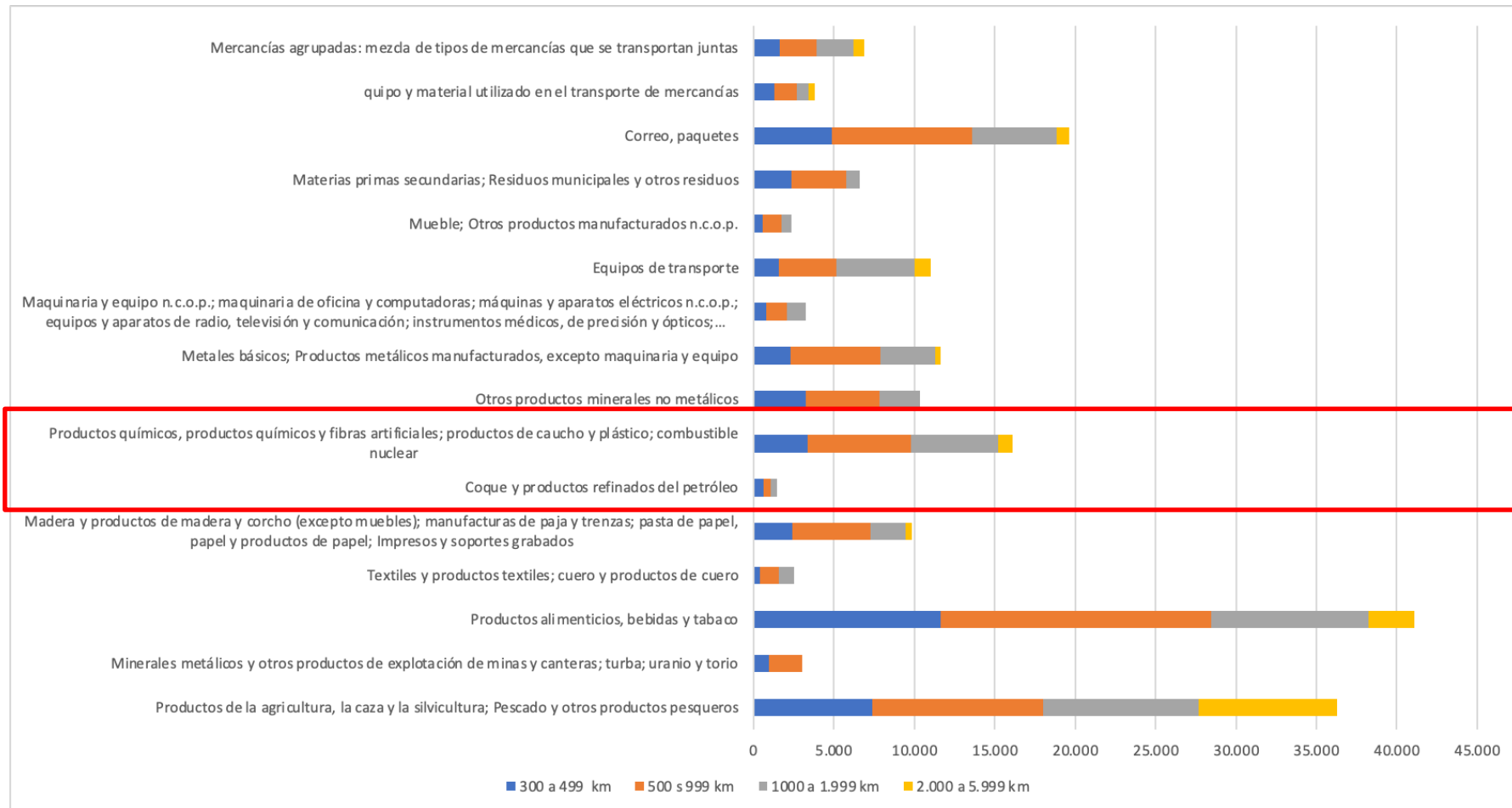
Source: Import / Export Data (Datacomex, 2024)

EXPORT			IMPORT		
Country	Tons	%	Country	Tons	%
France	3.789.976,36	26%	France	2.258.258	22%
Portugal	2.365.161,61	16%	Portugal	2.115.000	21%
Italy	2.176.283,42	15%	Italy	1.463.409	14%
The Netherlands	1.142.161,89	8%	Germany	1.190.211	12%
Germany	1.116.150,03	8%	The Netherlands	1.026.585	10%
United Kingdom	734.306,75	5%	Belgium	843.618	8%
Turkey	673.506,51	5%	Turkey	673.506,51	5%
TOTAL	11.997.546,57		TOTAL	10.094.703	

Chemical products import / export 2023, land transport



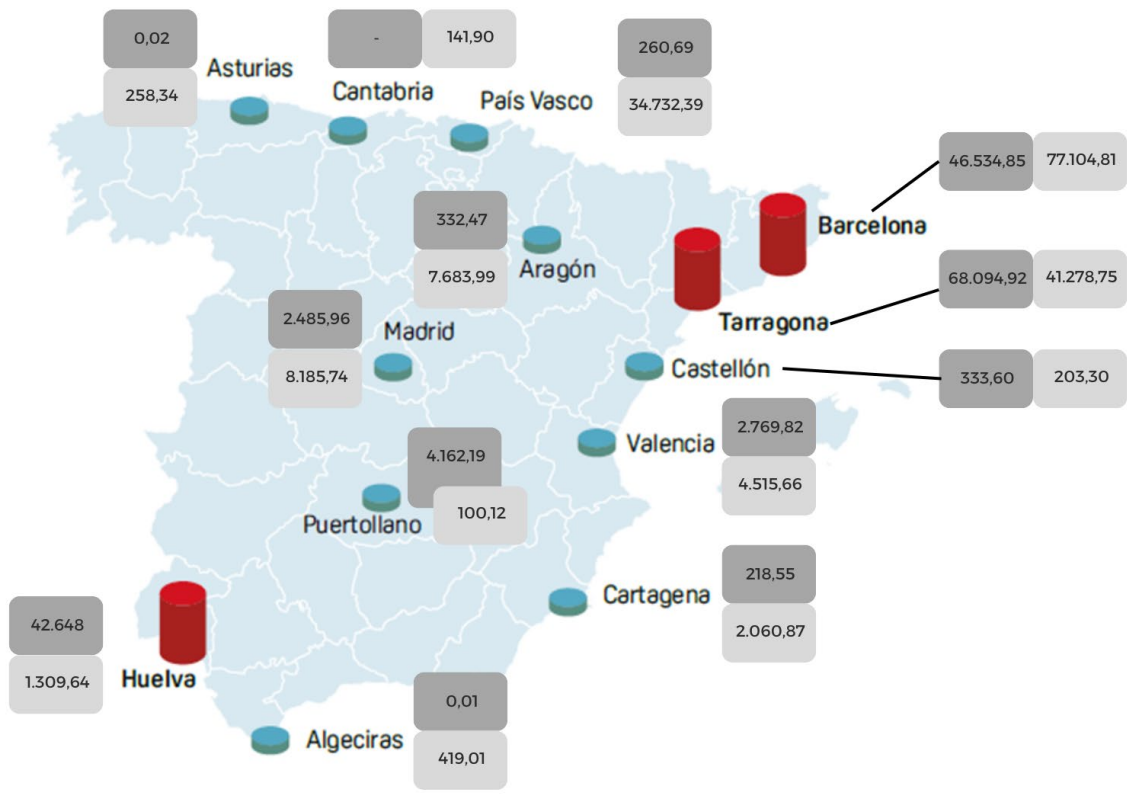
Chemical sector in Spain



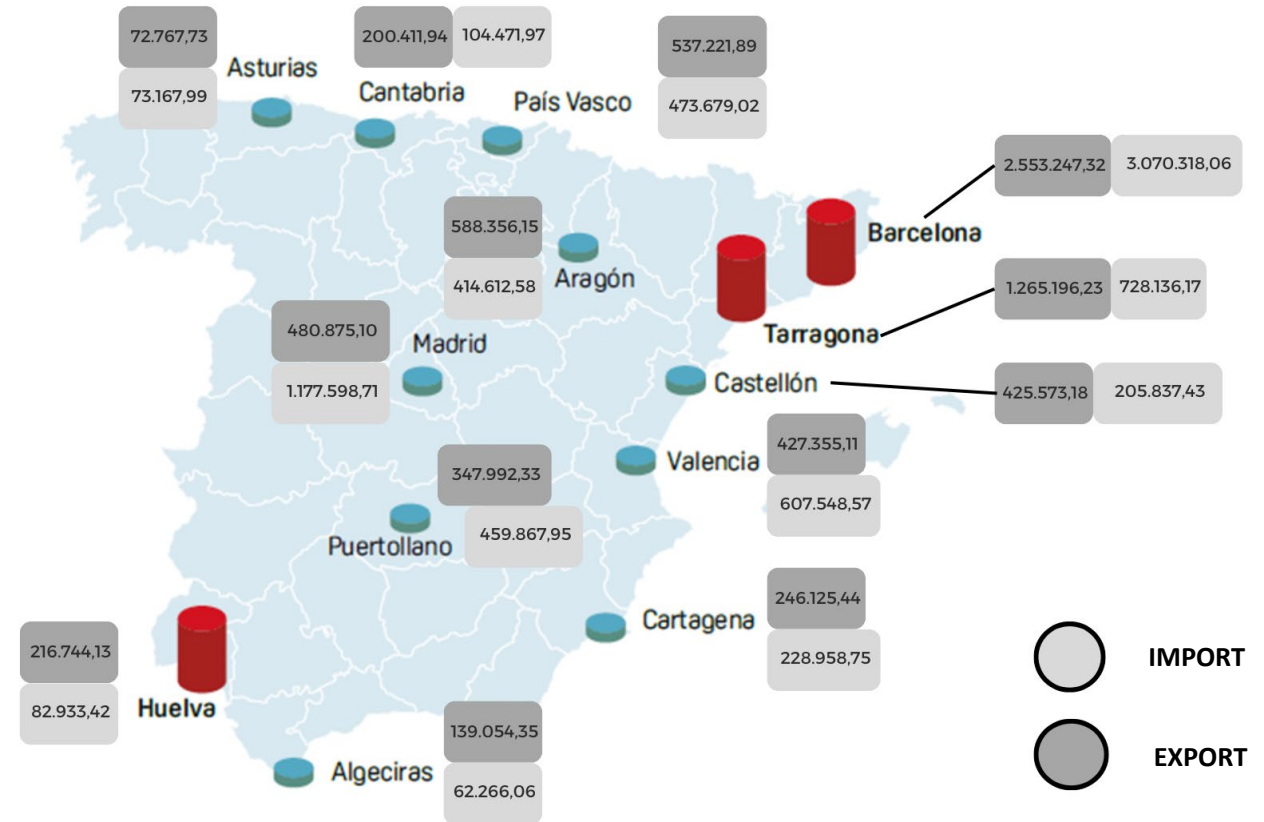
Road freight transport per type of goods (2022, Mt-Km)

Source: compilation based on data from Eurostat

Chemical sector in Spain



Railway transport in Ton, chemical products 2023

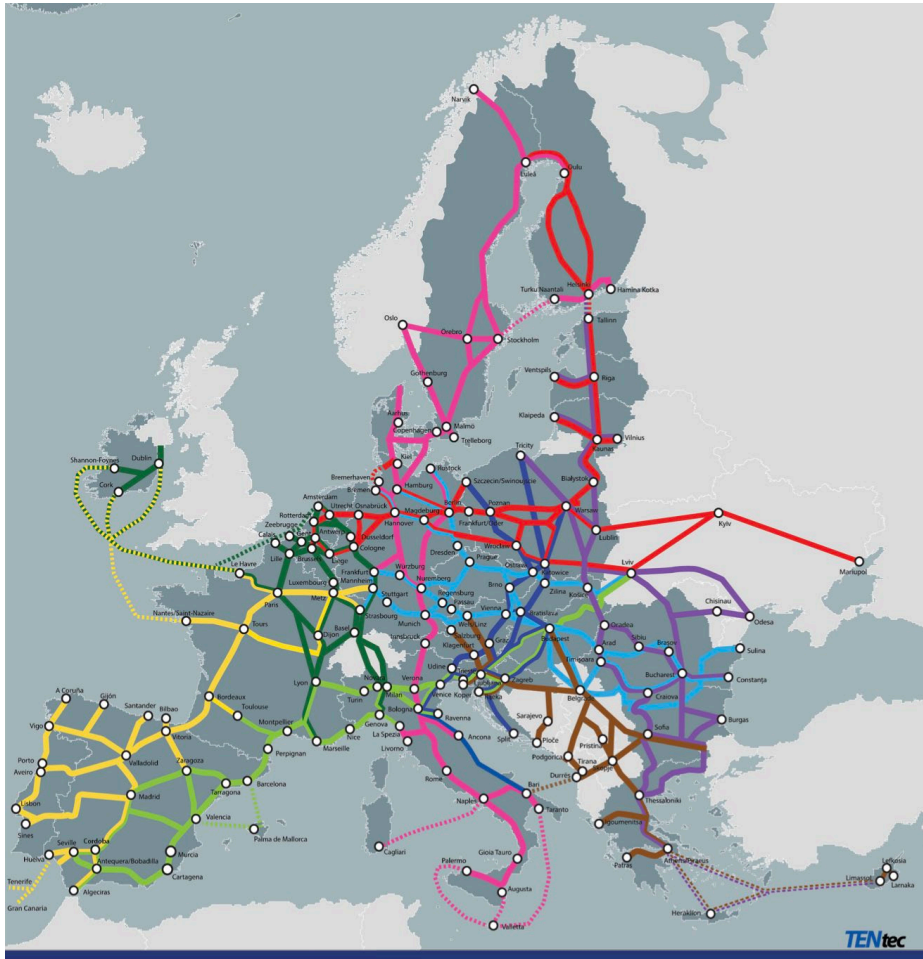


Land transport in Ton, chemical products 2023

Source: Map (FEIQUE, 2024) . Import / Export Data (Datacomex, 2024)

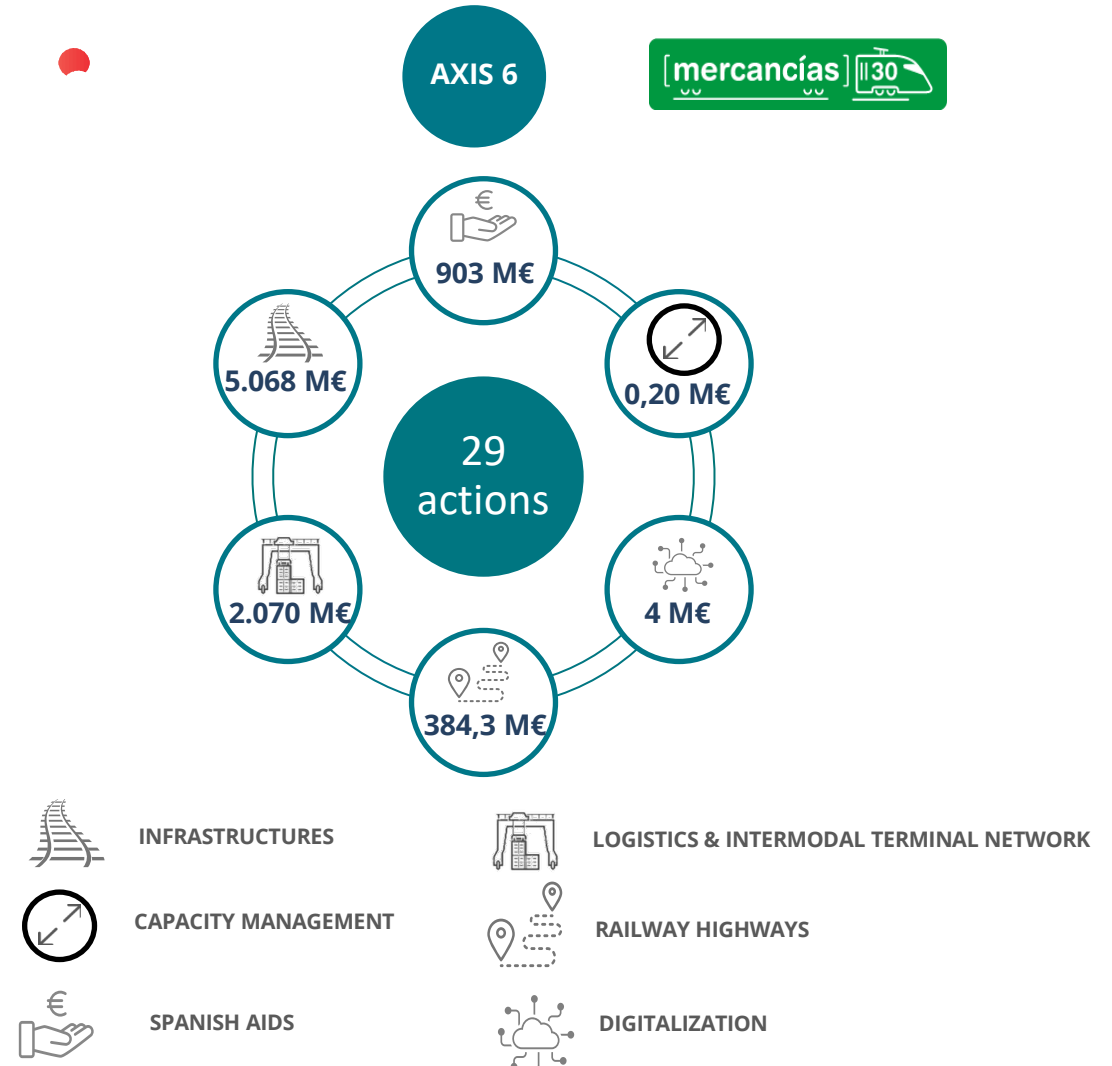
A modal shift of 10 % in freight transport by train in Spain by 2030

Red TEN-T. Corridors

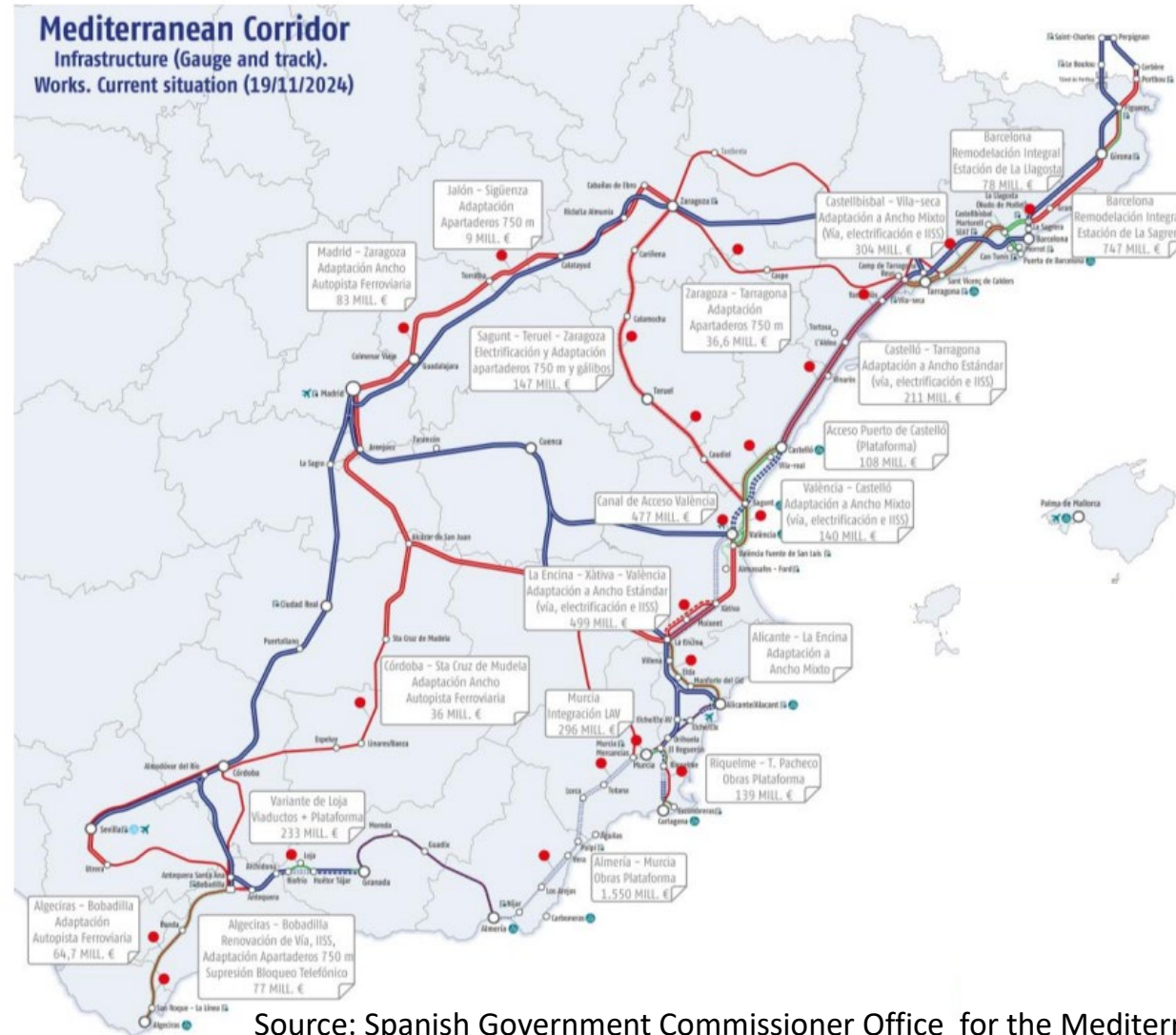


Source: <https://transport.ec.europa.eu/> Annex 3 TEN-T, Dic 2023

Mercancías 30



Mediterranean Corridor



Source: Spanish Government Commissioner Office for the Mediterranean Corridor

PROGRESS SINCE 2018



+7.276 M € tendered
(date: 12/11/24)

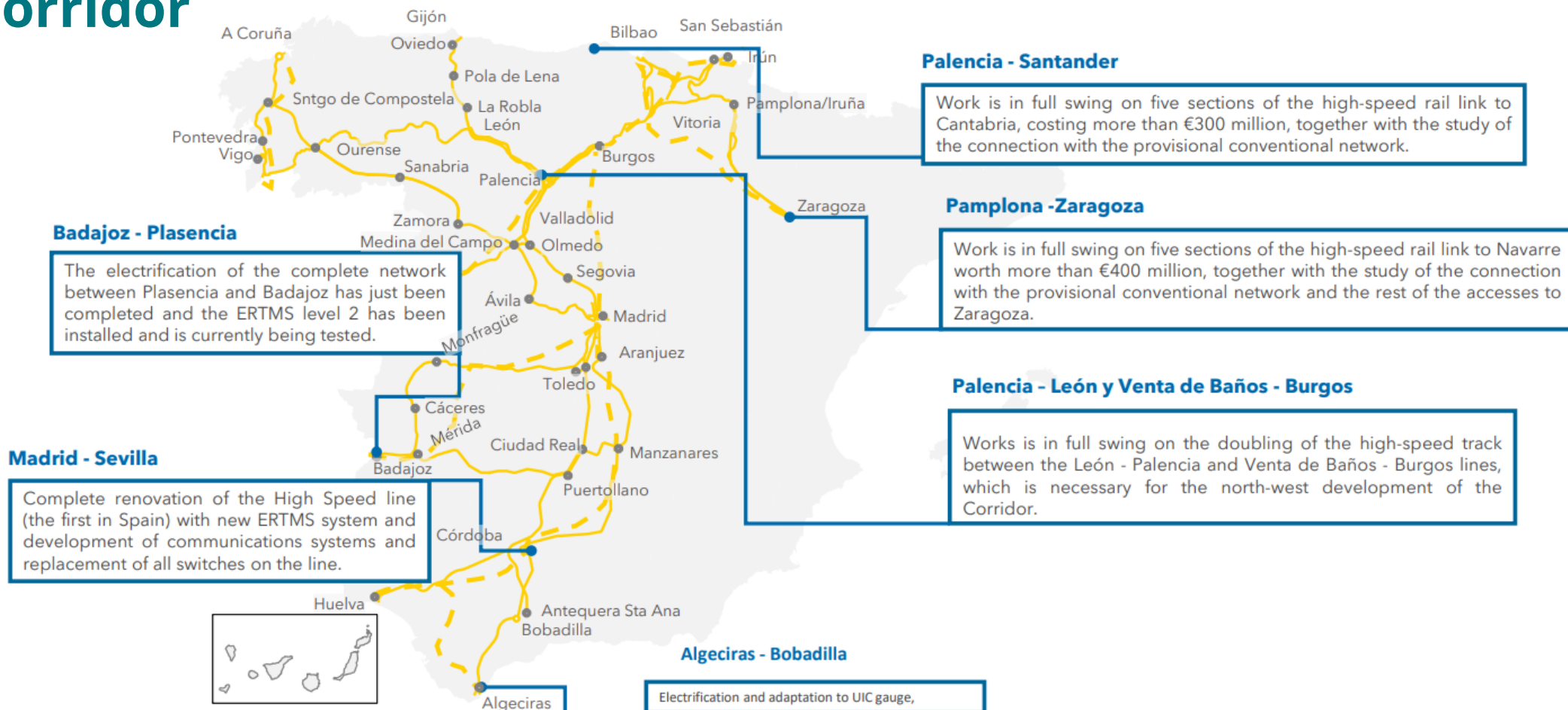


+5.300 M € awarded
(date: 12/11/24)



+3.900 M € built
(date: 31/08/24)

Atlantic Corridor



PROGRESS SINCE 2018

Source: Works 2024-2026, Spanish Government Commissioner Office for the Atlantic Corridor



+6.607 M € tendered
(Date: 31/10/24)



+5.048 M € awarded
(Date: 31/10/24)



+7.701 M € built
(Date: 31/10/24)

Railway Highways



ITINERARIES REQUESTED BY LOGISTIC OPERATORS:

IBERIAN GAUGE:

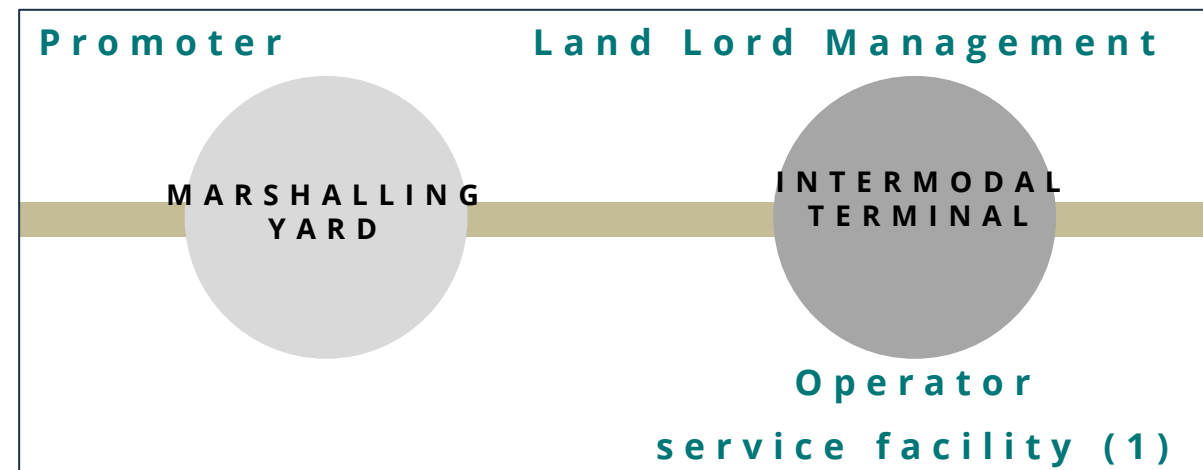
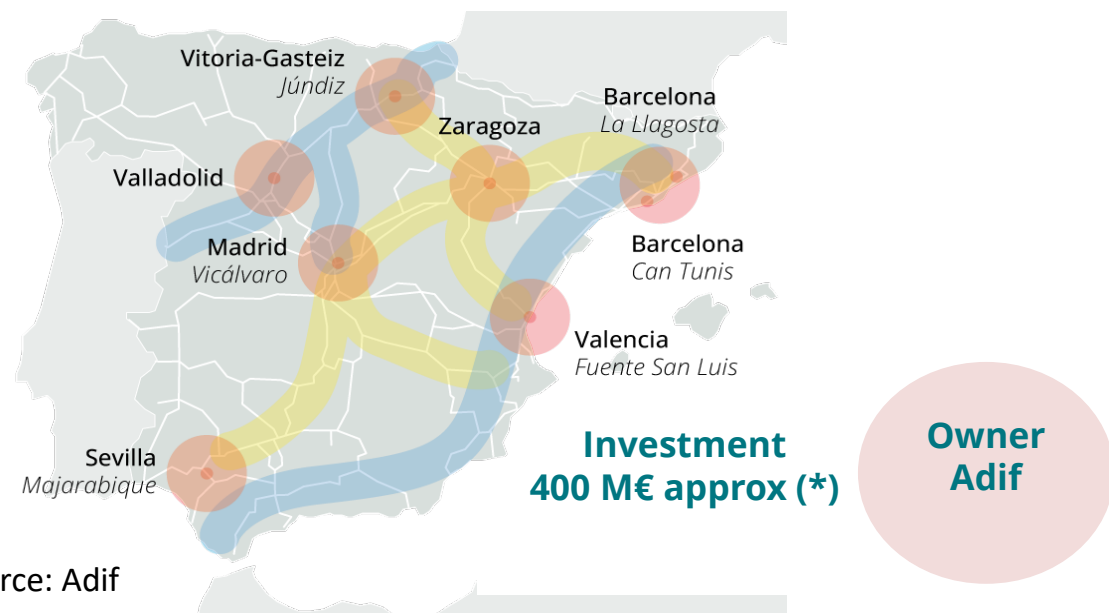
1. ALGECIRAS-ZARAGOZA
2. VALENCIA-MADRID
3. AZUQUECA-ZARAGOZA-TARRAGONA
4. HUELVA-CORDOBA-MADRID-ZARAGOZA
5. SEVILLA/ALGECIRAS-CÓRDOBA-MADRID-ZARAGOZA-BARCELONA
6. VALONGO-ENTRONCAMENTO-BADAJOS-AZUQUECA
7. AZUQUECA-VALLADOLID-BURGOS-VITORIA
8. VALENCIA-PUERTOLLANO-BADAJOS-ENTRONCAMENTO
9. MURCIA-MADRID-JÚNDIZ
10. TARRAGONA-ZARAGOZA-VITORIA
11. MADRID-BARCELONA
12. SEVILLA-MADRID
13. TAMARITE-IRÚN/PORTBOU
14. CADIZ-MADRID
15. SALAMANCA-JÚNDIZ
16. SALAMANCA-VALENCIA
17. VIGO-MADRID
18. VIGO-BARCELONA
19. MÁLAGA-AZUQUECA-BURGOS
20. HUELVA-JÚNDIZ

STANDARD GAUGE:

1. MURCIA-LE PERTUS
2. TARRAGONA-LE PERTUS
3. BARCELONA-LE PERTUS (Operativa)
4. VITORIA-IRÚN

Source: Adif

Logistics & Intermodal Terminal Network



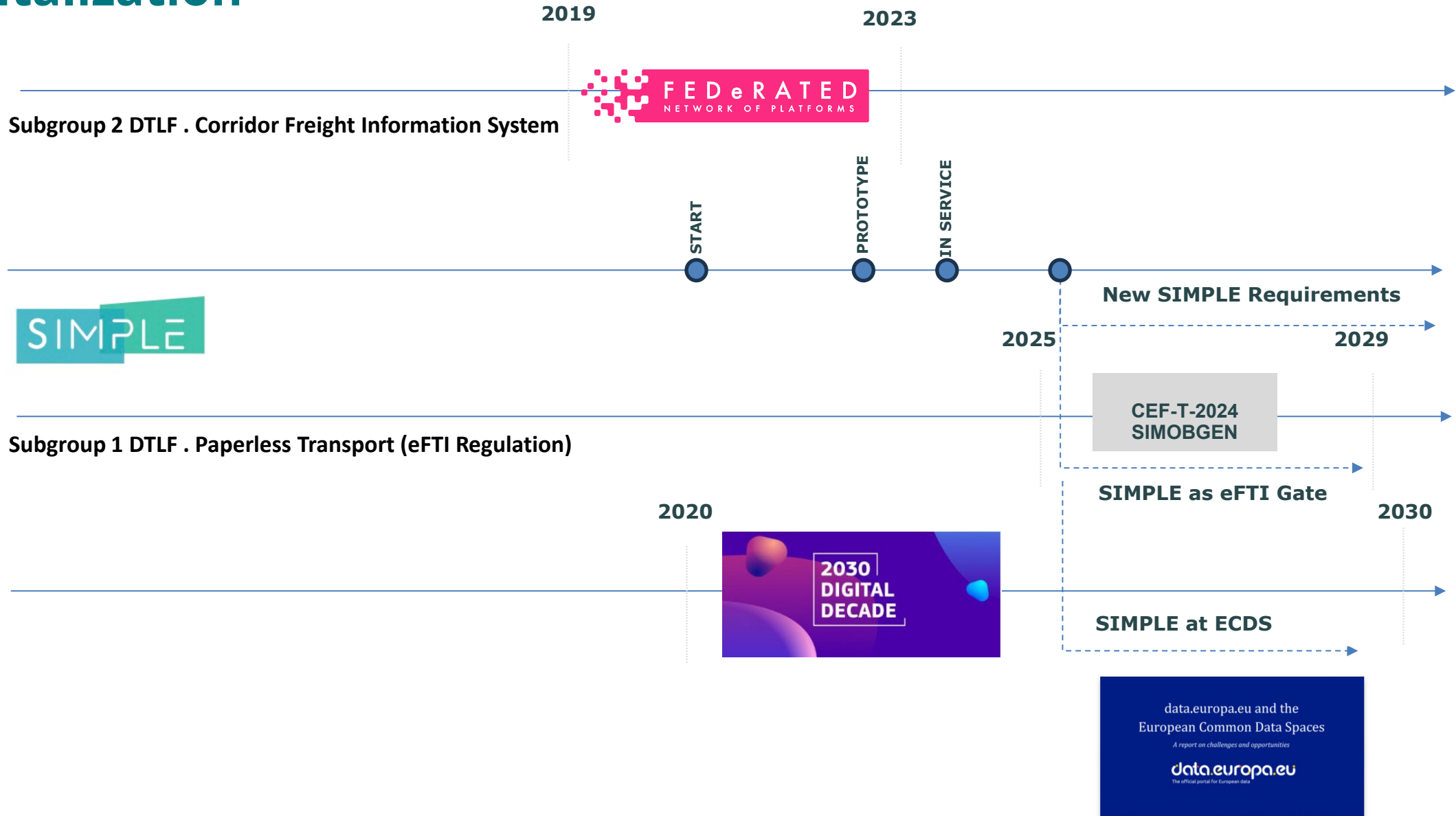
(1) COMMISSION IMPLEMENTING REGULATION (EU) 2017/2177 of 22 November 2017 on access to service facilities and rail-related services Directive 2012/34/EU of the European Parliament and of the Council of 21 November 2012 establishing a single European railway area (recast) Text with EEA relevance

(*) taxes included

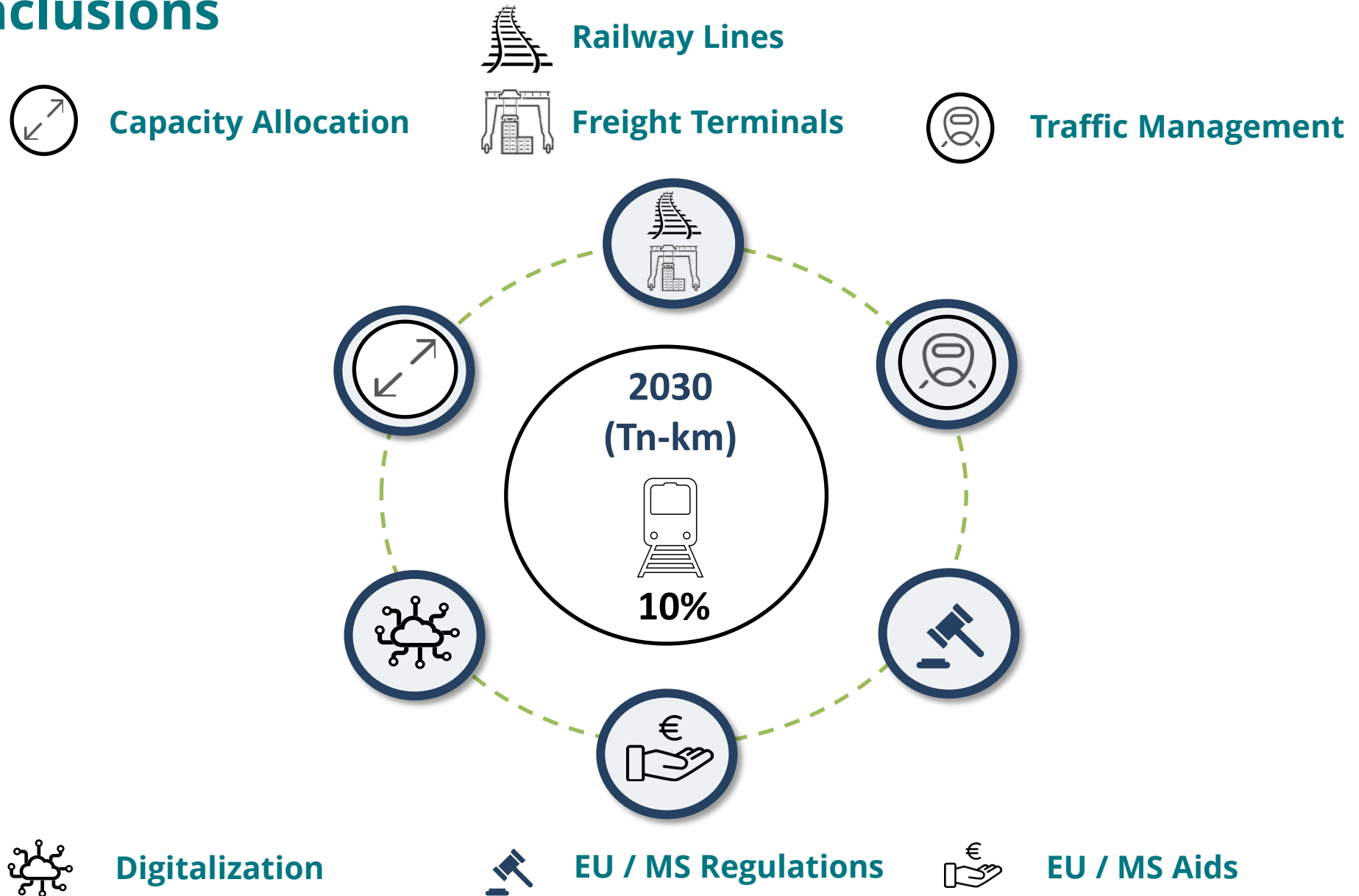
Source: Adif

TERMINAL	Implementation	Investment *	Operation
Madrid Vicálvaro	Phases 1B and 1C of project works in progress	140,1 M€	Awarded
Barcelona La Llagosta	Phase 1 project works in progress	110,0 M€	Awarded
Valencia Fuente San Luis	Phase 1 project works in progress	41,1 M€	Awarded
Valladolid	Phase 1 project works in progress	45,0 M€	Public tender pending
Vitoria-Gasteiz	Phase 1.1 project works in progress	36,9 M€	Public tender pending
Barcelona Can Tunis	In progress	34,1 M€	Awarded
Zaragoza Plaza	In operation	--	Awarded
Sevilla Majarabique	Functional study completed	--	--

Digitalization



Final conclusions



Digitalization



EU / MS Regulations



EU / MS Aids





KV4.0 – Digital data hub for intermodal transport

EPCA – ITN Workshop

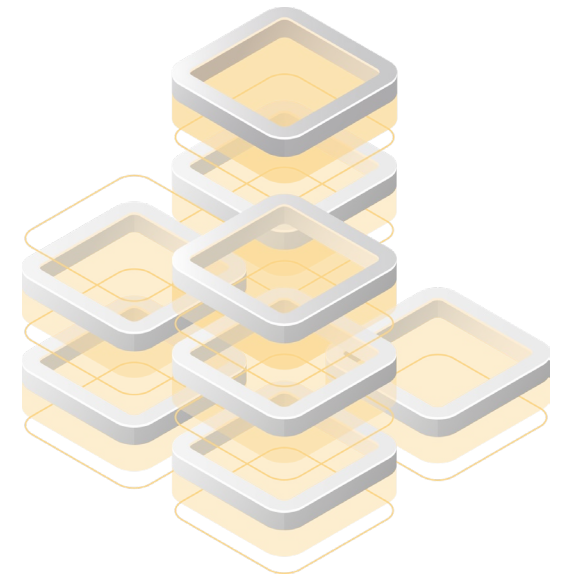
Aldo Puglisi, Managing Director DX Intermodal GmbH

Brussels, 18.02.2025



Agenda

- Introduction
 - KV4.0 Data Hub
 - Process coverage & standard interfaces
- Main benefits for the stakeholders
- DX Intermodal Company
- Q&A



Starting situation

The **complexity of intermodal supply chains** is one of the biggest challenge of intermodal transport compared to other transport methods



Many parties and electronic data interfaces (Terminals, LSP, RU, OP, etc.)

Elaborated organization of intermodal transports

Digital standalone solutions of the parties involved



Complex end-to-end information chain

Objectives

Common data hub for the exchange of bookings, timetable and shipment status data to support **intermodal standardization and digitalization**



Consolidation of all data within the intermodal supply chain

Availability of real-time data

Standardization and collaboration

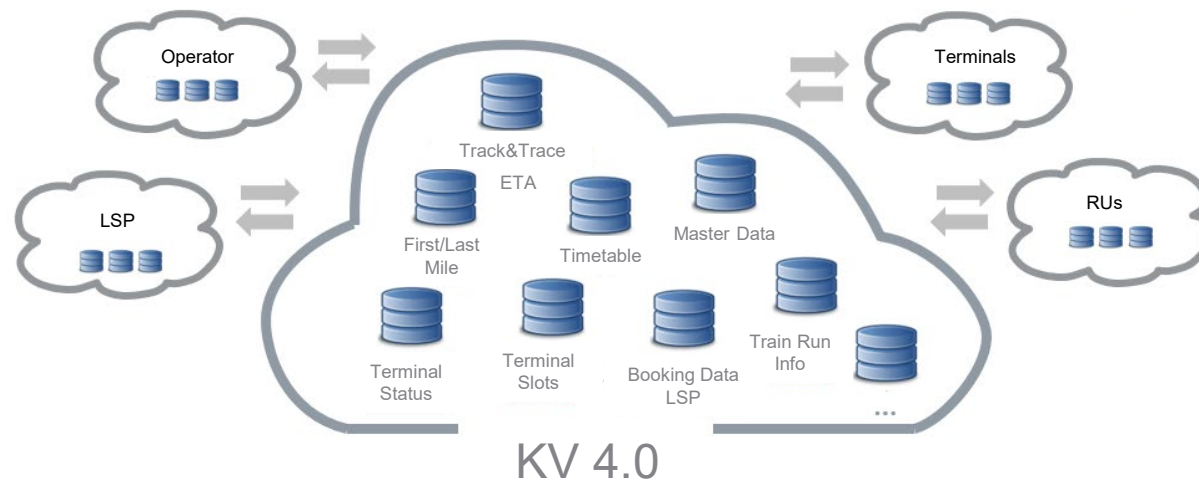


Data available and usable for all authorized parties involved

Supply chain transparency

KV4.0 Data Hub

- The **KV4.0 Data Hub is the result of the KV4.0 Project** implemented successfully in 2017-2020 and financed by German Ministry of Innovation
- The KV4.0 Data Hub is an **open integrated data hub** increasing transparency across the entire intermodal transport chain
- KV4.0 Data Hub is a **modern cloud-based solution**
- **DXI Company founded in 2022** with the objective to manage the KV4.0 Data Hub
- **All participating partners provides the relevant order and transport-related information (based on standard EDIGES format)**



KV4.0 Data Hub is the result of KV4.0 Project

KV4.0 Project Partners

Logistic
Service
Providers



Hoyer GmbH, Hamburg



Paneuropa GmbH, Vechta



Bertschi AG, Dürrenäsch

Intermodal
Operators



Kombiverkehr KG, Frankfurt



Hupac Intermodal SA, Chiasso

Railway
Undertakings



DB Cargo AG, Mainz



SBB Cargo International

SBB Cargo Deutschland GmbH, Duisburg



Lokomotion GmbH, München

Intermodal
Terminals



Kombi-Terminal
Ludwigshafen

STARK im
Kombinierten
Verkehr



Hupac SpA, Busto

Technical
Partner



KV4.0 Data Hub – Overall Concept



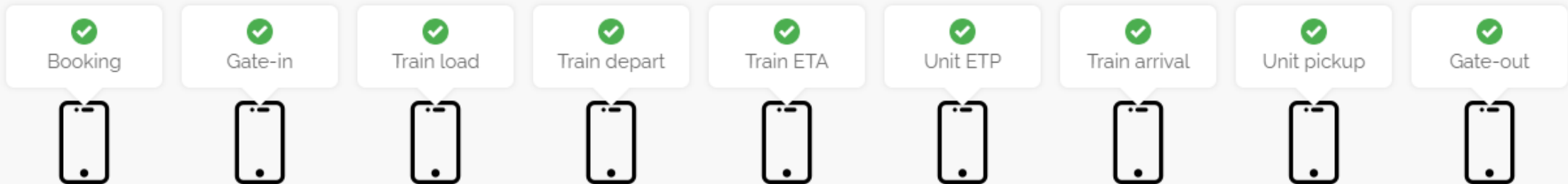
1. The **targeted stakeholders** for the hub are the Operators, Terminals, LSPs and Railway Undertakings
2. All **intermodal processes** are covered
3. All **EDIGES status messages** can be exchanged through the KV4.0 Data Hub

Standard intermodal process

Intermodal operator
Terminal to terminal or Door to door



Main EDIGES messages



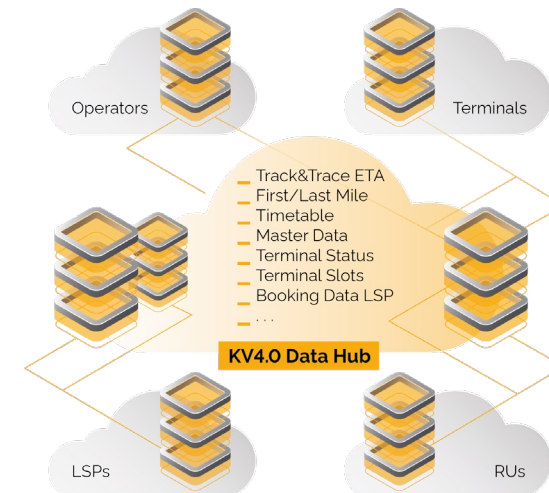
Main benefits for the stakeholders

Main Benefits

- Data **transparency** from the booking to the collection of the loading unit
- Transport units **booked through a single interface** for the LSP
- Optimized **forecast data** (ETA and ETP) in the event of irregularities
- Planning of the **terminal slots** is improved by the timely knowledge of planned shipment
- Improved **allocation of truck arrivals** and departures in the terminal
- Up-to-date **timetable** of all connected operators
- **KV4.0 Common Interface**: new developments to connect the **KV4.0 Data Hub to RNE TIS** and support **TAF-TSI** standard

Main Characteristics

- **Single point for direct access** to transport-relevant data of combined transport
- **Optimized data exchanges** costs thanks to a single interface
- Easy access via **standardized interfaces** with **EDIGES and TAF-TSI**
- Modern **cloud-based** solution



Current status of DXI activities

- Foundation of the **company DXI GmbH** (October 2022)
 - Shareholders: Hoyer, Hupac, Kombiverkehr, KTL, Lokomotion and Paneuropa
- Completion of the KV4.0 Data Hub **productive version** (February 2023)
- First **commercial use** (March 2023)
- Over **25 million messages** have been transiting through the hub
- Promoting the data hub to other players (LSP, RU, TE, OP)
- Currently **message types provided by the users**: commercial timetable, booking, ETP, ETA, train running, terminal status, terminal master data, DB Netz network disruption
- Connection of **further message from the users ongoing** (e.g. operational timetable)



How to get connected to KV4.0 Data Hub



Interested to get connected?

Contacts

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www.dx-intermodal.com

EPCA INTERMODAL WORKSHOP

INFRASTRUCTURE CAPACITY AND MODAL SHIFT FACILITATION

Ralf-Charley SCHULTZE
Director General

Brussels, 18 February 2025

UIRR: the Community of European Intermodal Freight Transport



PARTNERS

MOU PEERS



UIRR OPERATORS

UIRR TERMINALS



INDUSTRY ASSOCIATION PEERS

GOVERNMENTAL BODIES



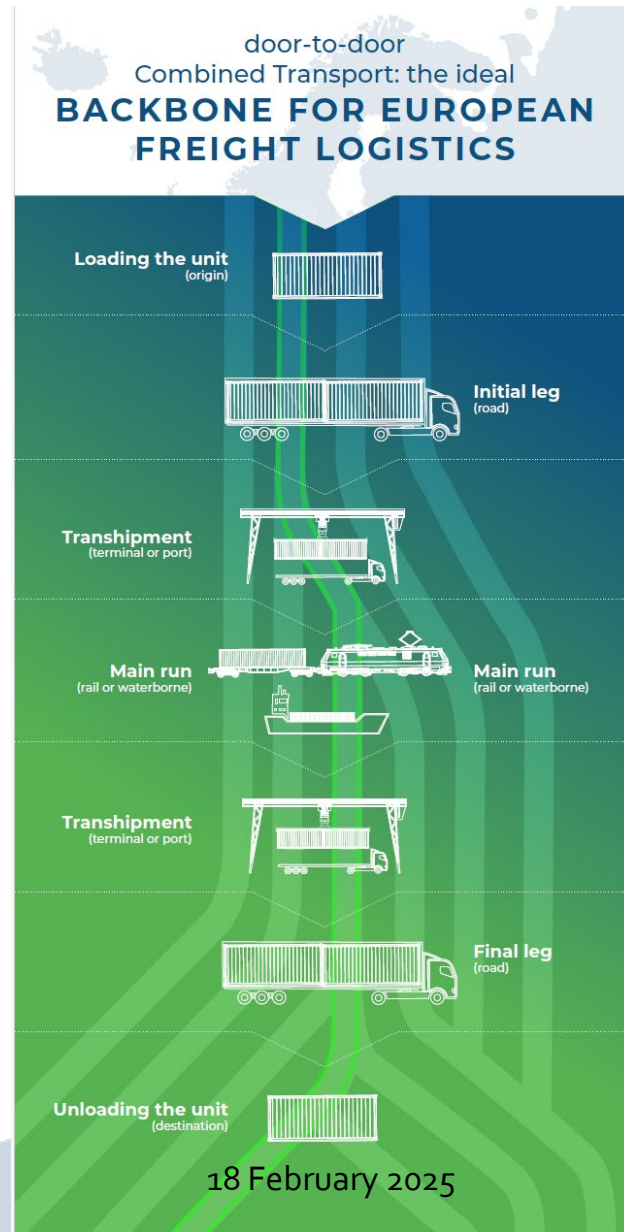


Baseline: the “backbone of land freight transport over 300km”



THREE QUESTIONS:

1. How does Combined Transport compare to unimodal trucking if performing in the capacity of “backbone of land freight transport over distances of 300km”?
– *efficiency + productivity performance*
2. How much modal shift would be needed until 2050 to qualify Combined Transport as “the backbone”?
– *1000 billion tonne kilometres*
3. Are the preconditions of Combined Transport to becoming “the backbone” realistic and affordable?





The Efficiencies of Combined Transport: a study done for UIRR



ENERGY / IMPORTED FOSSIL FUEL DEPENDENCY

Door-to-door Combined Transport uses **70% fewer kilowatt-hours of energy to produce a tonne-kilometre of transport performance** compared to the unimodal long-distance trucking alternative.

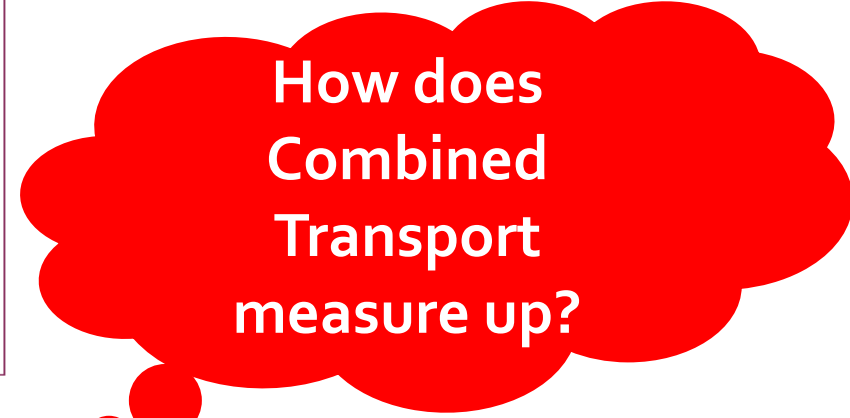
The energy used by Combined Transport is dominantly grid-electric, which means a **direct supply from Europe's increasingly carbon-neutral power generation**, thereby reducing the continent's dependence on imported fossil fuels.



INFRASTRUCTURE

The infrastructure of non-road means of transport is more suited to accommodate the heavy axles required by efficient freight transport than road.

The **per tonne-kilometre infrastructure degradation of door-to-door Combined Transport is thus a fraction of that of its unimodal road alternative**. Slower road degradation means less frequent road-works resulting in reduced disruptions and works-related congestion.



EFFICIENCY AND COMPETITIVENESS



LABOUR PRODUCTIVITY, WORK/LIFE BALANCE

The number of **tonne-kilometres produced per worker employed in a door-to-door Combined Transport operation is multiple times higher** than that of workers active in the unimodal trucking alternative. At the same time, Combined Transport jobs offer a **superior work/life balance** to the workers, especially in comparison to truck drivers, promising to alleviate the looming truck driver shortage.



SAFETY: ACCIDENTS AND CONGESTION

More Combined Transport not only slows road degradation, but also contributes to a dramatic reduction in accidents due to the superior safety performance of non-road modes. This has a further **positive impact on the frequency and extent of road congestions** thus reducing the external costs of freight transport.



CLIMATE AND THE ENVIRONMENT

The harmful emissions of door-to-door Combined Transport, such as **PM10, PM2,5, NOx and ozone**, are a **fraction of those produced by unimodal trucking**. The greenhouse gas emissions of Combined Transport are up to **90% lower than that of the unimodal trucking alternative**. Zero-carbon door-to-door Combined Transport has been demonstrated to be viable with products and technologies already on the market today, making it **the most cost-effective solution for Europe**.

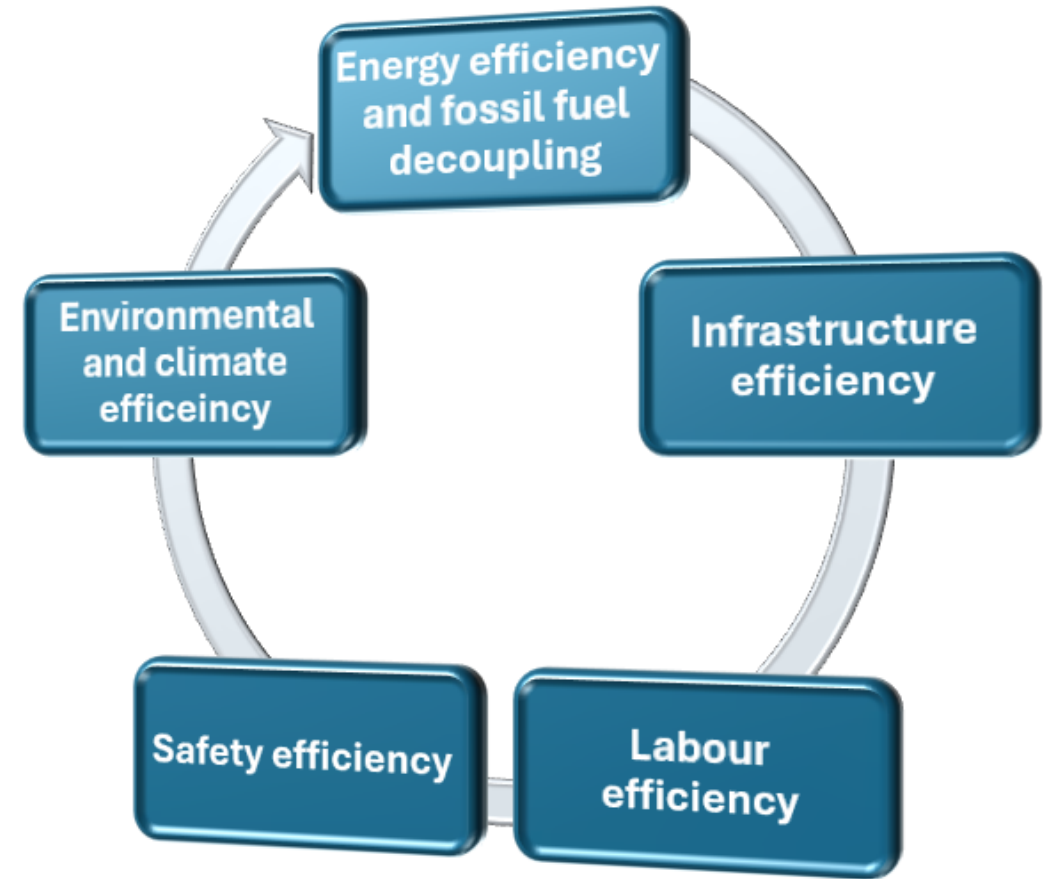


The results in numbers: exceptional performance



Combined transport – compared to unimodal truck transport – can deliver meaningful results in every examined dimension:

- **70% better energy efficiency**
- **Up to 50% road infrastructure maintenance expense saving**
- **60% better labour productivity and improved work/life balance**
- **95% fewer accidents per tonne-kilometres**
- **Up to 84% fewer air pollutant and greenhouse gas emissions**
- **50% reduction of road congestion related to maintenance works and accidents**





What does this mean for the European economy in monetary terms?



ANNUAL SAVINGS FROM 2050

- ✓ 70% better energy efficiency = **€70 billion**
- ✓ 50% road infrastructure maintenance expense reduction = **€20 billion**
- ✓ 60% better labour productivity + improved work/life balance = **€47 billion**
- ✓ 95% fewer accidents per tonne-kilometres = **€70 billion**
- ✓ Up to 90% fewer air pollutant and greenhouse gas emissions = **€17 billion**
- ✓ 50% estimated reduction of road congestion = **€90 billion**



The annual contribution to the public budgets and to European economic actors would amount to **€314 billion**, which is equal to **€222 billion** net of present day internalisation charges (paid through taxes and charges).



Infrastructure capacity / bottlenecks: more and better-quality train paths for freight



	TEN-T Guidelines Regulation	New Rail Infrastructure Capacity Management Regulation*	Combined Transport Directive revision (COM proposal)*
Short run	Key Performance Indexes for (i) cross-border freight train punctuality and for (ii) railway border crossing procedure for internal EU borders	New rules for train path allocation during annual timetabling and when circumventing TCRs (bottlenecks) characterised by: <ul style="list-style-type: none"> - <i>European framework</i> (which is to prevail over <i>strategic guidance</i> of the Member States) - Socio-economic and environmental cost-benefit criteria as a decision support tool 	Broader and enhanced definition of <i>combined transport operation</i> to include domestic operations and should enable terminal competition (within 150km range). Studies by Member States should declare the short-, medium- and long-term modal shift objectives, which should be achieved through: <ul style="list-style-type: none"> - EU-wide benefits - MS-specific state aid regime, which is commensurate to the objectives
Long run	Upgrades of existing intermodal terminals, including road and rail last mile access, and construction of missing terminals (national study and action-plan, harmonised technical parameters and functionality) Rail infrastructure upgrades to harmonised technical parameters: 22,5t axle load, 740m train length, 4m loading gauge, electrification		

* Legislation not yet complete – proposed changes yet to be achieved

UIRR vision: The existing railway infrastructure is sufficient to provide the capacity and the quality of service required by the additional freight trains that can deliver the envisioned modal shift.



Shippers and consignors should implement philosophical changes



- ✓ **Critical Mass** to be achieved by entrusting all regular cargo flows to Combined Transport
 - **Increased frequency** -> improved reliability and journey speed -> reduces working capital need
 - **Regular trains** -> better, routine handling by both traffic managers and traction service providers -> better punctuality
 - **Routine reception at terminals** -> emergence of dedicated CT road-leg hauliers -> improved positioning of consignments

- ✓ **Mixed cargo to Combined Transport:** not only heavy (high density) but also light (low density) cargo
 - **740m long trains** can not be filled by exclusively heavy consignments (-> longer trains reduce costs and thus lower prices)
 - **Mixed cargo within the intermodal loading unit** -> high- and low-density cargo can enable optimal loading room utilisation



Limited investments targeted to freight needs



- ✓ **TEN-T railway infrastructure** on selected lines and with a focus on technical parameters for freight
 - **Train length and axle load** -> 740m long trains and 22,5t axles
 - **4m loading gauge** -> needed for the carriage of semi-trailers in regular pocket wagons
 - **Electrification** -> both main lines and last mile rail connections to/from terminals

- ✓ **Intermodal assets** such as rolling stock, loading units, terminals and digitalisation
 - **Various types of intermodal wagons**
 - **Intermodal loading units** -> high- and low-density cargo can enable optimal loading room utilisation
 - **Terminals** -> upgrades to existing terminals and the construction of new terminals with state aid
 - **Digitalisation** -> both operators and terminals -> enhanced transparency, traceability of intermodal consignments and direct communication with customers



Modal shift of 1000bn tkm: what are the preconditions?

No need for unaffordable public or private investments

- The estimated annual public investment need into the TEN-T transport infrastructure is about **€15 billion**.
- The estimated annual private investment into intermodal assets like terminals, rolling stock and digitalisation amounts to **€1,5 billion**.

Philosophical changes to freight transport choices

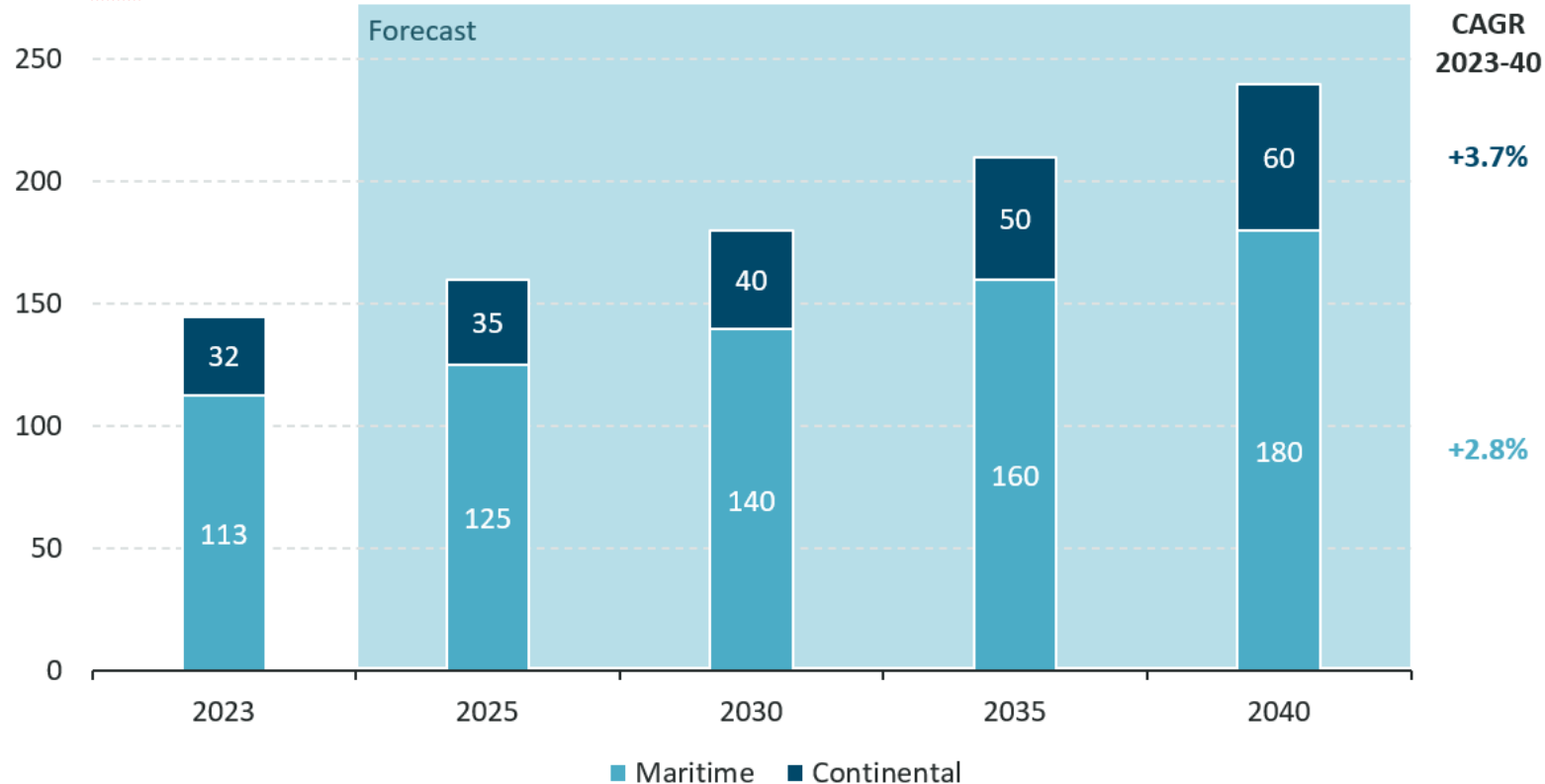
- **Critical mass**: regular cargo flows should be carried by Combined Transport (non-road modes), while unimodal trucking should only carry the irregular, last minute shipments.
- **Mixed cargo**: heavy (high density) and light (**low density**) cargo should both be entrusted to Combined Transport as this will be needed to fill 740m long trains.

Legislative and regulatory steps

- Adoption of the **new Rail Infrastructure Capacity Management Regulation** with the right content to ensure that cross-border intermodal freight trains are granted **more and better quality train paths**, as well as that the **hierarchy of these trains is elevated** in the eye of rail traffic managers.
- Revision of the **Combined Transport Directive** with a **broader, enhanced definition** of a *combined transport operation*, and the required compensatory and promotional **state aid measures**
- The correct and timely implementation of the **TEN-T Guidelines Regulation**.
- **Standardisation and digitalisation** in the field of railway transport would need to be advanced throughout Europe. The correct and timely implementation of the **Electronic Freight Transport Information Regulation** and the **TSI Telematics** are needed.

The market for Combined Transport by rail is forecast to grow by 3% p.a. until 2040

Development of unaccompanied CT rail transport performance by transportation type
(billion tkm)



- SCI Verkehr expects further growth of unaccompanied Combined Transport by rail until 2040. **In 2040, the market will be around two thirds bigger than in 2023.**
- With a compound annual growth rate of 3.7% between 2023 and 2040, **continental transport should grow at a higher rate than the overall market** and almost double by 2040. This development should be mainly driven by the currently planned and further expected expansion of the continental network, especially in markets like Spain, France and Poland. In 2040, continental transport's share of the Combined Transport market will be 25% compared to 22% in 2023.



THANK YOU
For your attention



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Workshop: Integrate learnings



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