



20th Transport Sector Coordinating Committee Meeting

24–25 May 2023 • Tbilisi, Georgia

20-е заседание Координационного комитета по транспортному сектору

24–25 мая 2023 года • Тбилиси, Грузия



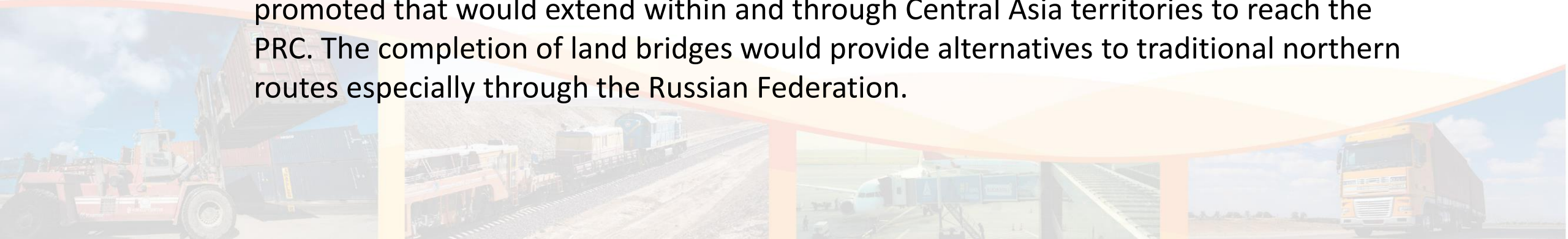
Focus on the Middle Corridor

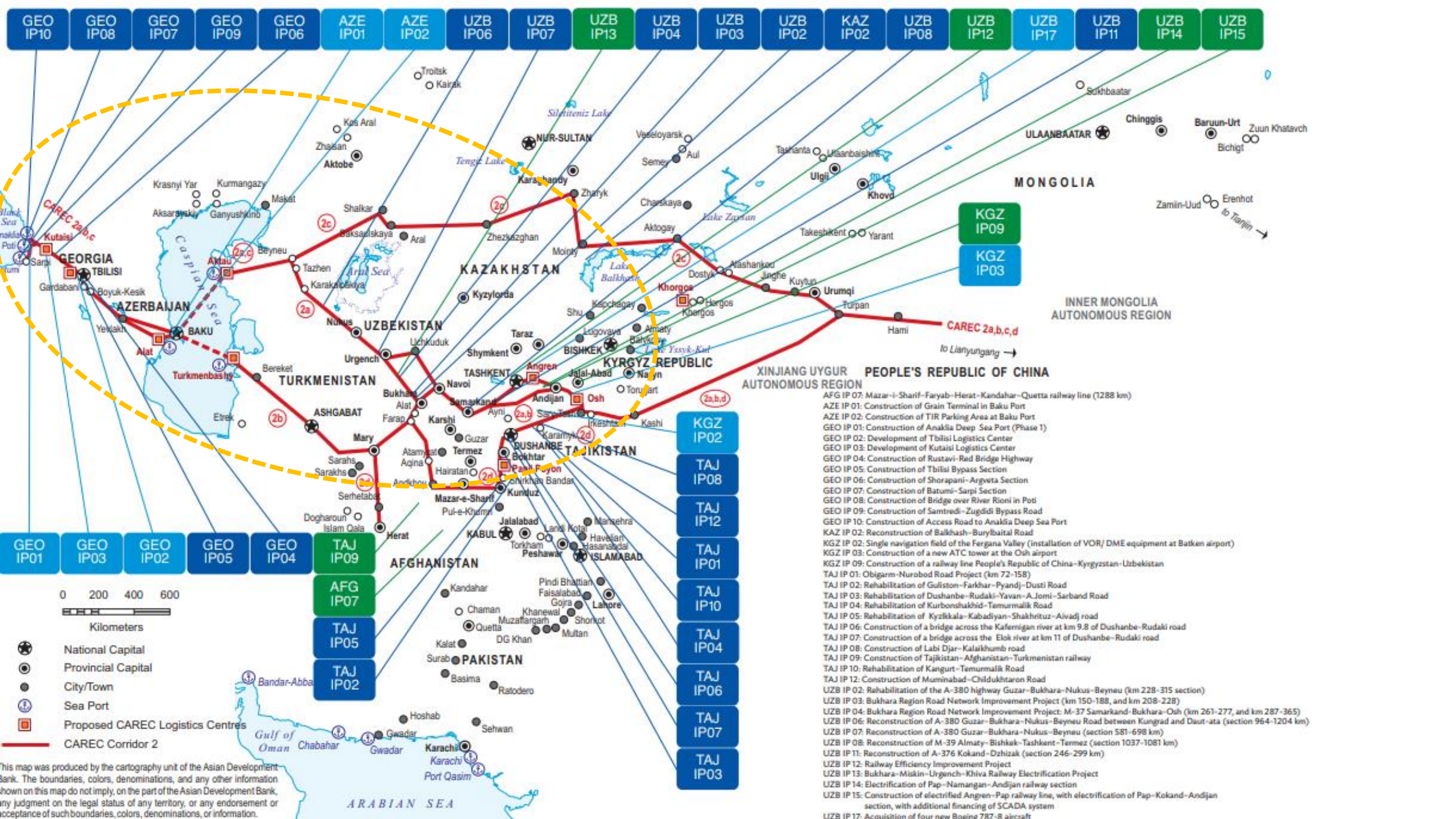
Adrian Sammons
Technical Consultant
Senior Transport Economist



RECAP OF MIDDLE CORRIDOR

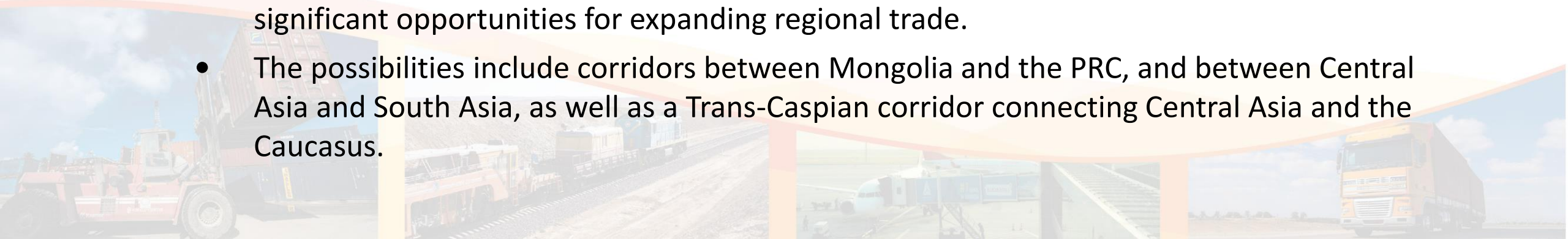
- 1996 - Central Asian Assistance Plan
 - Improvements to intermodal connections between the Uzbek and the PRC rail systems across the Kyrgyz Republic would reduce the cost of shipping goods to South or East Asia from Central Asia and vice versa. Caspian ports mentioned.
 - Reconstruction of several sections of the east-west highway linking Tashkent with Almaty is needed. This would benefit links to Termiz in the southwest, and to the Kazakhstan-PRC border at Horgos and onward to Urumqi and PRC in the east.
 - The Transport Corridor Europe Caucasus Asia (TRACECA) program was providing grant financing of small-scale infrastructure and consultant studies
 - The concept of Land-Bridges as regional and intercontinental connections was promoted that would extend within and through Central Asia territories to reach the PRC. The completion of land bridges would provide alternatives to traditional northern routes especially through the Russian Federation.





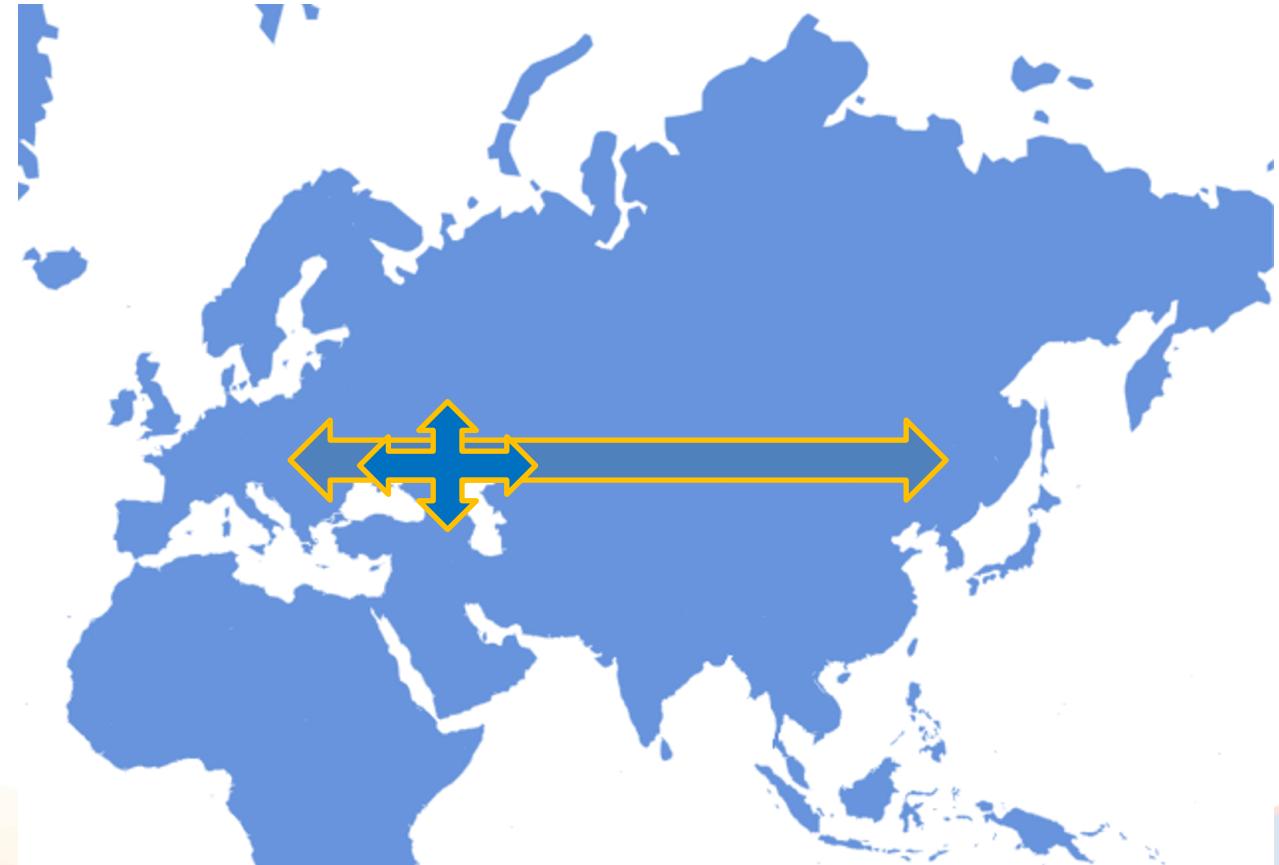
RECAP OF MIDDLE CORRIDOR

- 2023 – CAREC Transport Strategy 2030
 - CAREC transport corridors provide overland connectivity to deep-sea ports of Arabian Sea and Black Sea, providing landlocked countries access to overseas trade partners.
 - Connectivity improvements can be achieved at multimodal corridors via Caspian Sea.
 - Despite significant investments in seaports and shipping operations, multimodal logistics and transport operations in the region remain slow and costly.
 - Significant delays and additional costs are caused by limited interoperability between water transport and land transport operations, adverse weather, slow border crossing procedures, insufficient logistics facilities, and outdated technology.
 - The CAREC Program focuses on developing economic corridors that will provide significant opportunities for expanding regional trade.
 - The possibilities include corridors between Mongolia and the PRC, and between Central Asia and South Asia, as well as a Trans-Caspian corridor connecting Central Asia and the Caucasus.



CAREC MIDDLE CORRIDOR (2A-B-C-D)

- CAREC Middle Corridor provides transport / trade connectivity for;
 - South and East Asia to/from CAREC Countries
 - Europe and Western countries to/from CAREC Countries
 - Inter CAREC Countries
 - East Asia transit trade to/from Europe



CAREC MIDDLE CORRIDOR (2A-B-C-D)

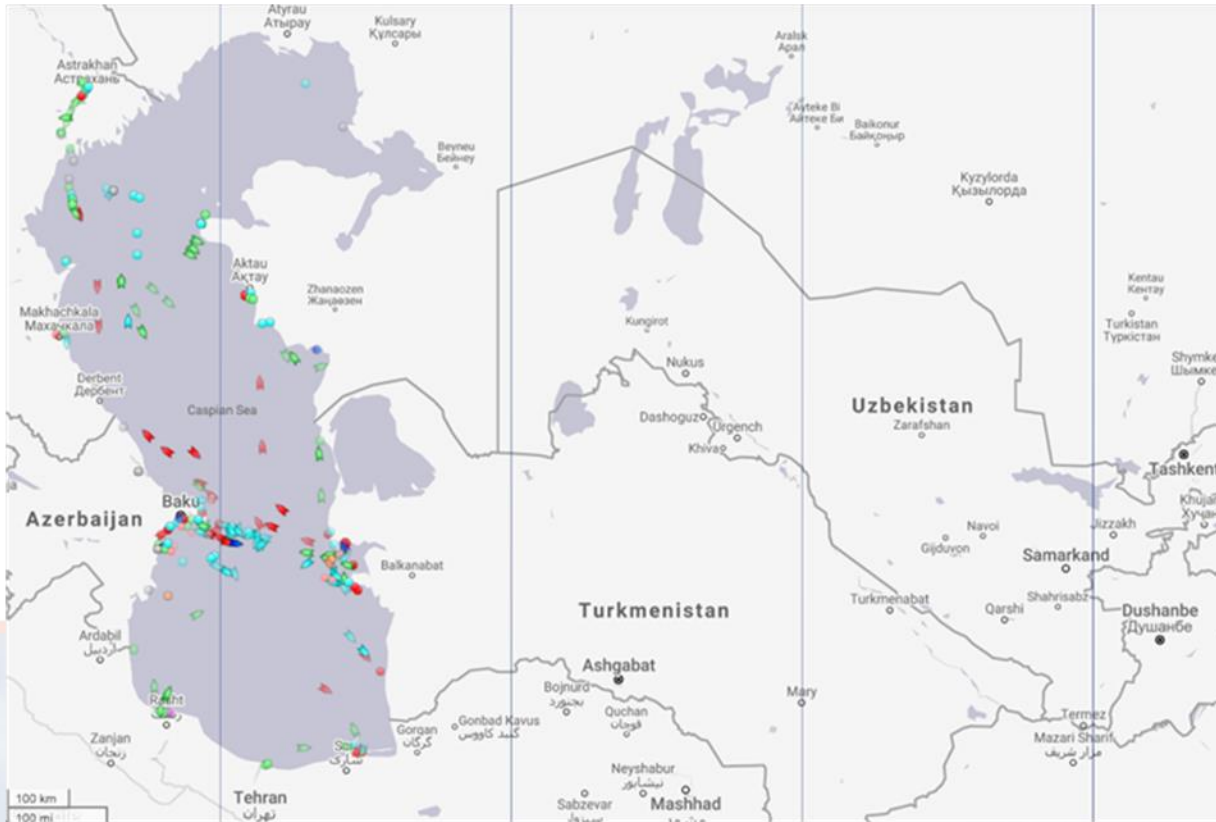
- Middle Corridor provides transit trade connectivity;
 - Altynkol / Dostyk - Aktau/Kuryk–Baku/Alat, Turmenbashi-Baku/Alat, Batumi/Poti – Constanta or Istanbul and reverse direction



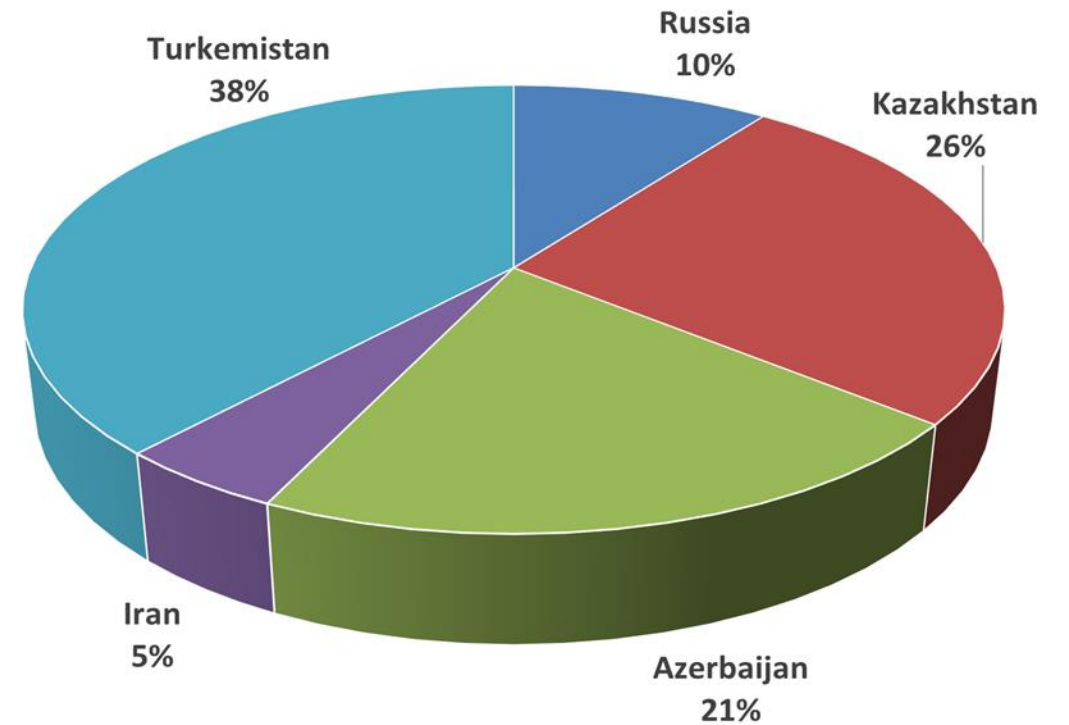
CAREC MIDDLE CORRIDOR – PORTS

CAREC Country	Landlocked	Sea port access	★Range to nearest sea ports (km)	Mode of access to nearest sea port
AFG	Yes	Nil	1,200 – 1,600	Road
AZE	Yes	Caspian	800	Rail – Road - Canal
GEO	No	Black Sea		
KAZ	Yes	Caspian	3,000	Road – Rail - Canal
KGZ	Yes	Nil	4,500 – 5,200	Rail – Road
MON	Yes	Nil	1,700 – 6,000	Rail – Road
PAK	No	Arabian Sea		
PRC	No	Pacific		
TAJ	Yes	Nil	1,500 – 2,500	Rail – Road
TKM	Yes	Caspian	1,600	Rail – Road - Canal
UZB	Yes	Nil	2,000 – 1,800	Rail – Road

CASPIAN TRADE SHIPPING

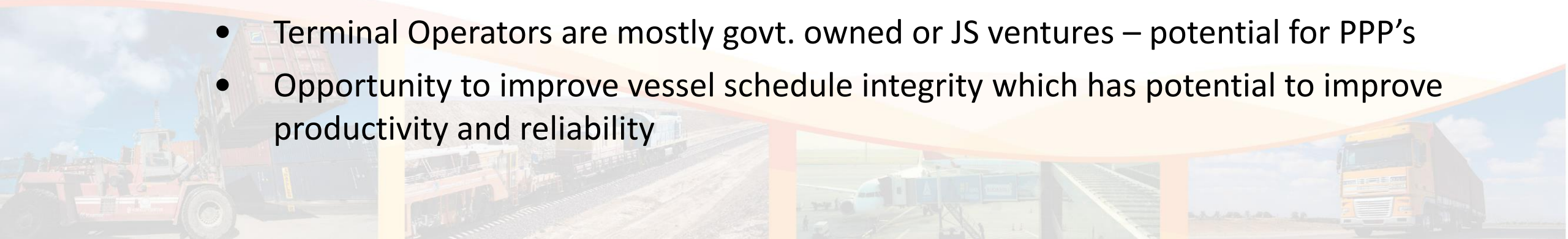


Cargo tonnage share in Caspian Sea ports 2019, by country

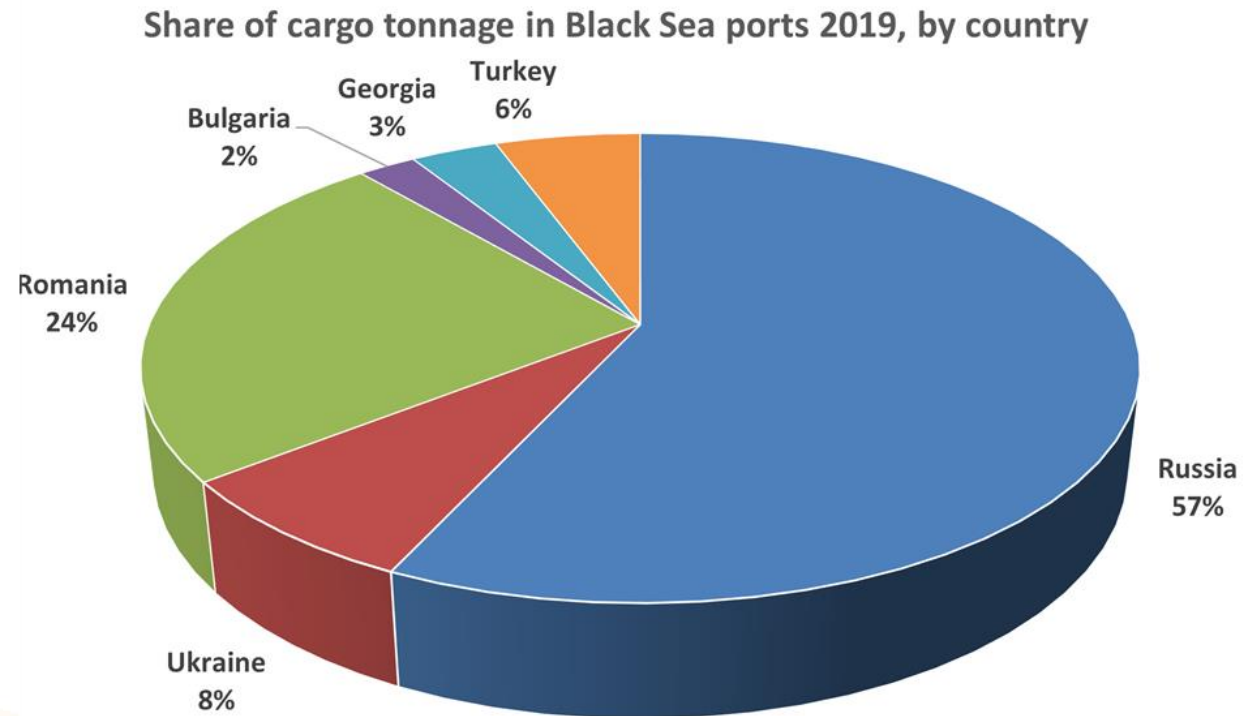
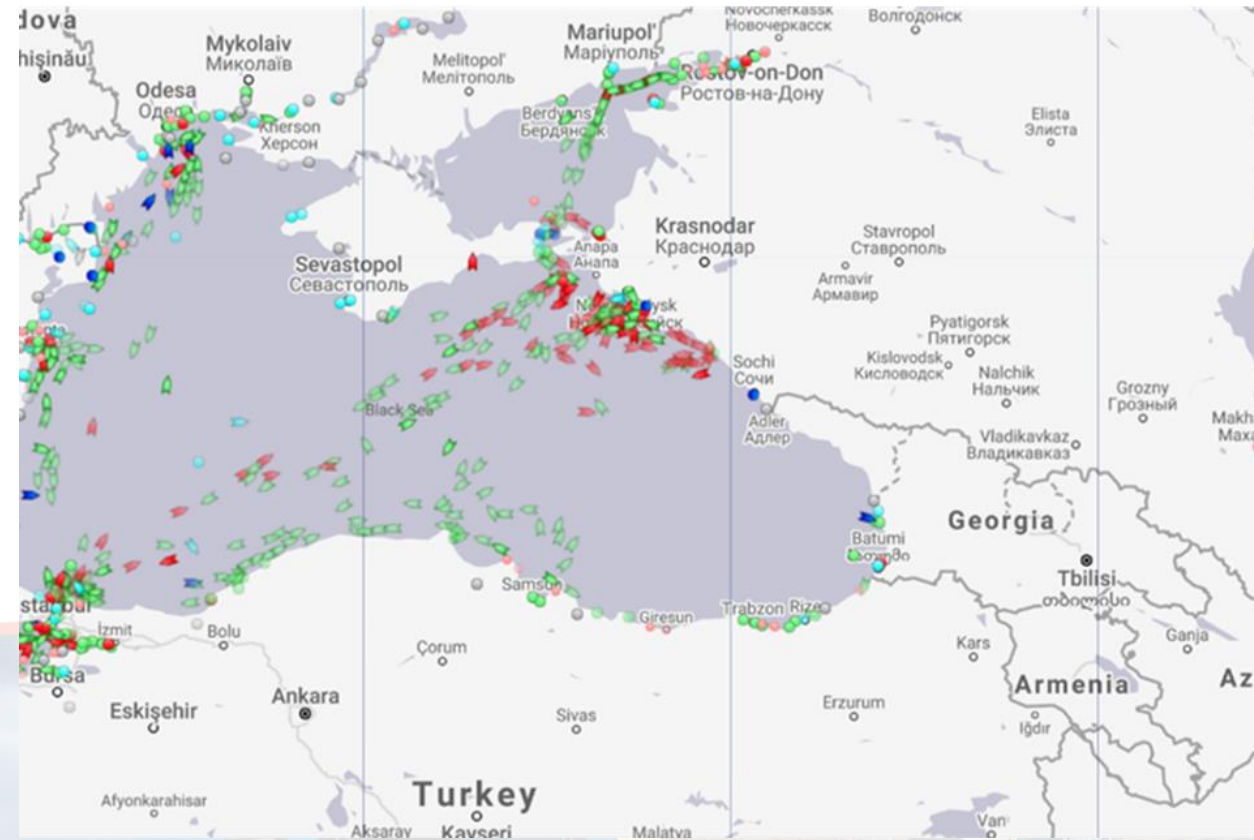


CASPIAN SEA TRANSPORT - FEATURES

- Much of the overland infrastructure is dedicated to rail networks that interface with rail ferries that transit the Caspian. There are vessels that operate as RoRo for trucks.
- Opportunity to modernize the traditional methods of freight handling which at some ports dominated by rail loading services with less emphasis upon truck and trailers
- Port relocation has occurred at some ports and urban encroachment and constraints is evident at older port sites
- Depth of voyage routes, port channels & berths dictates the Caspian maximum size vessels
- Terminal Operators are mostly govt. owned or JS ventures – potential for PPP's
- Opportunity to improve vessel schedule integrity which has potential to improve productivity and reliability

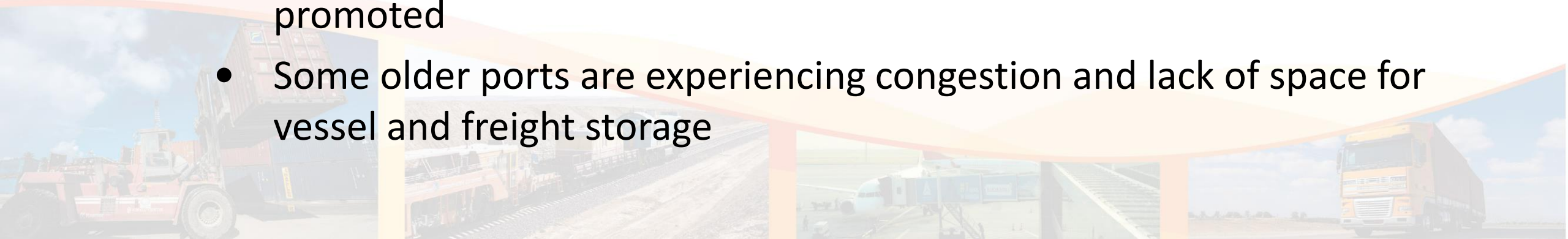


BLACK SEA SHIPPING



BLACK SEA TRANSPORT - FEATURES

- Competitive tensions exist between ports vying for market share of shipping line vessels
- Container terminals compete for feeder trades
- Bosphorus max vessels potentially limit operational productivity
- Terminals are mostly private concession operations involving multinationals
- Vessel schedules are fixed, and high productivity and reliability is promoted
- Some older ports are experiencing congestion and lack of space for vessel and freight storage



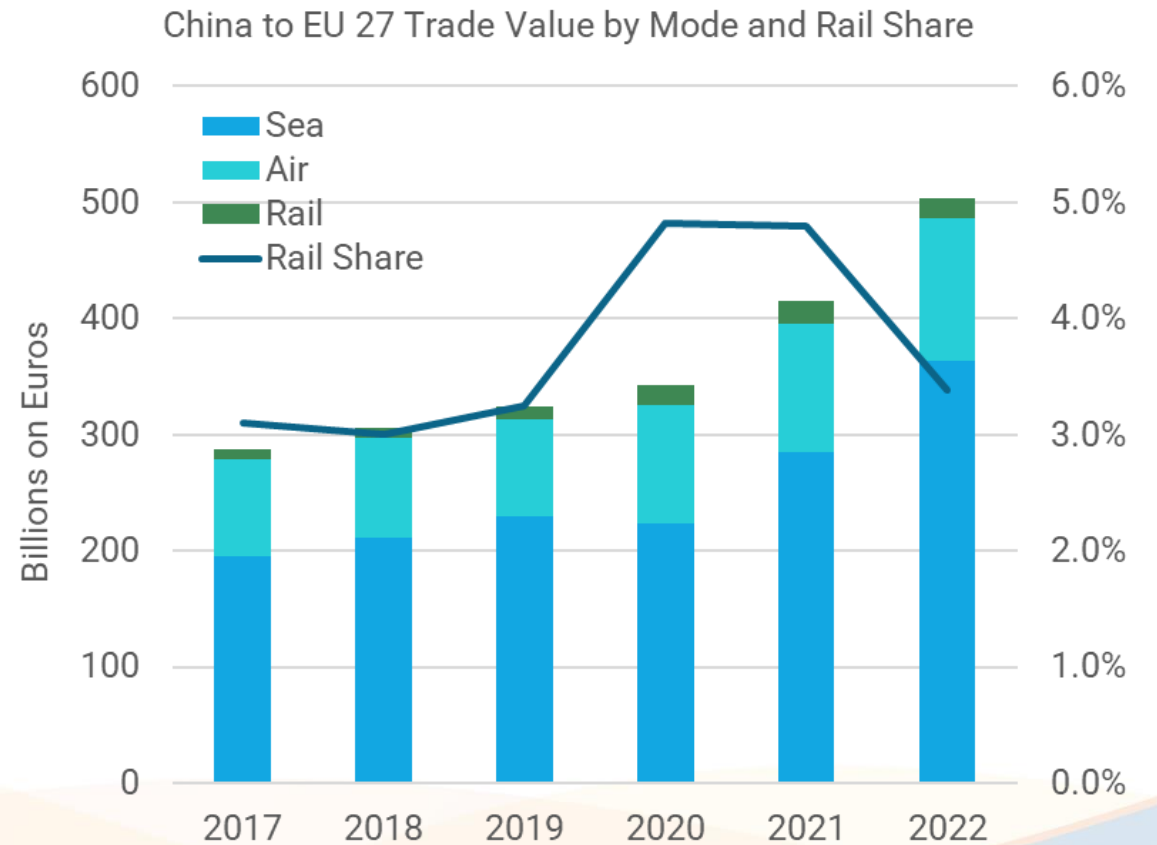
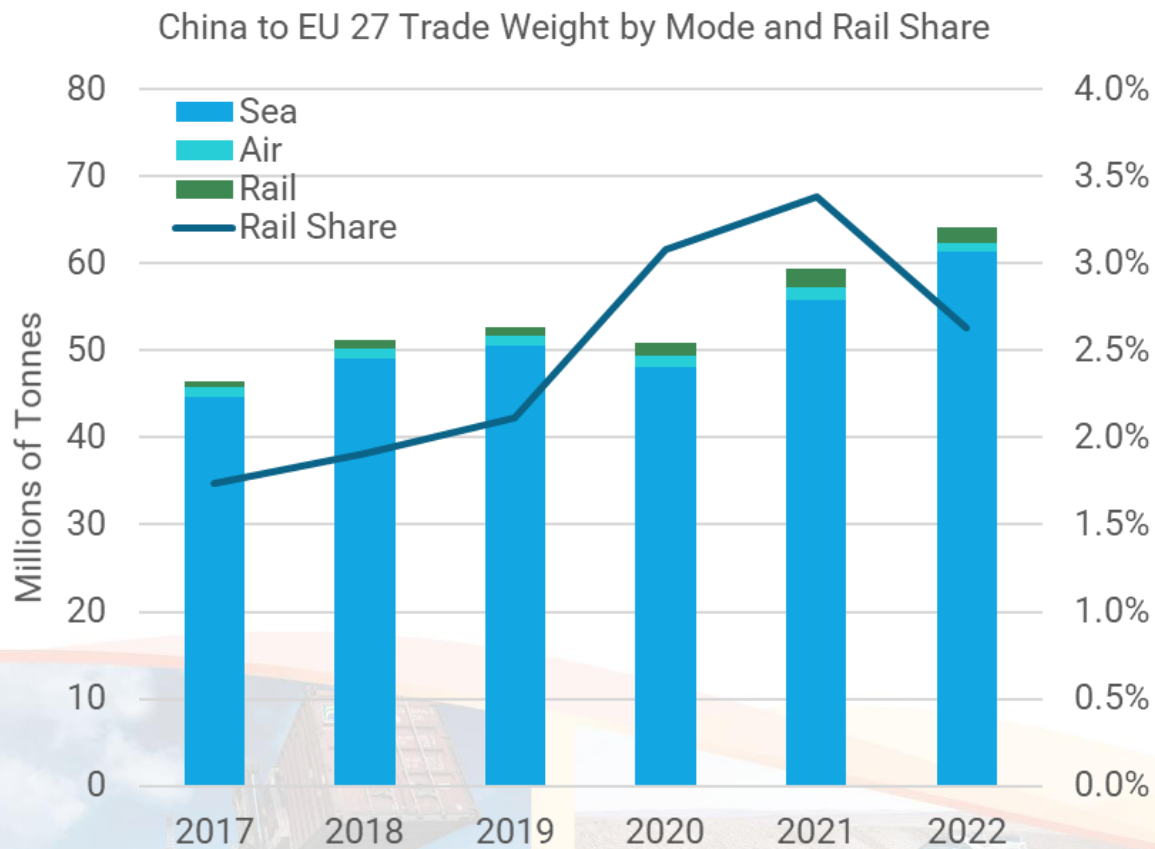


GLOBAL EVENTS

- Covid-19 in 2020-23 and Russian invasion of Ukraine in 2022 combined to strangle supply chains from PRC to Europe.
- These events influenced unprecedented levels of price increases and capacity reductions imposed by global shipping lines.
- These adjustments were rapid and created conditions that channeled an opportunity for other modes of transport to capitalize on the lack of available shipping space from seaports in PRC.
- The beneficiary's included existing overland multi-modal routes with the Middle Corridor emerging as a contestable solution especially given the sanctions imposed on rail via Belarus and the Russia routes to Europe.
- This scenario offered an opportunity for the Middle Corridor to provide additional capacity via the Middle Corridor for transcontinental transport.

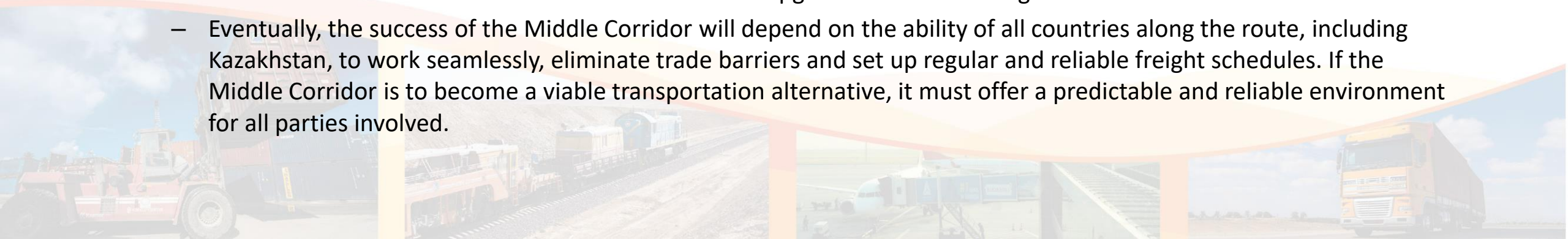


PRC TO EUROPE – MODAL SHARE



NEW STUDIES – MIDDLE CORRIDOR

- The European Bank for Reconstruction and Development (EBRD) is conducting a study on sustainable transport connections between Central Asia and Europe, Completed by Mid 2023.
- Objective: Identify most sustainable transport corridors connecting the five Central Asian countries with the European Union's TEN-T, including the Caucasus, and to propose actions for their development, including actual infrastructure investments and enabling environment
- Initial Findings:
 - The Middle or Trans-Caspian Corridor through Kazakhstan is generally considered the second-best overland option.
 - Should this corridor become the preferred new route for freight companies, existing Caspian Sea infrastructure may become a real bottleneck.
 - A diversion of transit cargo exceeding 10 per cent of the Northern Corridor's tonnage will require large investment across the entire corridor and its economic efficiency is yet to be assessed. The EBRD estimates immediate investment needs for Middle Corridor infrastructure upgrades to be in the region of €3.5 billion.
 - Eventually, the success of the Middle Corridor will depend on the ability of all countries along the route, including Kazakhstan, to work seamlessly, eliminate trade barriers and set up regular and reliable freight schedules. If the Middle Corridor is to become a viable transportation alternative, it must offer a predictable and reliable environment for all parties involved.

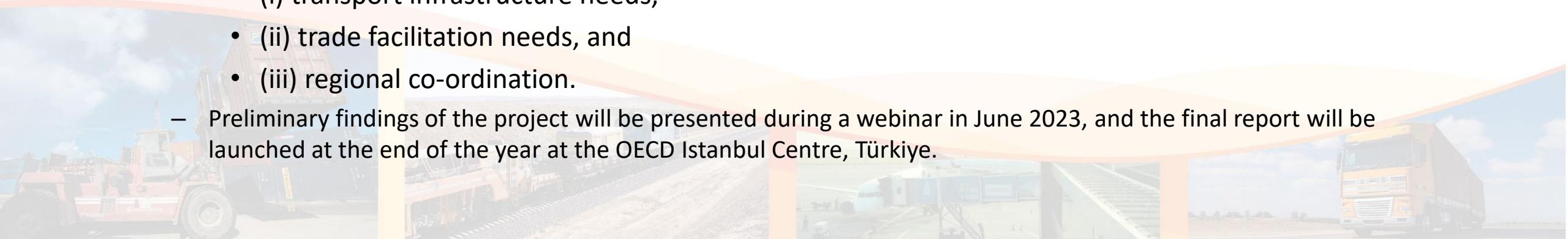


NEW STUDIES – MIDDLE CORRIDOR

- The International Transport Forum / OECD undertook a Transport Policy Response study to the War in Ukraine, No. 2 - Transport Connectivity in Central Asia: Are New Trade Corridors between Europe and Asia Feasible? – findings released Oct 2022
- Finding highlights:
 - More and more freight between Europe and Asia is transported by rail. Twice as many routes connect PRC and Europe today as was the case five years ago.
 - The Ukraine war has disrupted transit on the Northern Corridor. The Middle Corridor via Central Asia and the Caucasus is the most feasible alternative.
 - A shift of freight flows from the Northern to the Middle Corridor would enhance the dominance of rail transport in Central Asia.
 - To offer competitive lead times, reliability and transit costs, the Middle Corridor needs enhanced capacity, better technology and optimized operations.
 - Such improvements would make the Middle Corridor 35% faster and 40% cheaper than the Northern Corridor, creating an attractive alternative.
 - Regional policy dialogue and co-operation are prerequisites to preserve and further develop a resilient and integrated transport network in Central Asia..

NEW STUDIES – MIDDLE CORRIDOR

- OECD Eurasia Competitiveness Programme and OECD Istanbul Centre launched an analytical study on the potential of the Trans-Caspian International Transport Route, “Middle Corridor”, to become the main alternative trade route to the Northern Corridor (via Russia) between PRC-EU
- Methodology will be to undertake a series of stakeholder surveys - OECD Survey for Individual Companies : Middle-Corridor Use and Potential
- Objectives:
 - The project will map the potential and the challenges along the route to transform it into a central trade corridor connecting PRC to EU, and covers Kazakhstan, Georgia, Azerbaijan and Türkiye, the 4 main countries of the route.
 - The Survey is an integral part of the analysis and is aimed at collecting the point of view of the private sector actors involved in the route to understand the bottlenecks and map reform and implementation priorities on three key dimensions:
 - (i) transport infrastructure needs,
 - (ii) trade facilitation needs, and
 - (iii) regional co-ordination.
 - Preliminary findings of the project will be presented during a webinar in June 2023, and the final report will be launched at the end of the year at the OECD Istanbul Centre, Türkiye.

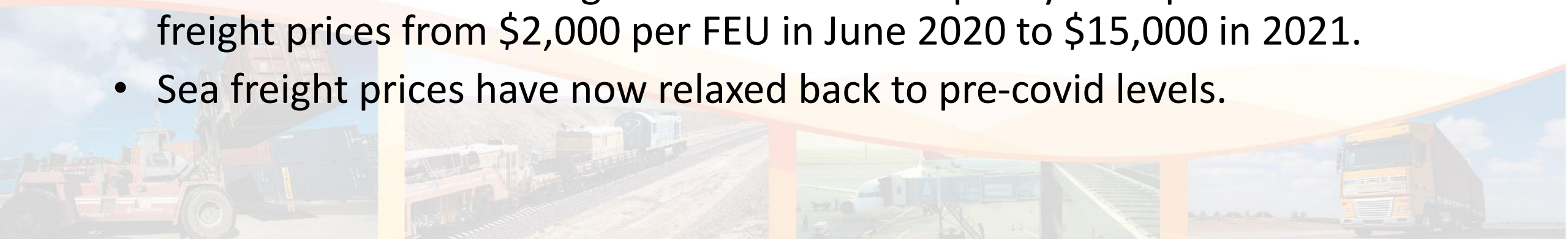


NEW STUDIES – MIDDLE CORRIDOR

- Other studies - Institute for Development and Diplomacy - Geopolitical Change and the Re-Emergence of the Middle Corridor Oct 2022
- Findings:
 - What makes the Middle Corridor most attractive for Western countries is its safe accessibility, since it is not subject to any international limitations compared to other routes traversing other sets of countries.
 - bilateral relations between Azerbaijan-Kazakhstan and Azerbaijan-Türkiye, which have both risen to the level of strategic partnerships, add even more value to the Middle Corridor whilst increasing the chances of economic benefits for all involved parties, including the European Union and PRC.
 - Additional investment in infrastructure projects is not the only challenge that hinders the efficiency of the Middle Corridor, as there are certain problems on the Central Asian part of the route, namely the lack of efficient customs control on the Kazakhstan PRC border.
 - absence of a deep-water port on the Black Sea and suboptimal railway connections in Georgia also represent two other major infrastructure challenges for the transit corridor
 - the Middle Corridor project still have some work to
 - resolve all issues with hard infrastructure capabilities. Lastly, some international partners and investors have voiced their concerns regarding the lack of common customs and regulatory procedures among the TITR countries for transit cargo. Therefore, harmonizing and simplifying customs procedures will be needed to make the route more attractive for new partners.

CAREC MIDDLE CORRIDOR – OPPORTUNITY

- The surge to switch to overland rail during 2020-21 saw renewed use of rail from PRC to Europe for all Corridors.
- Russian invasion of Ukraine in early 2022 resulted in the closure of Ukraine seaports and many shippers avoid using the northern rail corridor through the Russian Federation. This left the Middle Corridor as a remaining alternative to satisfy the surge in freight volume.
- The volume of goods carried on rail from PRC to Europe ballooned from 14 million metric tons in 2019, to 26 million metric tons in 2021.
- Demand for rail resulting from the limited capacity and spike in sea freight prices from \$2,000 per FEU in June 2020 to \$15,000 in 2021.
- Sea freight prices have now relaxed back to pre-covid levels.

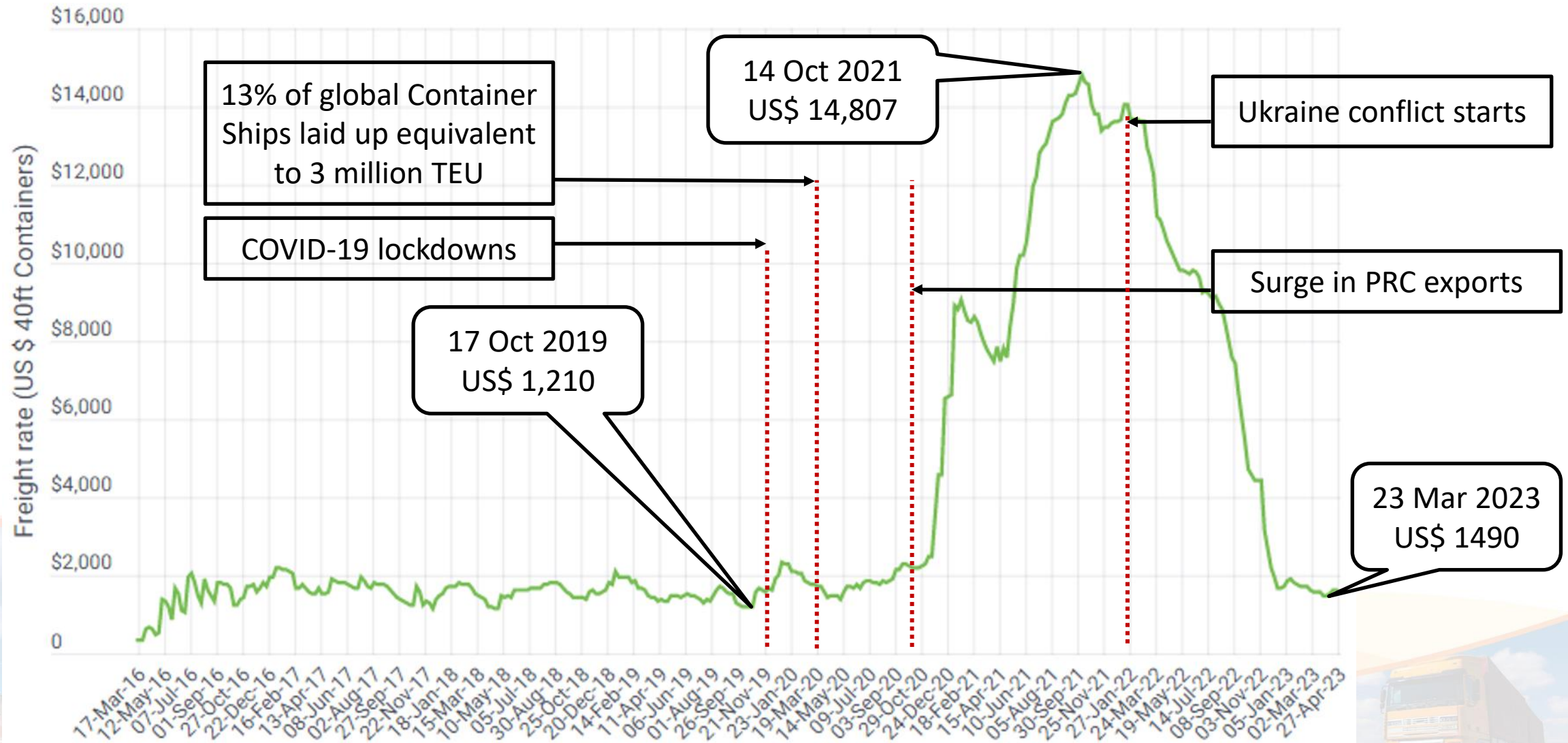


PRC TO EUROPE – FREIGHT PRICING / ROUTE

FCL-FCL	FROM CHINA to EU - FORTY FOOT CONTAINER (FEU)	Volume handled 2019 est.	2018-2019	2020-2021	2022-2023	Volume handled 2022 est.
MODE / Days	ROUTE		USD/FEU	USD/FEU	USD/FEU	
SEA 35-45 days	Main seaports to West EU Ports container routes. Tianjin Port/Qingdao Port/Shanghai Port/Ningbo Port. To; Piraeus Port/Rotterdam Port/Port of Hamburg/Antwerp Port	24.8m TEU	\$1,500 low \$3,200 high	\$9,000 low \$15,000 high	\$1,490 low \$14,000 high	26.4m TEU*
RAIL 14-16 days	Northern rail corridor (PRC, RUS, EU) Tianjin–Manzhouli–Trans-Siberian Railway–Moscow. To; Duisburg or other EU Main terminal.	400k TEU	\$5,000 low \$7,387 high	\$6,500 low \$9,000 high	\$ N/A \$ N/A	-
CR Express 13-15 days	From Xi’an to Hamburg (through Horgos or Alataw Pass)	1.49m TEU	\$2,000 low \$3,000 high	\$ 8,000 low \$12,000 high	\$7,000 low \$10,000 high	1.6m TEU#
RAIL/FERRY 21-24 days	Middle Multimodal corridor (PRC, KAZ, Caspian Sea, AZE, GEO, EU). Lianyungang (China) to West EU Terminals	40k TEU	\$6,000 low \$8,000 high	\$7,000 low \$10,000 high	\$ 6,900 low \$12,000 high	80k TEU^

*UNCTAD Review of Maritime Transport 2022. #PRC Railway Group 2023. ^EBRD 2022

PRC TO EUROPE FEU INDEX MAR 2016 – APR 2023



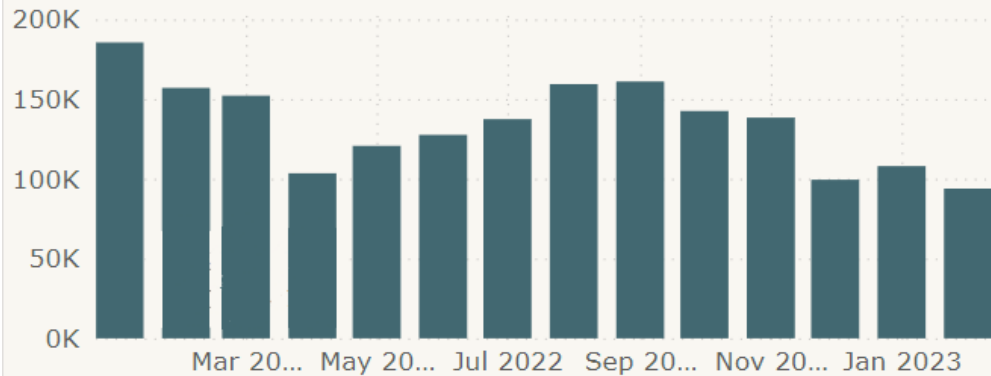
PRC TO EUROPE – RAIL V SEA 2022+YTD 23 TONNES

EU 27 Imports from China by Rail and Sea Jan 2022 - Feb 2023

In Tonnes

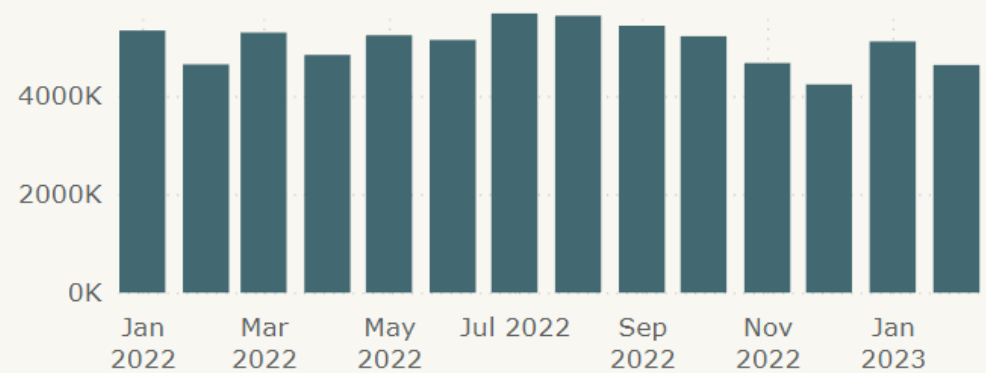
Rail

● Imports



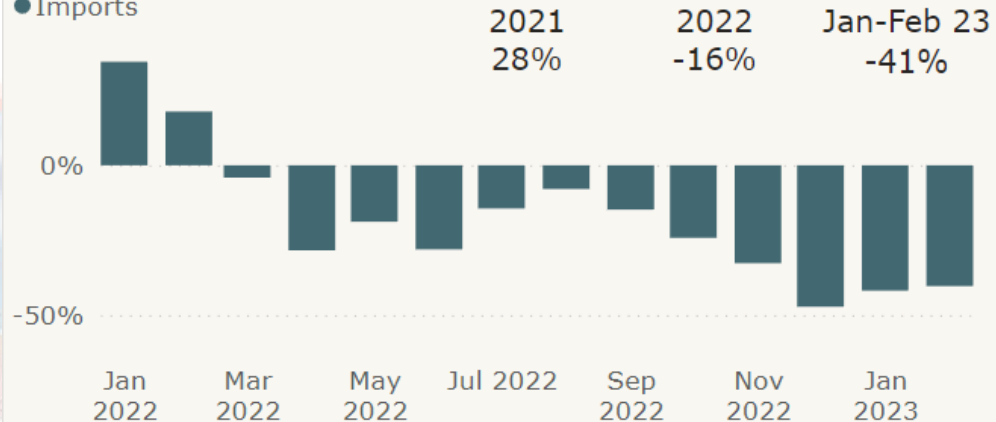
Ocean

● Imports



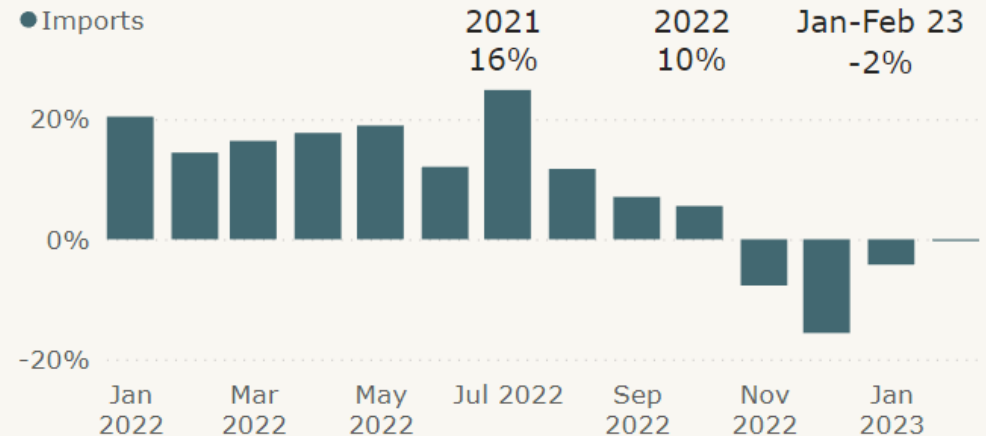
Year on Year Growth by Month

● Imports



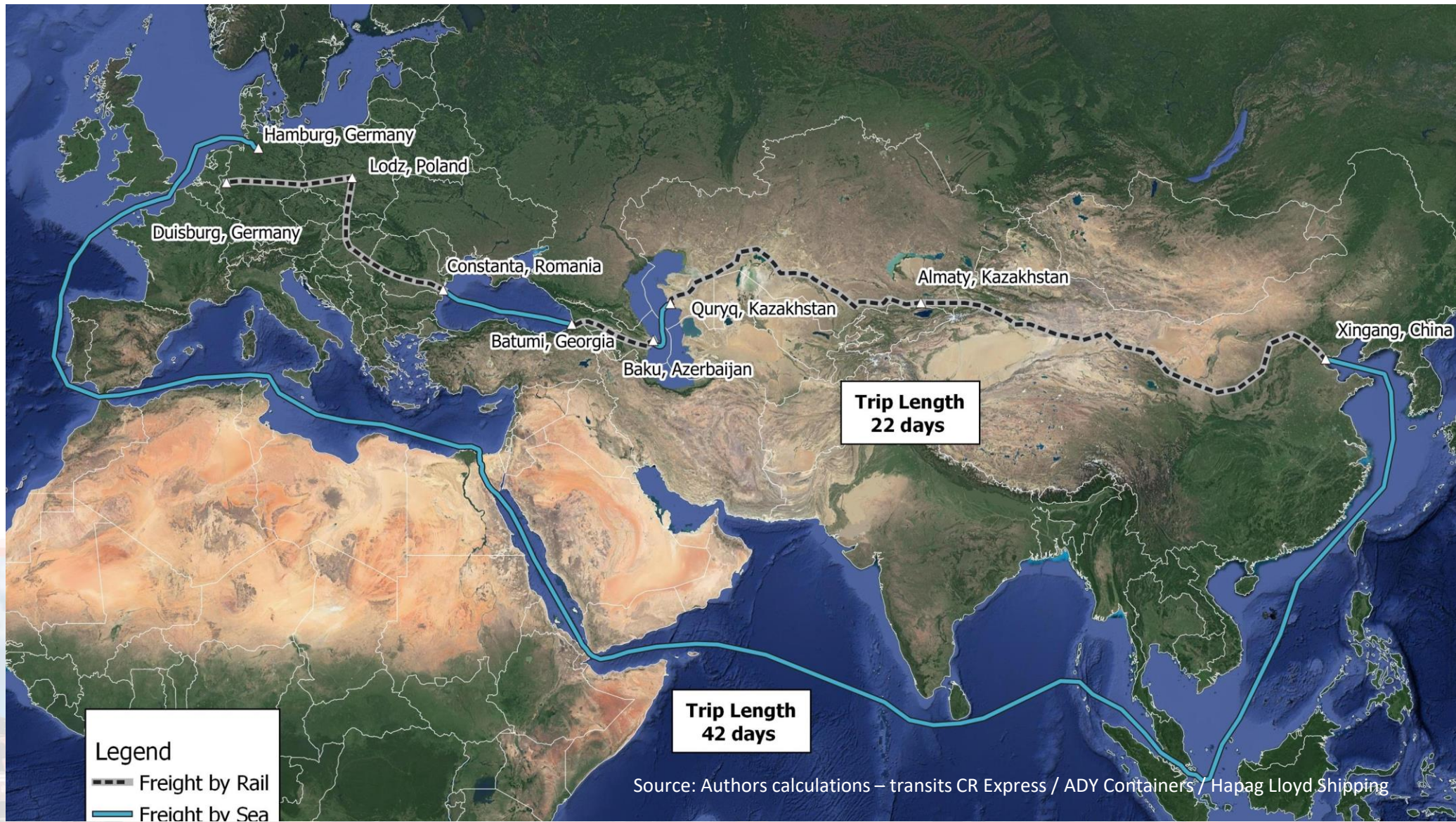
Year on Year Growth by Month

● Imports



Source: Trade and Transport Group European Trade Monitor

PRC TO EUROPE – TRANSIT TIME COMPARISON



CAREC MIDDLE CORRIDOR – VALUE OF TIME

- The value of freight travel time savings (VFTTS) is an important input to cost–benefit assigned a monetary value, in simple terms the time value of money as a factor of value of time for 40-foot container of electronic goods CY-CY can be shown as;
- Sea Freight Transport transit time 42 Days
- Rail Freight Transport transit time 22 days / saving 20 days transit
- Assume trade financing of 8%/year
- High value density 40' container US\$160/kg (UHD QLED TV)
- 20-day extra transit time cost = trade cost US\$,10,000
- Assume anything over US\$50/kg middle corridor is contestable.

PRC TO EUROPE – VALUE OF TIME CALCULATION

- More formal measure of value of freight travel time savings

Value of Container for Sea Transit to be competitive

Value of Container \$ 597,100

Middle corridor
Sea Transit

Mar-23
\$ 8,000
\$ 8,000

Delay Cost	Day 1	Day 2	Day 3	Day 4	Day 5
	\$ 327.18	\$ 654.18	\$ 981.00	\$ 1,307.64	\$ 1,634.10
Difference	\$ 327.18	\$ 327.00	\$ 326.82	\$ 326.64	\$ 326.46

Cost per day Comparison - finding optimal shipment output

Value of Container \$ 2,240,000

US\$/TEU/day (including delay cost)

Sea Transit \$ 619.11
Middle corridor \$ 363.64

Daily Cost	Day 1	Day 2	Day 3	Day 4	Day 5
Sea Transit	\$ 35.48	\$ 70.95	\$ 106.43	\$ 141.90	\$ 177.38
Middle corridor	\$ 363.64	\$ 727.27	\$ 1,090.91	\$ 1,454.55	\$ 1,818.18

PRC TO EUROPE – MIDDLE CORRIDOR ADVANTAGE

Ocean Freight Transit

Delay cost (20 Days) + Freight cost Mar 2023

\$9,800 + \$1490

US\$565/FEU/Day

Middle Corridor Transit

Intermodal Freight Cost Mar 2023

\$8,000

US\$364/FEU/Day



Middle Corridor Transit is currently **1.7x** cost advantage per FEU (Goods value US\$5 mil)

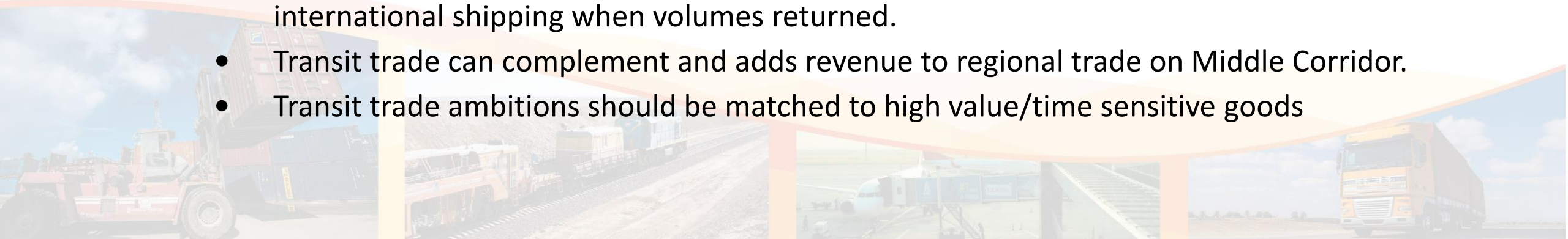


PRC TO EUROPE – MIDDLE CORRIDOR CONSTRAINTS

- Complex end-to-end intermodal transactions involving private forwarding companies and state-owned providing rail transport services, commission shipping agents, wider institutional networks and statutory service providers must make economically rational decisions and withdraw from subsidies.
- Caspian Sea can be a major bottleneck as ferry and port services are insufficient to balance rail throughput capacity on either side (Badambaeva and Ussembay 2018).
- Caspian is prone to strong winds and bad weather that restricts shipping operations
- The rail ferry to Baku has been operational for more than three decades, but it only introduced RoRo Truck container services in 2019 (PortsEurope 2019) offers limited capacity.
- Limited vessel fleets - expanded in recent years, now 15 rail ferries / 2 RoRo vehicle ferries servicing Baku–Aktau and Baku–Turkmenbashi routes (ASCO 2023).
- Limited port capacity – New ports at Turkmenbashi Turkmenistan, Kuryk Kazakhstan and Azerbaijan at Alat, 1st phase of 10–11.5 m tonnes gen cargo and 50,000 TEU, plans for expansion.
- The Caspian Sea has limited safe navigable water depth at the main route crossings, which limits commercial ship design scale and thus in service cargo capacity.
- The Caspian Sea basin and is suffering from a phenomenon of water loss dropping by 7cm every year, a trend likely to increase. In five years it might be about 40cm lower than today and in ten years almost one metre lower. By 2099 Caspian Sea may be 9-18 metres lower. (Wesselingh, F., 2020)

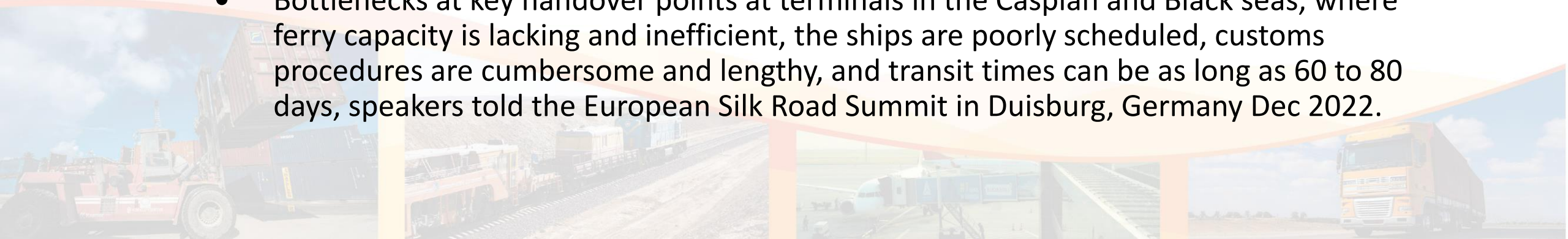
CAREC MIDDLE CORRIDOR - SUMMARY

- The Middle Corridor is an essential part of the CAREC Transport network
 - CAREC countries, only Pakistan and the PRC have seaports connected to the major maritime lanes. Azerbaijan, Georgia, Kazakhstan, and Turkmenistan have developed inland seaports on the coasts of the Black Sea and the Caspian Sea that form integral links with the rail and roadway networks
 - The Middle corridor Caspian and Black Sea connections support the core overland routes including Baku–Tbilisi–Kars railway and Baku–Batumi highway in the South Caucasus that continues as the Aktau–Dostyk railway and the Aktau–Khorgos highway within the framework of the W.Europe–W.PRC road connection in Kazakhstan.
 - The surge in freight volumes PRC to/from Europe experienced over 2020-22 was an anomaly resulting from Covid trade conditions including reduction of 14% of ship capacity from PRC main ports to EU ports and the gouging pricing behaviour by international shipping when volumes returned.
 - Transit trade can complement and adds revenue to regional trade on Middle Corridor.
 - Transit trade ambitions should be matched to high value/time sensitive goods



CAREC MIDDLE CORRIDOR - SUMMARY

- Network under stress
 - Access to the Russian rail route remaining closed has diverted transit freight to the Middle Corridor which added to throughput volumes resting from Covid issues.
 - It can be said that Covid trade conditions are now normalizing yet some 'spill over' from freight that otherwise would route onto the northern Russian railway from PRC to EU is being handled by the Middle Corridor.
 - Estimated at 1.5-2.0 million TEU the Russian railway volume is far in excess of the capacity of the Middle Corridor at 100,000 TEU at present estimate.
 - Some negative feedback from freight forwarders and industry are starting to emerge as the Middle Corridor struggles to provide adequate service frequency and transit times for PRC to EU – most of which is time sensitive.
 - Bottlenecks at key handover points at terminals in the Caspian and Black seas, where ferry capacity is lacking and inefficient, the ships are poorly scheduled, customs procedures are cumbersome and lengthy, and transit times can be as long as 60 to 80 days, speakers told the European Silk Road Summit in Duisburg, Germany Dec 2022.



CAREC MIDDLE CORRIDOR - SUMMARY

- New potential competitors or partners emerging !
 - The Russian invasion of Ukraine has resulted in developments of alternative transport strategies including new port access and new overland routes being arranged.
 - Aegean Sea ports are being used to access Ukraine via Bulgaria and Romania – so as to avoid the Black Sea, which Russia patrols, and the Bosphorus, a choke-point in Turkey.
 - Ukraine has indicated plans to rebuild its railways to European gauge and talk of turning the western Ukrainian city of Lviv, into a freight hub with rail links to Kosice in Slovakia and Ostrava in the Czech Republic, as well as to southern Poland's Silesia region.
 - Rail Baltica project first voiced in 2006 is being revitalized – the plans are to link the Lithuanian port city of Klaipeda overland via an 870km high-speed railway connecting Estonia, Lithuania and Latvia to Thessaloniki port in Greece.
 - Russia is upgrading its ports in collaboration with Iranian investments. An Iranian shipping company on the Caspian is boosting Iran's fleet of freighters. Russia is investing in a 164km railway through Iran to its border with Azerbaijan on the Caspian shores. Once complete it will provide a sanctions-defying rail link that runs from the Baltic down to Bandar Abbas on Iran's Persian Gulf (The Economist 4 May 2023).

