ÖBB INFRA

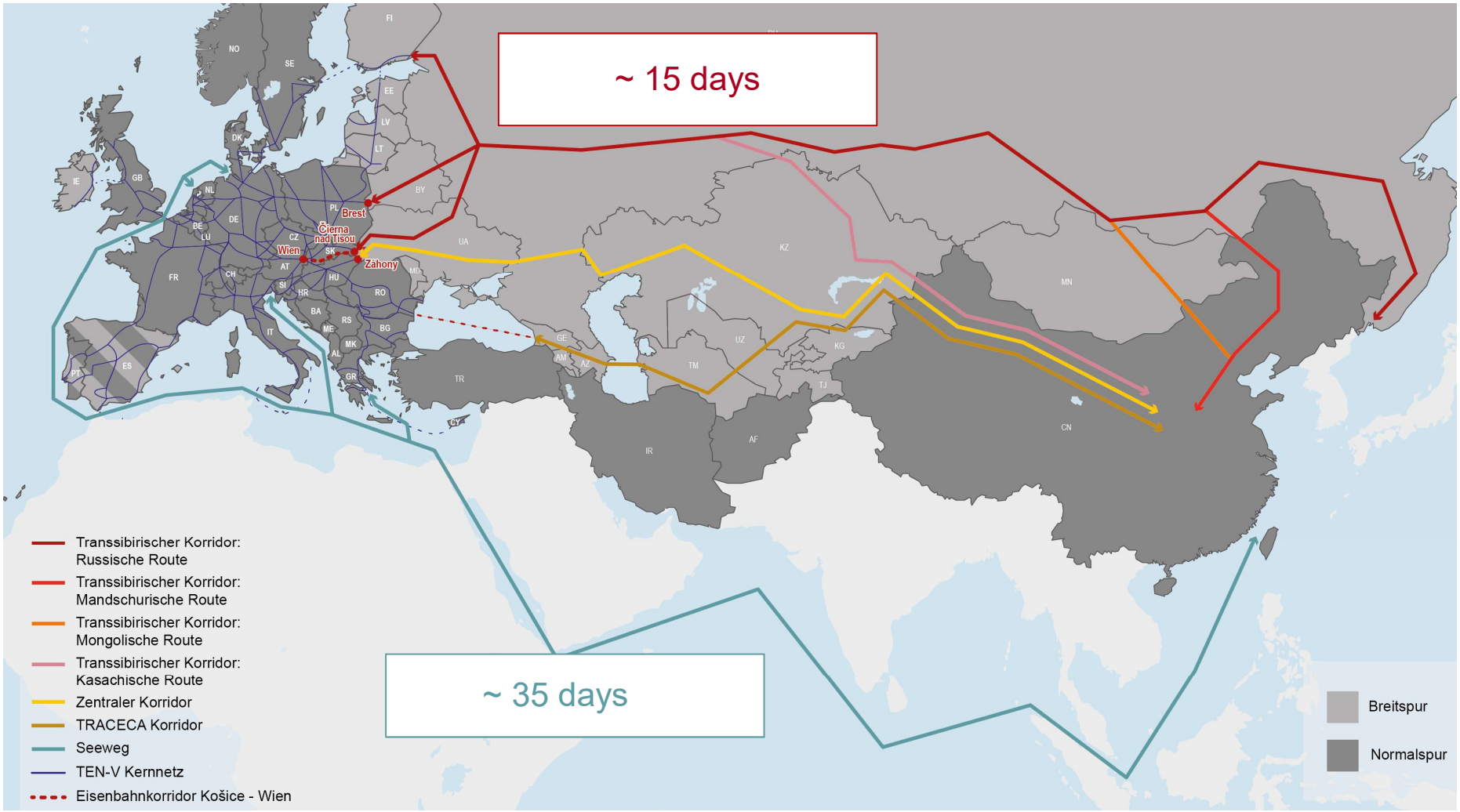
“New Silk Road” rail project

Construction of a broad gauge railway to Vienna

Integration in Europe May 2018

Mag. Christian Trattner

Rail transport from China to Europe entails transport times savings of almost three weeks compared to carriage by sea

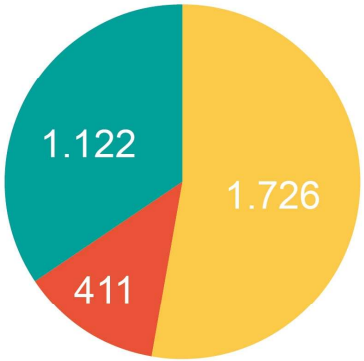


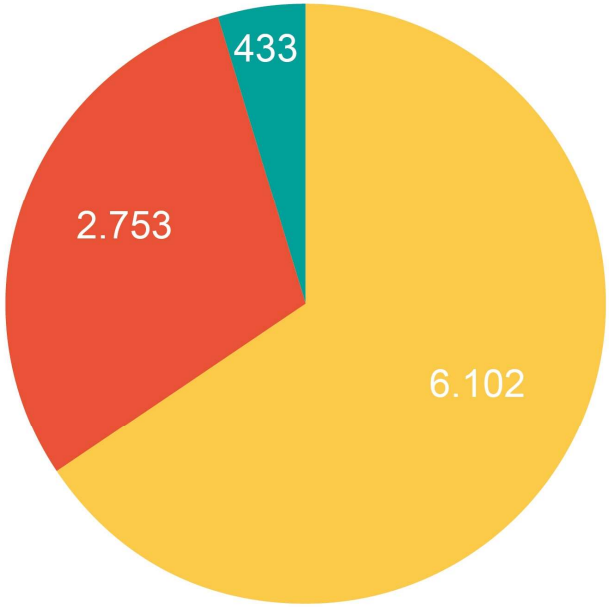
The Košice–Vienna broad gauge project will complete a connection between China and Europe and thereby increase trading opportunities

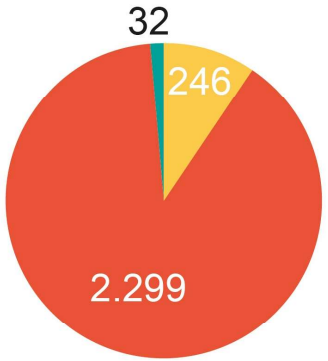
Routes „New Silk Road“

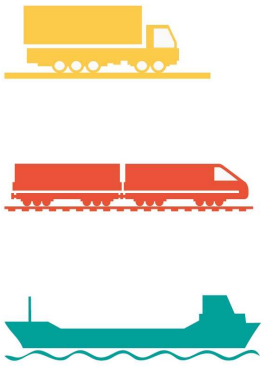
Significant potential for an expansion of the railway freight transport share in China and the EU

Transport Mix EU / China / Russia









EU:
3,259 bn t-km

China:
9,288 bn t-km

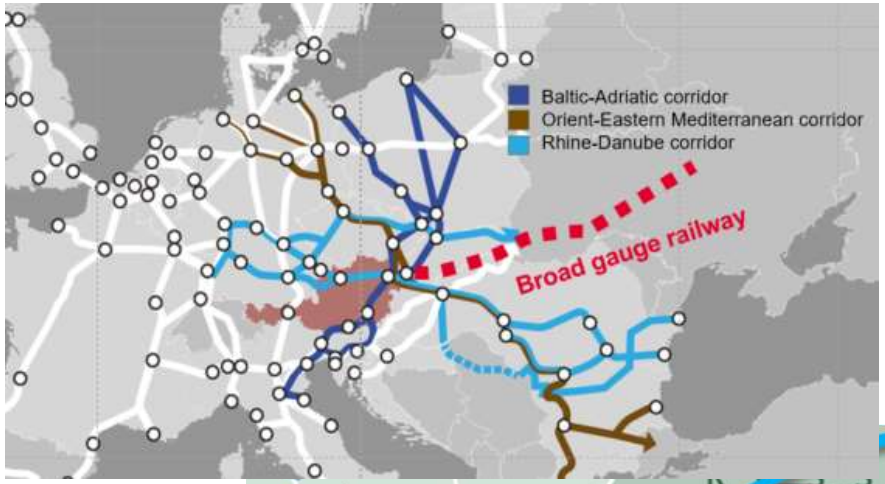
Russland:
2,577 bn t-km

Source: European Union 2016: S. 34

Add value by the setup of the Twin-City-Region

The Twin City Region connects 3 high capacity railways (Baltic Adriatic; Orient/East; Rhine-Danube) and both silk road routes

Routing



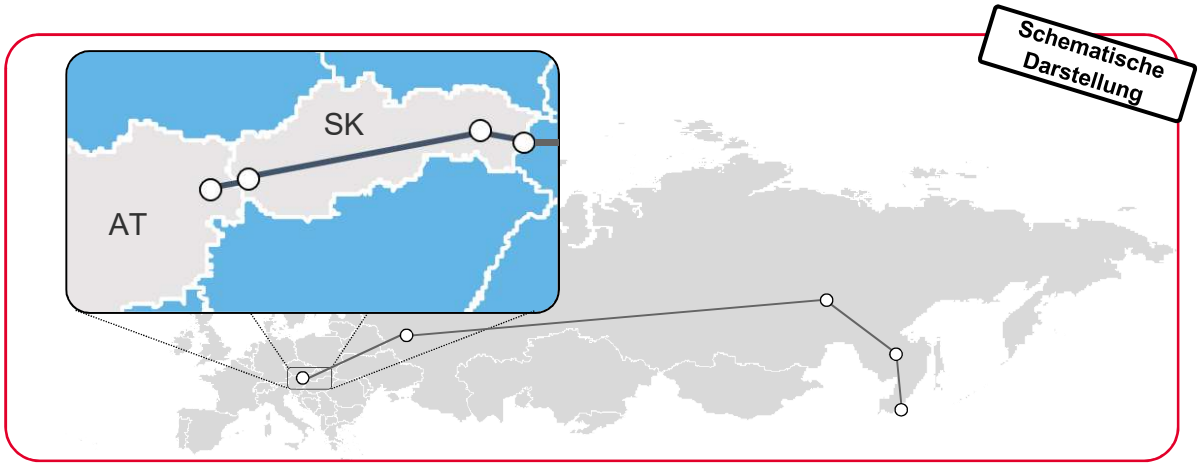
European TEN-T Network

Western Silk Road Sections

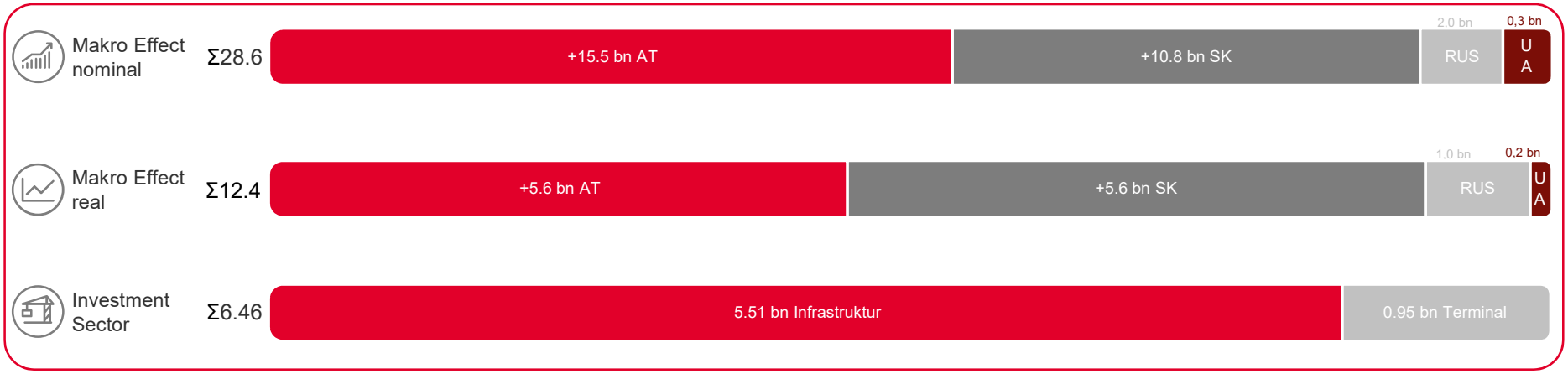
Cargo Hub Silk Road Vienna Benefits

- No other region in Europe connects that many traffic routes
- 3 TEN-T high capacity railwaycorridors
- Connection to Budapest and therefore access to Belgrade and the southern Silk Road
- Connection to Adriatic ports
- Connection to Prague
- Possible connection to Russian broad gauge network
- Danube harbour with railway connection
- Vienna International Airport, M.R Štefánik Airport Bratislava

The Project - 394km broad gauge without interruption from Košice to Vienna – 2 terminals, approx. 18.500 trains p.a.

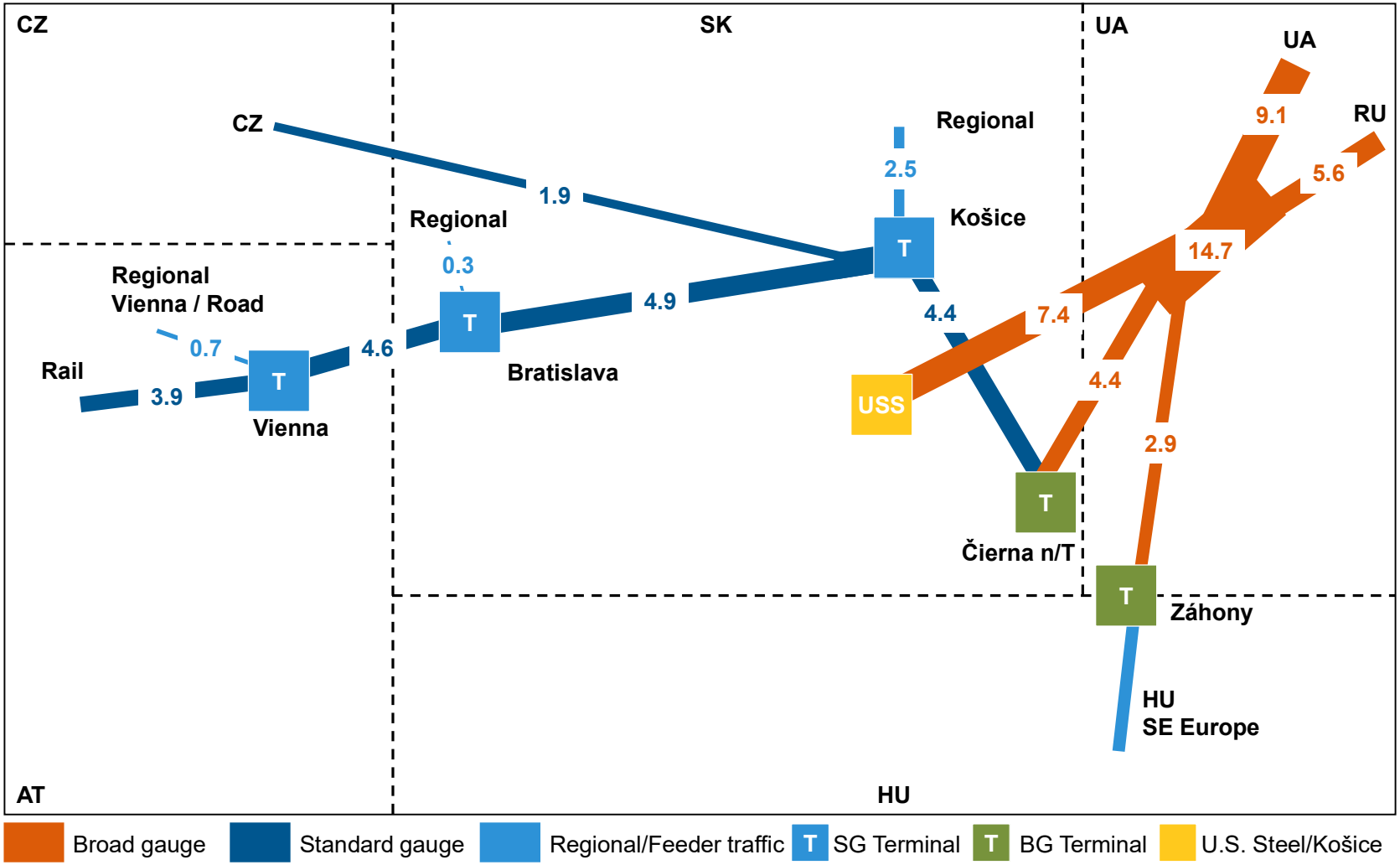


- Kosice-Wien: 394km
- Investment Total (EUR bn)
  - Infrastrukcture 5.51 bn
  - Terminal 0.95 bn
- Trains p.a. (to AT) 18.460

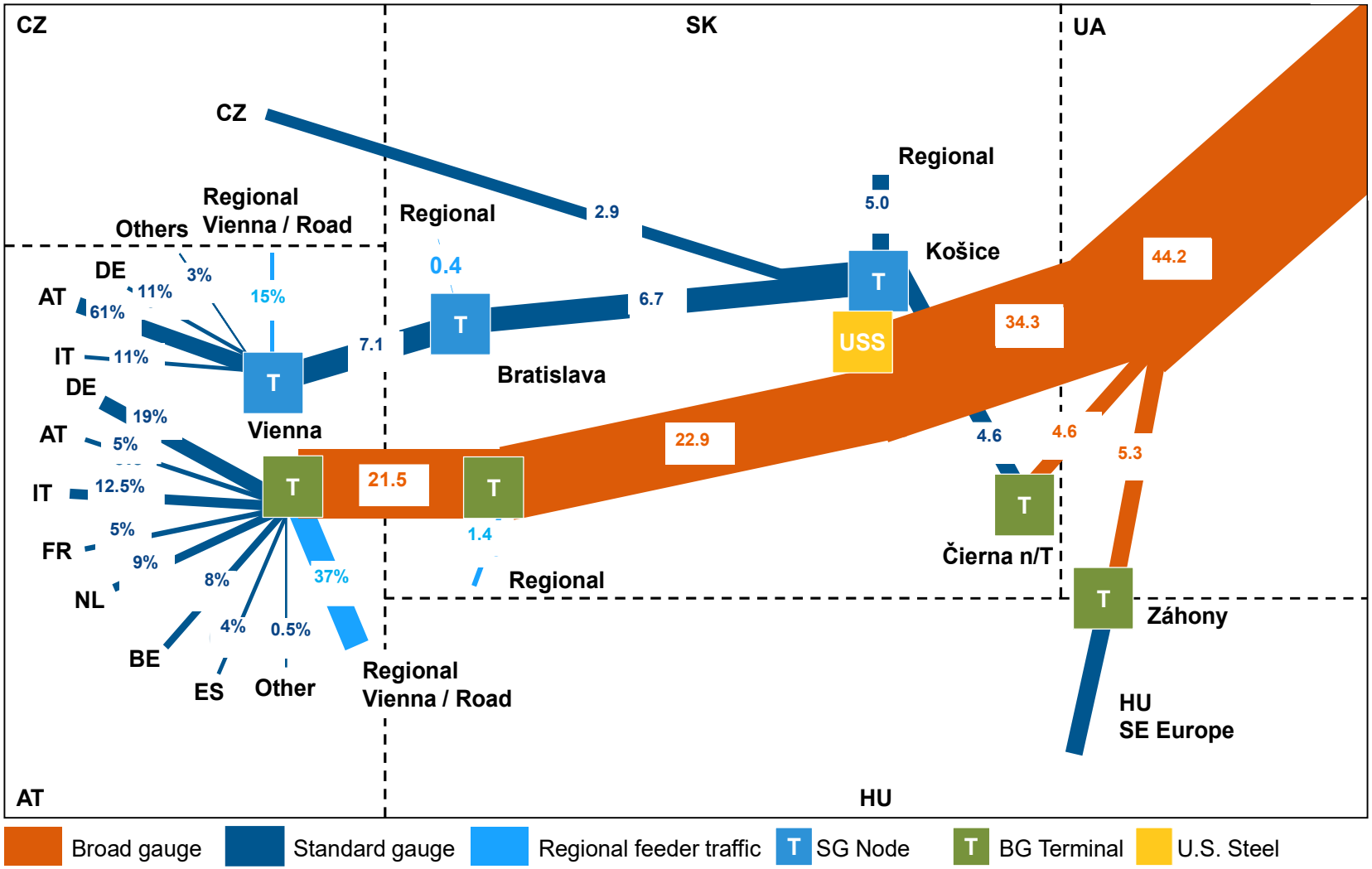


Source: Final Report Elaboration of Business Models and Economic Analysis for Broad Gauge Connection Košice-Vienna, Deloitte Financial Model, PROGNOS

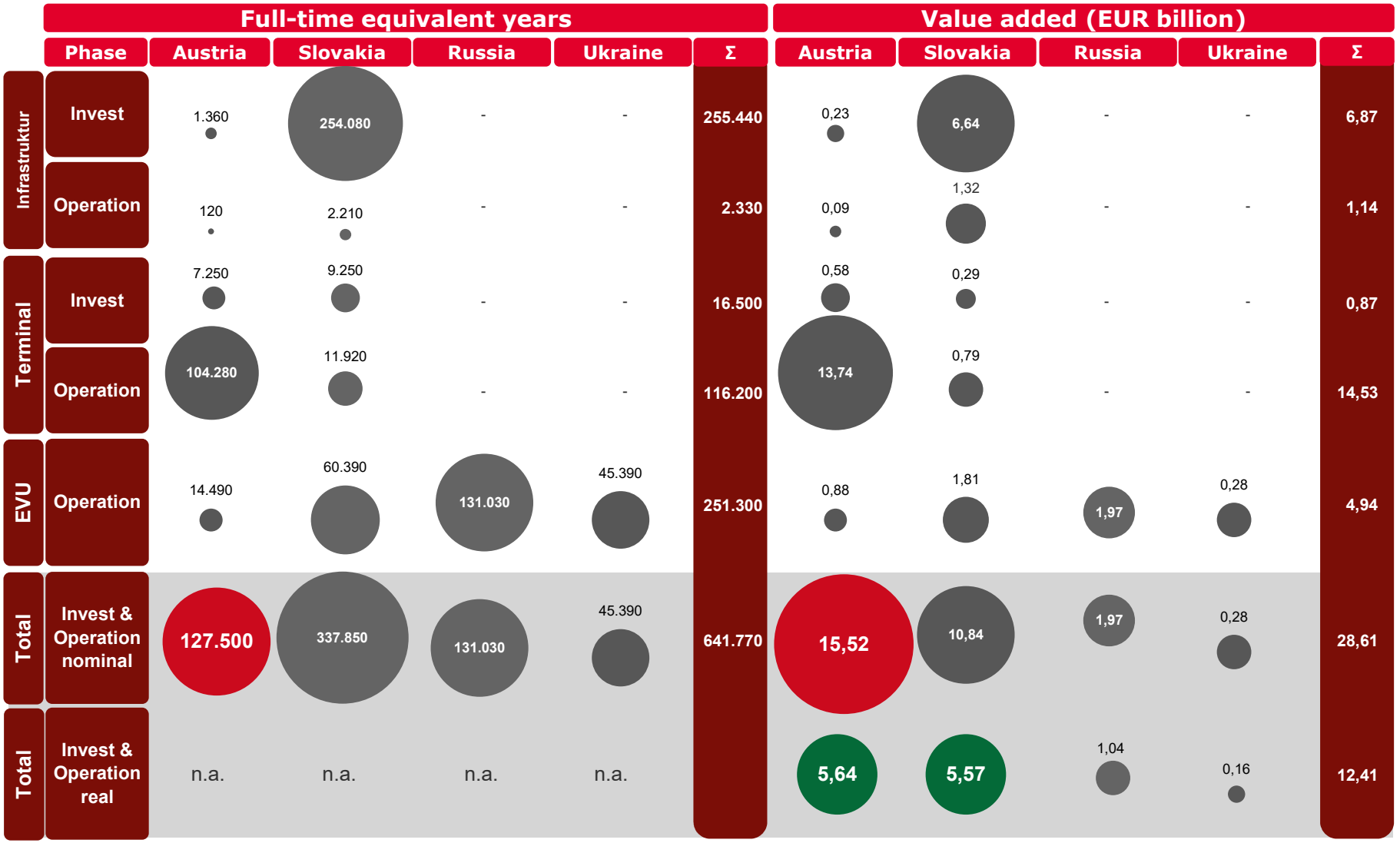
Currently 15 mn tons freight traffic p.a. from Ukraine and Russia, 5 mn tons continue to Austria



Freight transport quantities on environmentally friendly railway almost 6-times as high as before the broad gauge connection



Slovakia mostly benefits during construction phase, Austria from operations and Ukraine and Russia from railway undertaking



Source: Final Report Elaboration of Business Models and Economic Analysis for Broad Gauge Connection Košice-Vienna, Deloitte Financial Model

Freight transport hub in the heart of Europe

Single-track line, exclusively
for freight services

Connection to the 1,520 mm broad gauge network in Košice

End in the Twin City Region Vienna–Bratislava in Austria

400 km line length

Investment costs of around EUR 6.5 billion

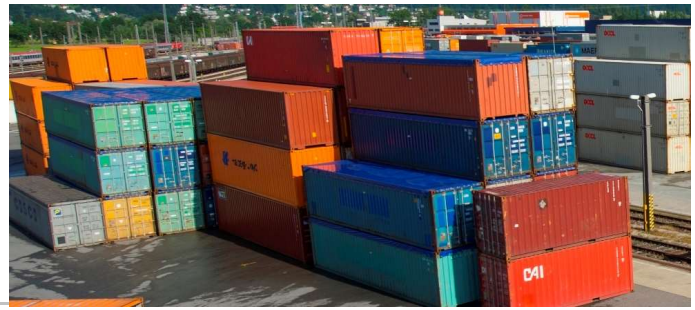
2 terminals

21 million tonnes of freight per year

In operation from 2033

Overview of relevant planning parameters

Track width	1,520 mm
Route class	Axle load 27.0 t, 10.5 t/m
Structure gauge	S and SP (according to GOST 9238-83)
Number of track axes	1
Max. train length (without traction unit)	1,000 m
Vmax	120 km/h (freight high-speed 140 km/h)
Min. arc radius	1,100 m (a = 0.654 m/s²)
Max. superelevation	120 mm
Max. gradient	12 ‰ (15 ‰ in difficult conditions)
Standard gradient	8 ‰
Nominal voltage, nominal frequency	25 kV, 50 Hz
Safety system	ETCS Level 2
Reference vehicle	Siemens Euro Sprinter Class 3100; container car



Operational concept and timetable

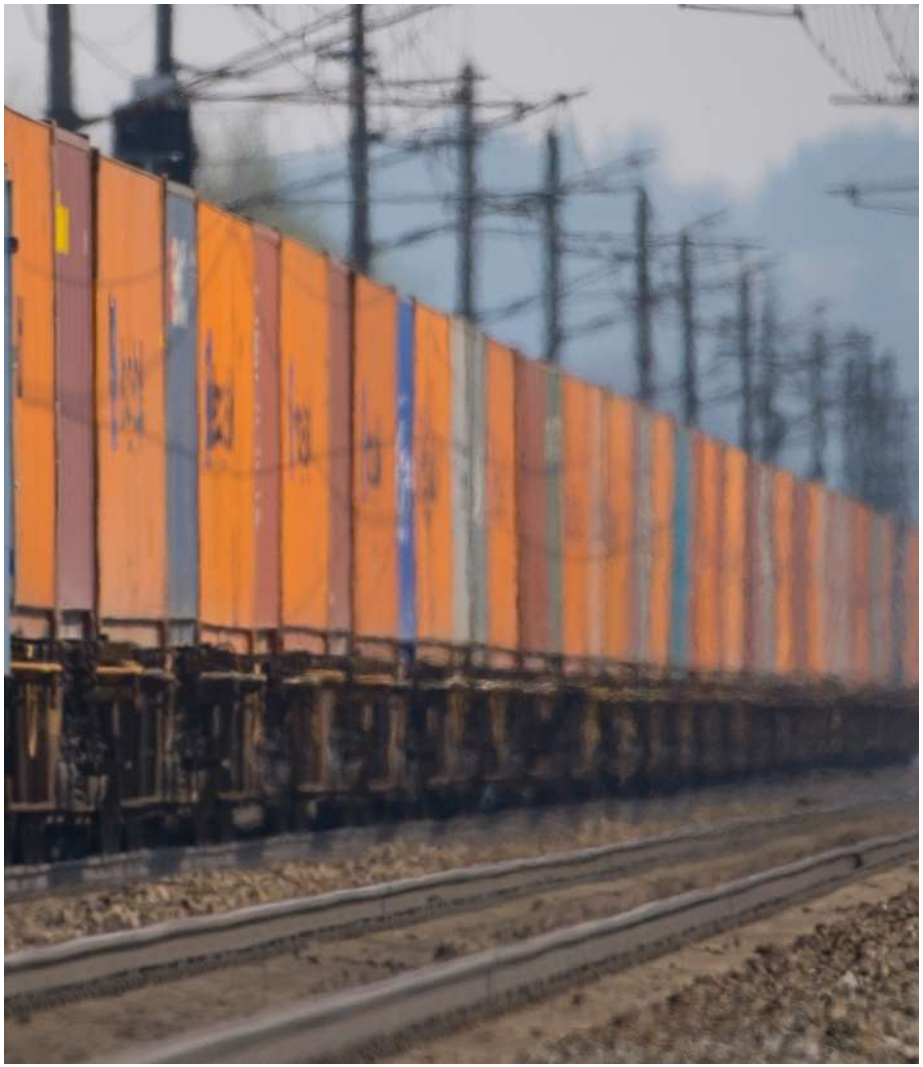
Single-track operations management
with passing points,
with and without operating stops

Total transport volume
Košice Terminal, Western Slovakia
18.2 million t (2030)/22.9 million t (2050)

Operating hours/day
20 on normal days
24 on peak days (38 trains for each direction of travel 2050)

Train composition parameters
Multiple-system locomotives (alternating and direct current),
2-3 locomotives, depending on the tonnage, operating period

Travel times 4 h 19 min to 5 h 45 min
between Haniska and the end terminal.
Depending on the gross train weight, number of locomotives, direction of travel, operating stops, time of day



Time is on the side of the railways