

EATL Comparison Study

Maritime versus Inland Transport Options



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WP.5, item 4 (b)



Objective of the Study

Methodology

Maritime Transport

Rail Transport - Block Trains

EATL Routes and Scenarios

Scenario Presentation





Objective of the Study

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“The aim of this study is to compare the existing Euro-Asian maritime routes with selected rail routes identified in the EATL project. The methodology used for the analysis strives to be simple and pragmatic. It compares Euro-Asian maritime and rail links from the perspective of a logistics manager of a company that produces in some location and needs to deliver the goods produced to some other location.”



Methodology



1. What kind of block trains are we talking about?

2. What do we compare?

3. The issue is to connect China with Germany or Holland?

4. Is there any cargo?

Methodology



What do we compare?

Rail Transport : 1,500 USD?



Maritime Transport : 500USD?



Maritime Transport



Maritime Transport cost structure

1	2	3	4	5
Road Transport from Shipper to Port of Origin	Terminal Handling Charges at the Port of Origin	Freight Rate [Port of Origin to Port of Destination]	Terminal Handling Charges at the Port of Destination	Road Transport from Port of Destination to final Client
	+	+	+	+



Maritime Transport Time Schedule



Shanghai - Istanbul

Distance: 8,003 nm

Duration: 33.35 days



Source: www.axsmarine.com/

Maritime Transport Freight Rates - THC

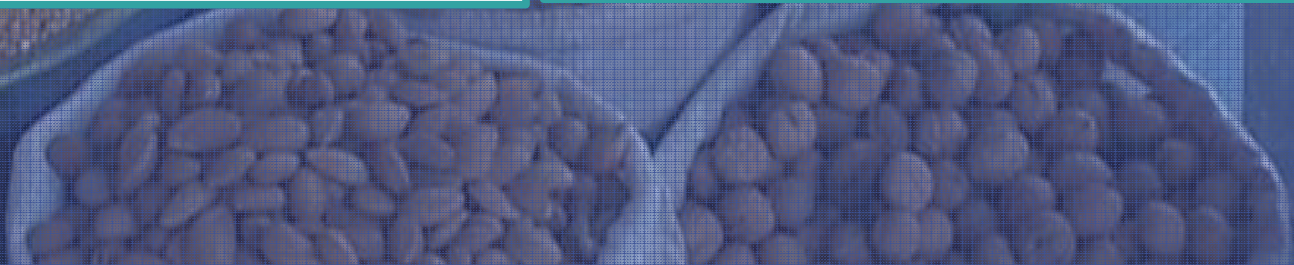


		Shanghai	
		20ft	40ft
1	Maersk/SAF	RMB 475	RMB 750
2	MSC	At cost	At cost
3	CMA CGM	RMB 1,297	RMB 1,297
4	Evergreen	RMB 370	RMB 560
5	Hapag Lloyd	RMB 460	RMB 720
6	COSCO	RMB 374	RMB 564
7	APL	RMB 476	RMB 750
8	China Shipping		
9	NYK	RMB 880	RMB 1,300
10	MOL	RMB 480	RMB 720

		Istanbul	
		20ft	40ft
1	Maersk/SAF		
2	MSC		
3	CMA CGM	Free in	Free in
4	Evergreen		
5	Hapag Lloyd	\$ 219	\$ 219
6	COSCO		
7	APL	\$ 100	
8	China Shipping	FIO	FIO
9	NYK		
10	MOL	Free in	Free in

		Rotterdam	
		20ft	40ft
1	Maersk/SAF	€ 185	€ 185
2	MSC	€ 175	€ 175
3	CMA CGM	€ 160	€ 160
4	Evergreen	€ 160	€ 160
5	Hapag Lloyd	€ 200	€ 200
6	COSCO	€ 140	€ 140
7	APL	€ 190	€ 190
8	China Shipping	€ 170	€ 170
9	NYK	€ 160	€ 160
10	MOL	€ 200	€ 200

		ST. Petersburg	
		20ft	40ft
1	Maersk/SAF	\$ 290	\$ 290
2	MSC		
3	CMA CGM	\$ 370	\$ 370
4	Evergreen	\$ 250	\$ 250
5	Hapag Lloyd	\$ 220	\$ 220
6	COSCO	\$ 200	\$ 200
7	APL	\$ 300	\$ 300
8	China Shipping	\$ 300	\$ 300
9	NYK	\$ 250	\$ 250
10	MOL	\$ 220	\$ 220



Maritime Transport Freight Rates - Other Port Costs



Ports	Unloading of Containers (\$)	Loading of Containers (\$)	Customs Formalities (\$)
Kostanta	70	75	55

Other Costs	P	(\$)
Entrance cost	<input checked="" type="checkbox"/>	35
Parking cost	<input checked="" type="checkbox"/>	20
Loading to truck cost	<input checked="" type="checkbox"/>	65
Unloading from truck	<input checked="" type="checkbox"/>	70
Other documents	<input type="checkbox"/>	45
Other cost/ Specify	<input type="checkbox"/>	
THC CONSTANTA	<input checked="" type="checkbox"/>	175
DETENTION FEE	<input checked="" type="checkbox"/>	45
DELIVERY ORDER	<input checked="" type="checkbox"/>	50

Source: Romanian Forwarders Association 2010



Maritime Transport Freight Rates



FROM			
Xingang / Qingdao / Dalian [China] (USD\$)			
TO			
Middle East	20` / 40/ 40` HC		20` / 40/ 40` HC
DUBAI / JEBEL ALI	1,500/2,400/2,400	B.ABBAS	1,600/2,500/2,500
ABU DHABI	1,700/2,800/2,800	SHARJAH	1,700/2,800/2,800
DAMMAM	1,600/2,500/2,500	RIYADH	1,800/2,900/2,900
BAHRAIN	1,800/2,900/2,900	DOHA	1,900/3,100/3,100
KUWAIT	1,700/2,800/2,800	MUSCAT	1,800/2,900/2,900
UM QUASER	2,300/3,700/3,700		



Rail Transport - Block Trains



1

Transport of container by truck from original shipper to main train station to be loaded on the train, loading/documentation expenses

2

Transport of container by truck from original shipper to main train station to be loaded on the train, loading/documentation expenses

3

Delivery of the container by truck from the final unloading station to the final shipper. Unloading / documentation expenses



Rail Transport Time Schedule



EU	Asia	CIS
26 km/hour	21 km/hour	34 km/hour

id	Route	Distance	Time
1	Bandar Abbas - Sirjan	359	
2	Sirjan - Mobarakeh	321	
3	Mobarakeh - Tabas	275	
4	Tabas - Torbat Heydarieh	334	
5	Torbat Heydarieh - Sarakhs	330	
	Total	1,619	52

Rail Transport Tariffs



- ✓ Different tariffs for the same routes are quoted by forwarders and state rail organizations
- ✓ State rail organizations charge different clients differently. A forwarder, a shipper, a small trader with one container or a big manufacturer with 1000 containers per year pay / ask for different tariffs
- ✓ The actual - charged - tariffs are different than the published tariffs

Tariffs differ depending whether:

- it is bulk or container cargo
- it is carried in wagons or by a block train
- the client is a forwarder or a shipper
- the amount cargo is large
- it is long term contract with a guarantee for the quantity
- terms of payment are favourable or not
- \$/€ per train kilometer or per container, or container kilometers etc

Rail Transport Tariffs



	20'' full container (per container)	40'' full container	20'' full container (per km)	40'' full container (per km)	20'' empty container (per km)	40'' empty container (per km)
Afghanistan			-	-		
Armenia			0.52	0.64		
Azerbaijan			0.52	0.64		
Belarus			0.48	0.55		
Bulgaria			0.75	0.85		
China			0.40	0.50		
Georgia			0.48	0.55		
Germany			0.75	0.85		
Greece			0.75	0.85		
Iran	747	1,093	0.46	0.68	0.23	0.34
Kazakhstan	614	989	0.64	1.03	0.31	0.48
Kyrgyzstan			0.48	0.55		
Latvia			0.75	0.85		

Rail Transport Tariffs



	20'' full container (per container)	40'' full container (per container)	20'' full container (per km)	40'' full container (per km)	20'' empty container (per km)	40'' empty container (per km)
Moldova			0.48	0.55		
Mongolia			0.40	0,50		
Poland			0.75	0.85		
Romania			0.75	0.85		
Russian Federation			0.48	0.55		
Tajikistan			0.55	0.75		
Turkey	621	822	0.31	0.41	0.23	0.29
Turkmenis	692	1,254.	1.4	2.6		
Ukraine			0.48	0.55		
Uzbekistan	462.58	832.2	0.64	1.4	0.38	0.67

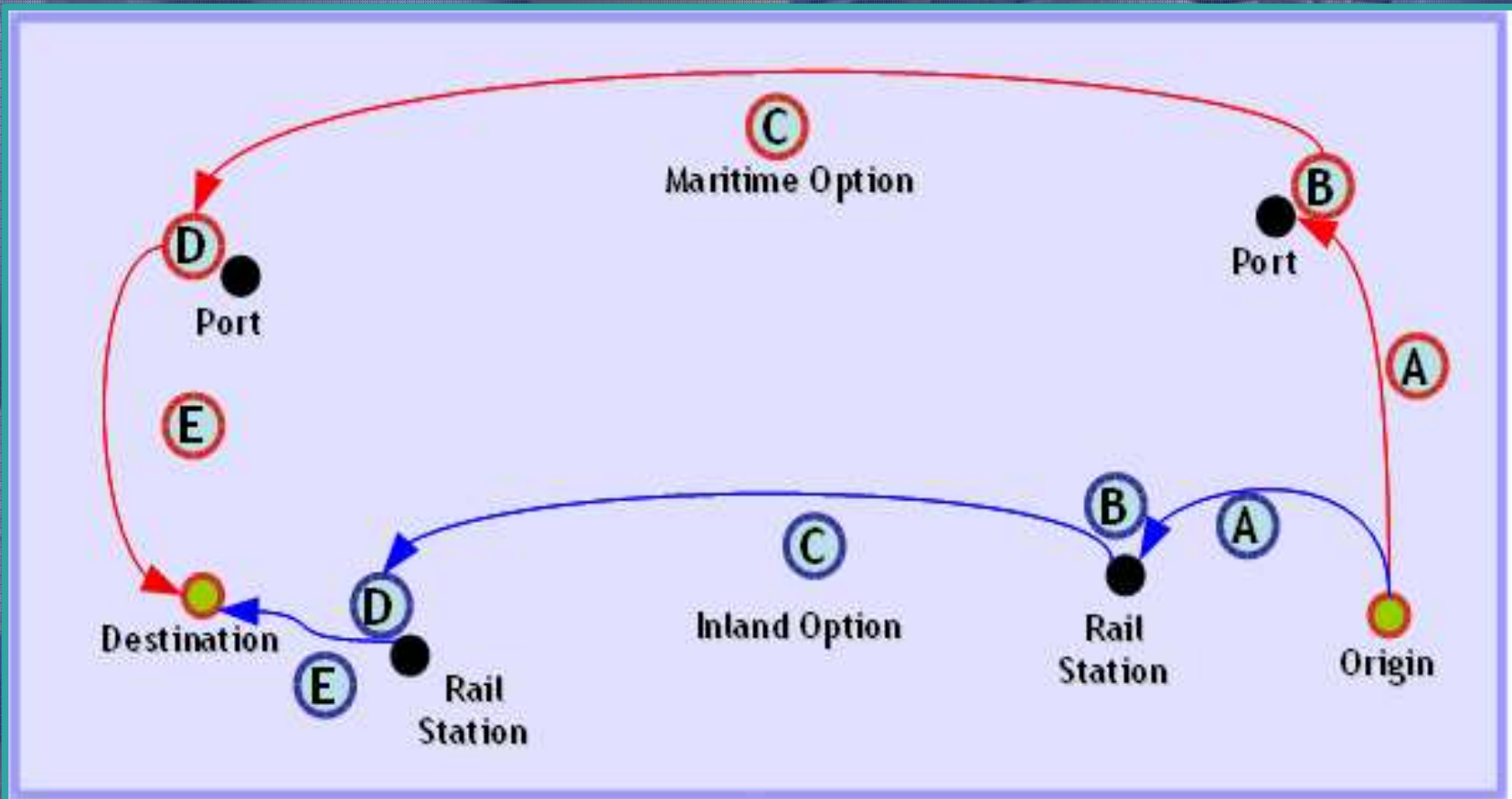
Road Transport Costs

Country	Cost of road transport (in \$)
Afghanistan	150
Armenia	140
Azerbaijan	160
Belarus	180
Bulgaria	195
China	100-200
Georgia	180
Germany	250-350
Greece	250
Iran	50-150
Kazakhstan	120-180
Kyrgyzstan	130
Latvia	230
Moldova	150
Mongolia	120
Poland	200-280
Romania	150-250
Russian Federation	80-200
Tajikistan	130
Turkey	180-300
Turkmenistan	130
Ukraine	150-250
Uzbekistan	100-150





EATL Routes and Scenarios



Maritime Transport		Rail Transport	
(A) Truck cost	(D) THC / Port costs	(A) Truck cost	(D) Unloading / other costs
(B) THC / Port costs	(E) Truck cost	(B) Loading / other costs	(E) Truck cost
(C) Maritime cost		(C) Rail cost	

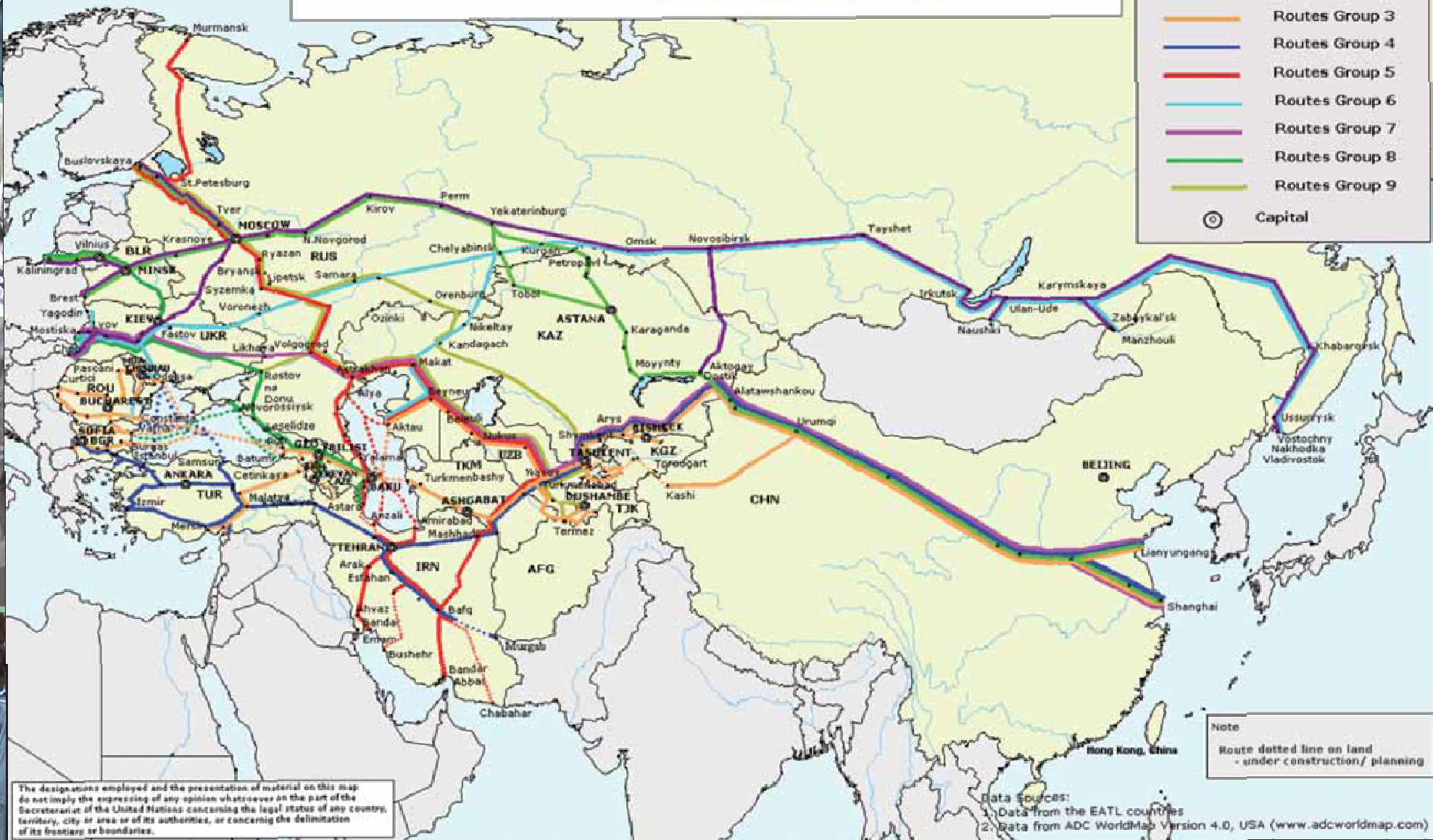


UNECE-UNESCAP Euro-Asian Links Project RAIL ROUTES

Euro-Asian Rail Routes Legend

- Routes Group 1
- Routes Group 2
- Routes Group 3
- Routes Group 4
- Routes Group 5
- Routes Group 6
- Routes Group 7
- Routes Group 8
- Routes Group 9

Capital



Note
Route dotted line on land
- under construction/ planning

The designations employed and the presentation of material on this map do not imply the expressing of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Data sources:
1. Data from the EATL countries
2. Data from ADC WorldMap Version 4.0, USA (www.adcworldmap.com)

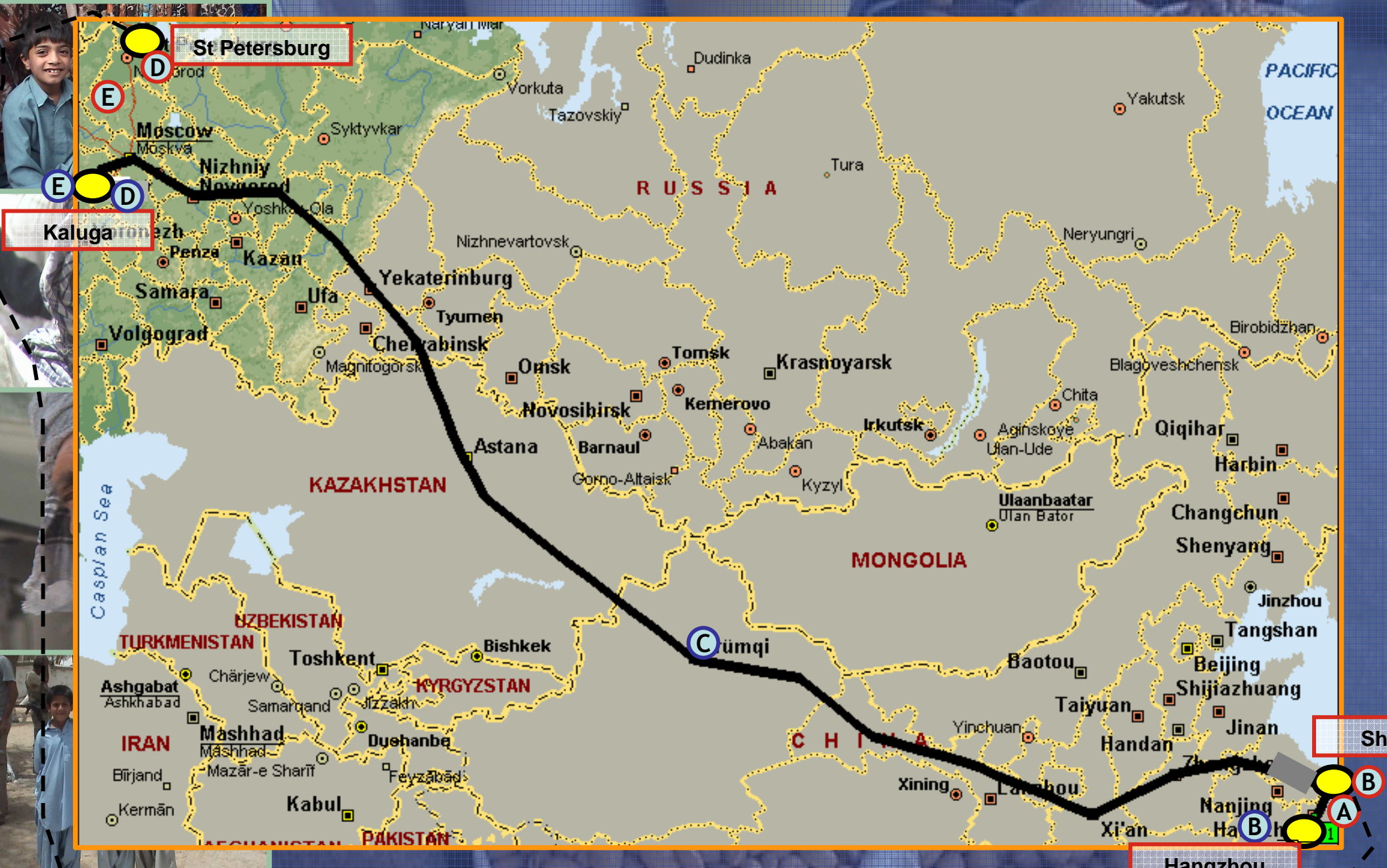
EATL Rail Route 1.

Scenario 1.



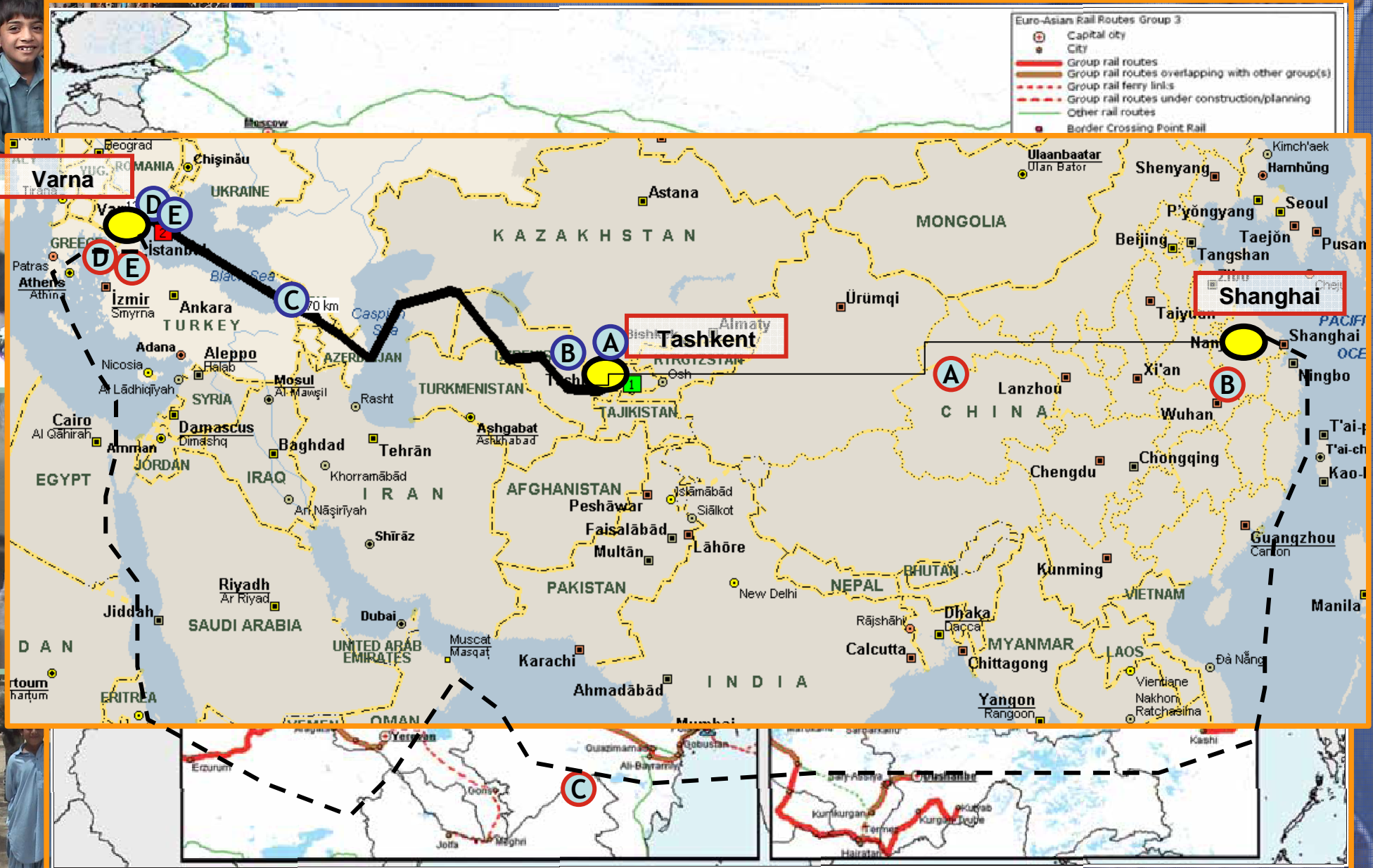
EATL Rail Route 2.

Scenario 2.



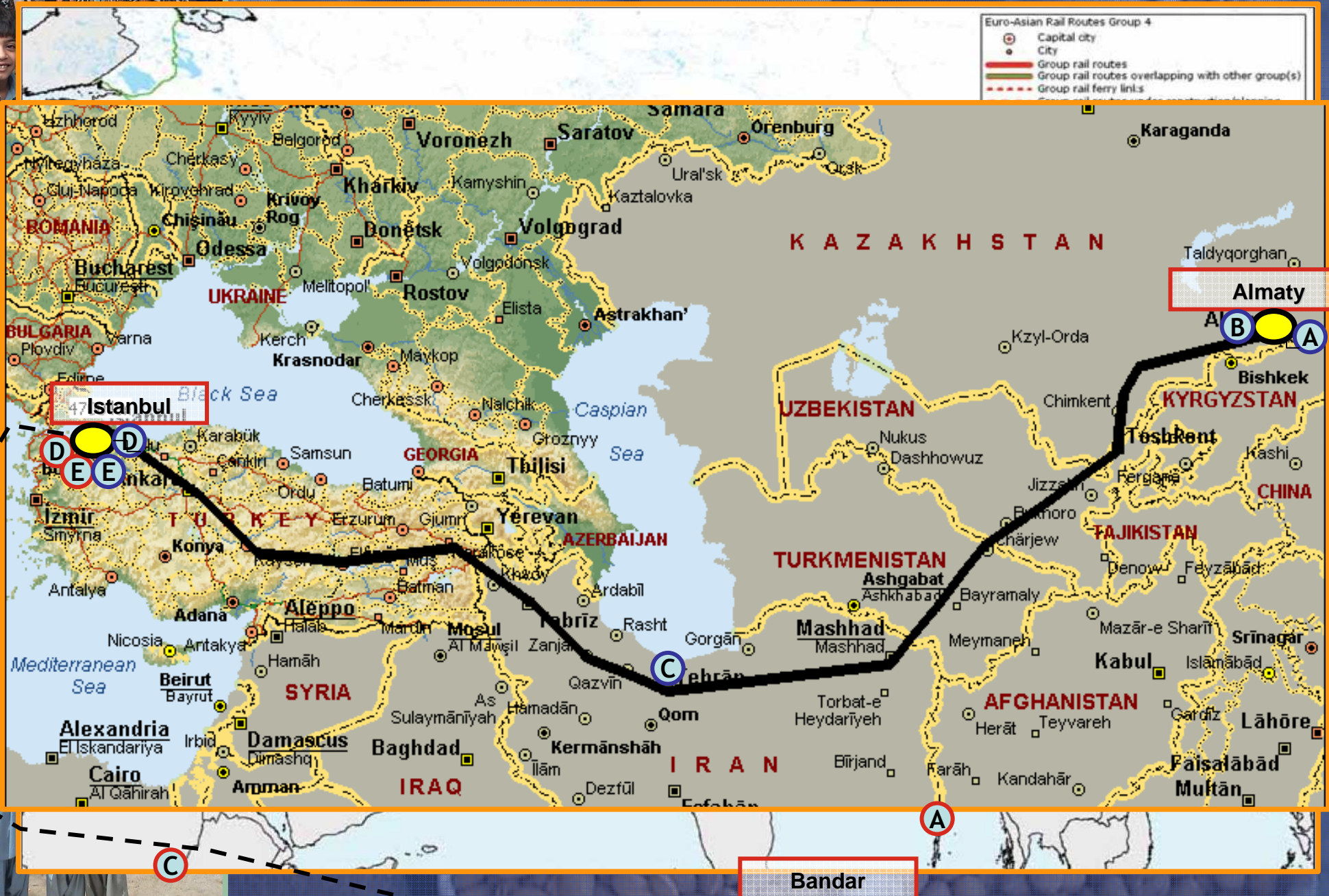
EATL Rail Route 3.

Scenario 3.



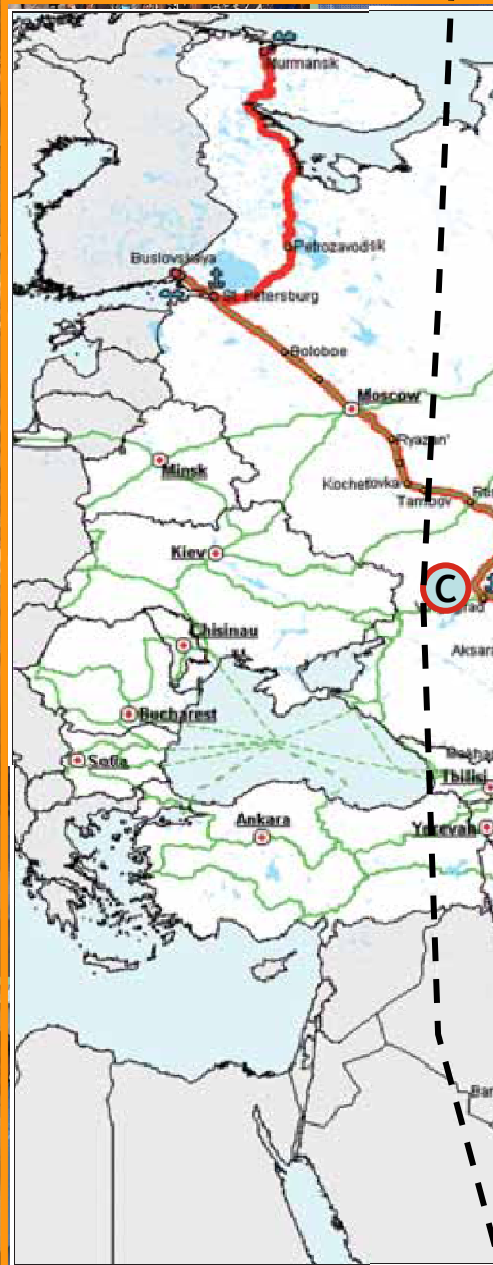
EATL Rail Route 4.

Scenario 4.



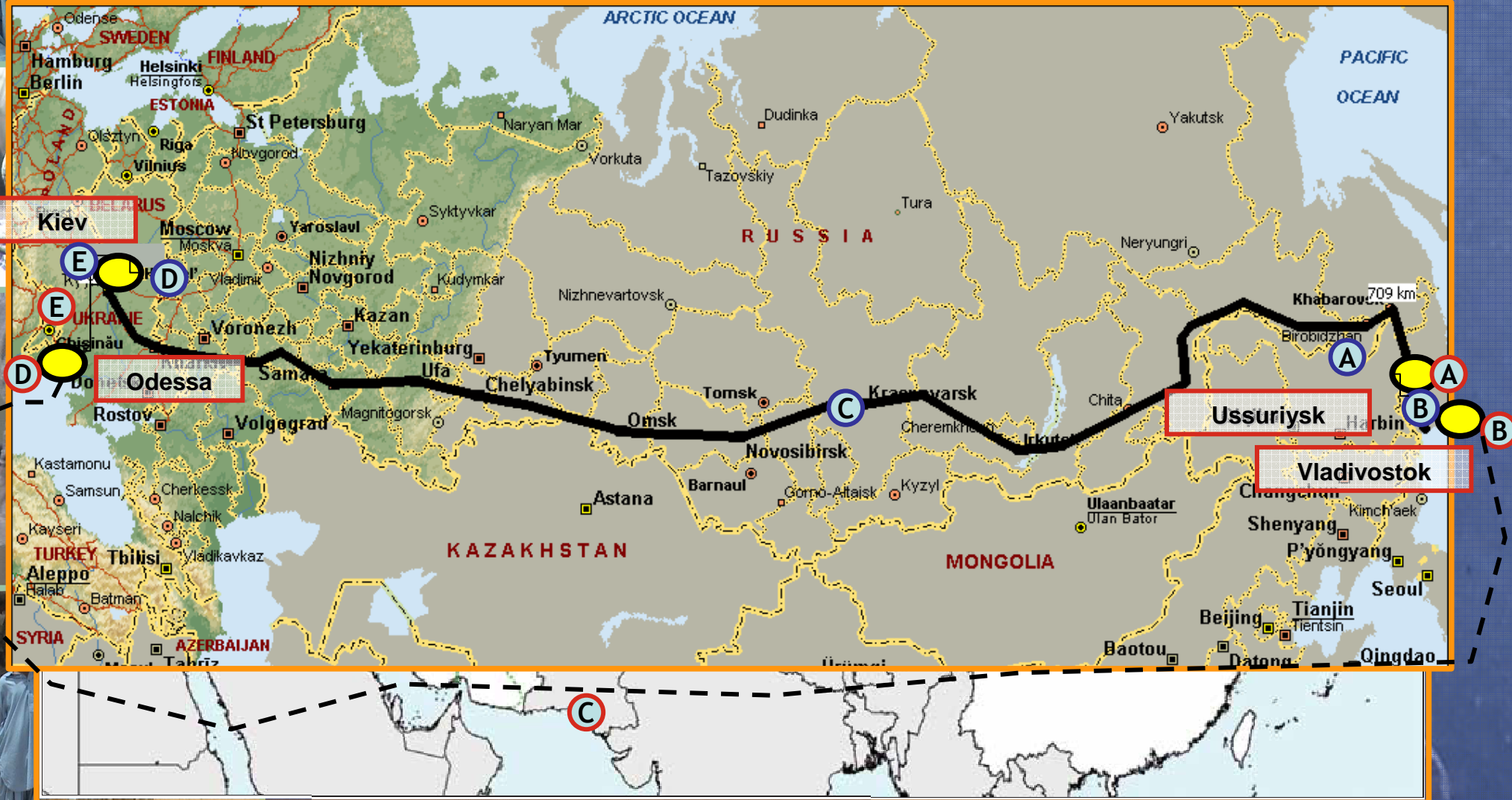
EATL Rail Route 5.

Scenario 5.



EATL Rail Route 6.

Scenario 6.



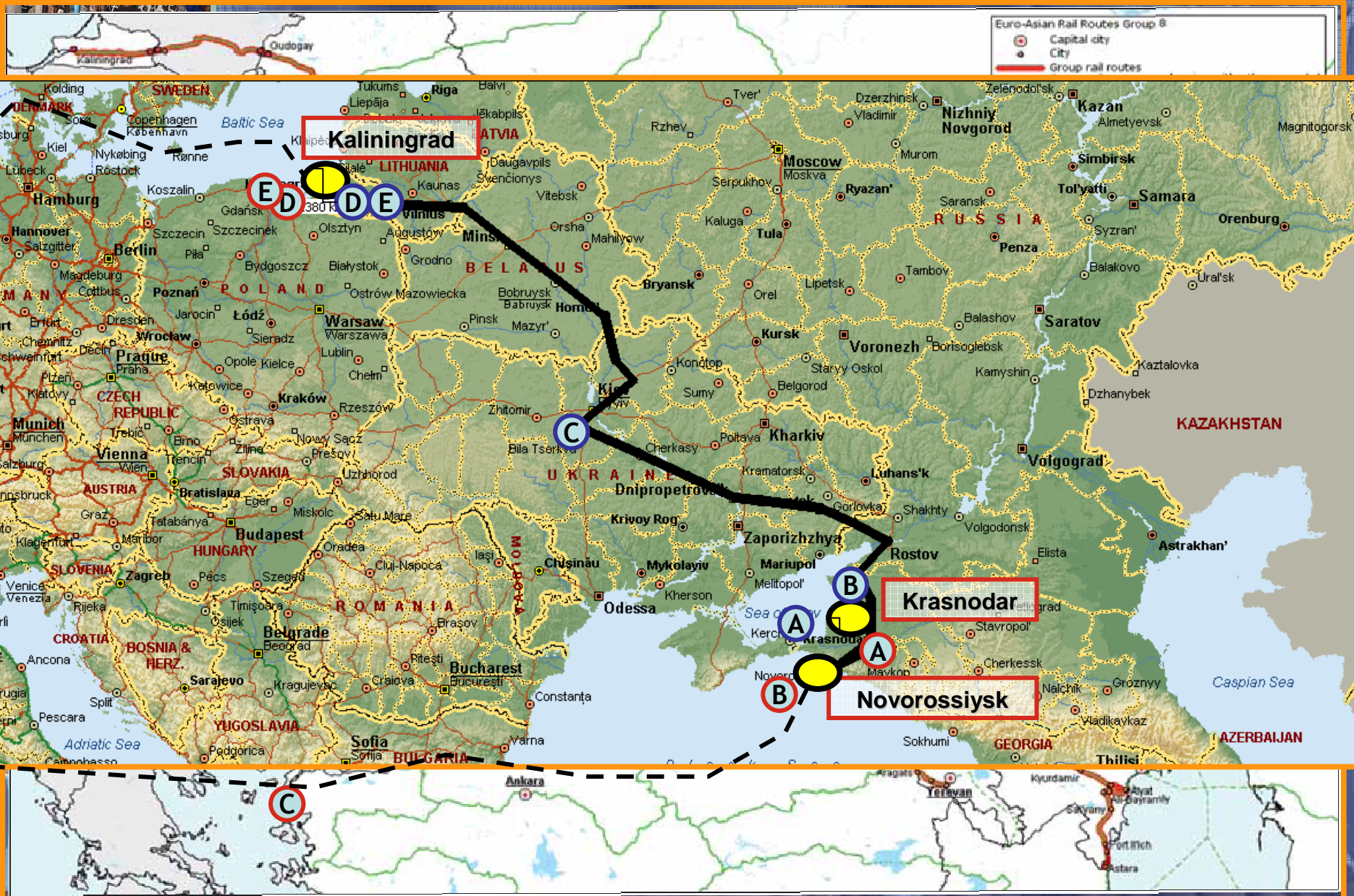
EATL Rail Route 7.

Scenario 7.



EATL Rail Route 8.

Scenario 8.



Case Study

Scenario 9.



Results....

Scenarios	Route	Rail		Maritime		Best Transport Means	
		Cost (\$)	Time (hrs)	Cost (\$)	Time (hrs)	Cost	Time
Scenario 1: EATL Route 1	Khabarovsk (Russia) to Potsdam (Germany)]	<u>6,967</u>	<u>341</u>	<u>6,533</u>	<u>589</u>	<u>Maritime</u>	<u>Rail</u>
Scenario 2: EATL Route 2	Hangzhou (China) to Kaluga (Russia Fed.)	<u>4,714.65</u>	<u>277</u>	<u>6,786</u>	<u>624</u>	<u>Rail</u>	<u>Rail</u>
Scenario 3: EATL Route 3	Tashkent (Uzbekistan) to Varna (Bulgaria)	<u>5,946</u>	<u>165</u>	<u>7,550</u>	<u>529</u>	<u>Rail</u>	<u>Rail</u>
Scenario 4: EATL Route 4	Almaty (Kazakhstan) to Istanbul (Turkey)	<u>5,881</u>	<u>250</u>	<u>4,970</u>	<u>672</u>	<u>Maritime</u>	<u>Rail</u>
Scenario 5: EATL Route 5	Morvarid (Iran) to Pushkin (Russia)	<u>6,390.5</u>	<u>256</u>	<u>3,310</u>	<u>374</u>	<u>Maritime</u>	<u>Rail</u>
Scenario 6: EATL Route 6	Ussuriysk (Russia) to Kiev (Ukraine)	<u>5,857</u>	<u>289</u>	<u>6,290</u>	<u>463</u>	<u>Rail</u>	<u>Rail</u>
Scenario 7: EATL Route 7	Shanghai (China) to Warsaw (Poland)	<u>8,937</u>	<u>446</u>	<u>6,300</u>	<u>569</u>	<u>Maritime</u>	<u>Rail</u>
Scenario 8: EATL Route 8	Krasnodar (Russia) to Kalinigrad (Russia)	<u>1,595</u>	<u>70</u>	<u>5,050</u>	<u>225.2</u>	<u>Rail</u>	<u>Rail</u>
Case Study /Car Manufacturer	Vesoul (France) to Kaluga (Russia)	<u>2,107</u>	<u>101</u>	<u>6,300</u>	<u>163</u>	<u>Rail</u>	<u>Rail</u>



Scenario Presentation

Scenario Presentation



Scenario Presentation

MARITIME TRANSPORT: Almaty (via Bandar Abbas port) - Istanbul (via Istanbul port)

Route	km	Cost(\$)	Time(hrs)
Almaty - Bandar Abbas port by	2873	2,300	71
Bandar Abbas port THC costs	-	150	-
Bandar Abbas port other costs	-	150	-
Bandar Abbas port - Istanbul port	6,711	1,650	25 days
Istanbul port THC costs	-	220	-
Istanbul port other costs	-	220	-
Istanbul port - Istanbul by road	20	300	1
<u>Total maritime transport</u>	<u>6,711</u>	<u>2,370</u>	<u>600</u>
<u>Total road transport</u>	<u>2,893</u>	<u>2,600</u>	<u>72</u>
TOTAL	9,604	4,970	672

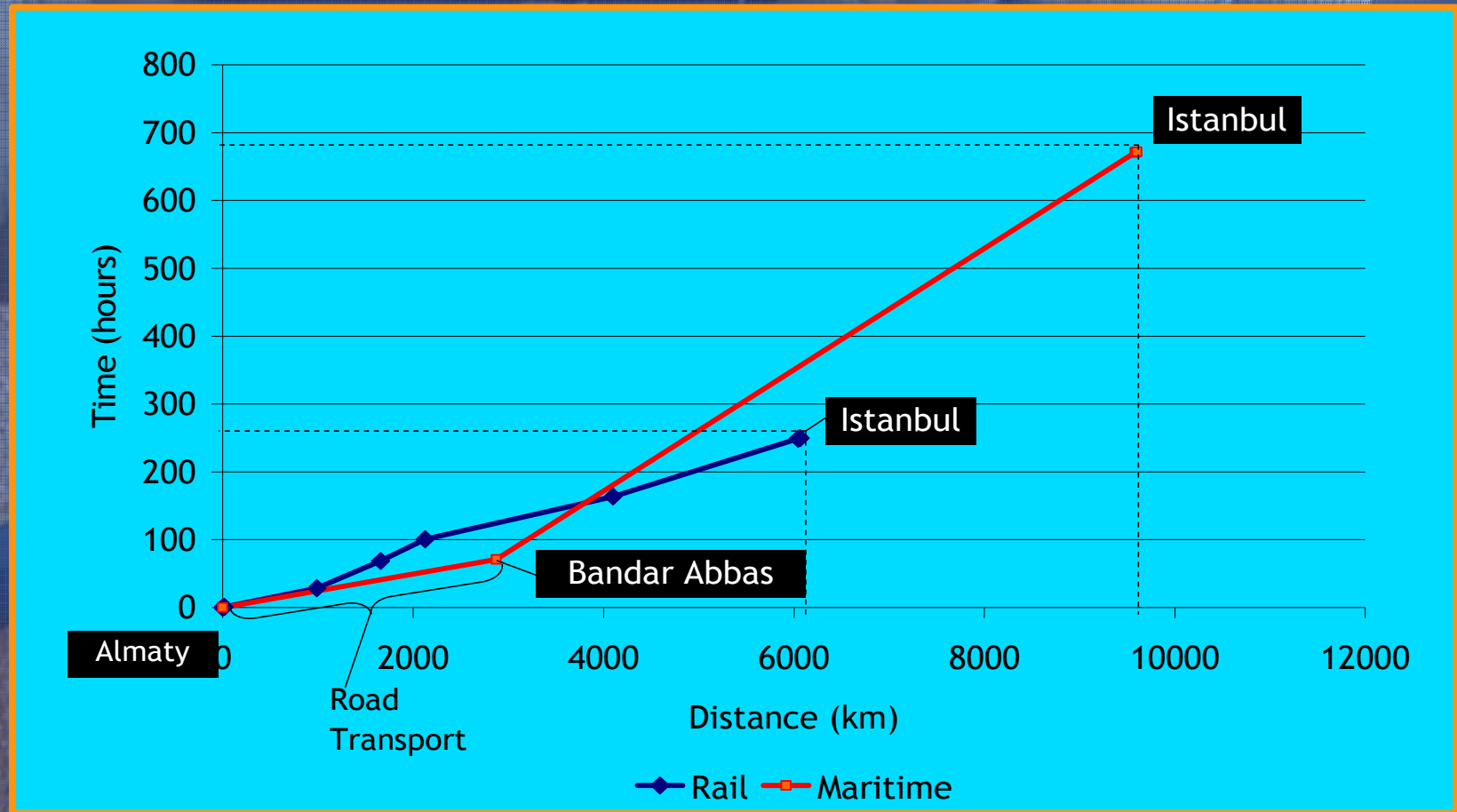


Scenario Presentation

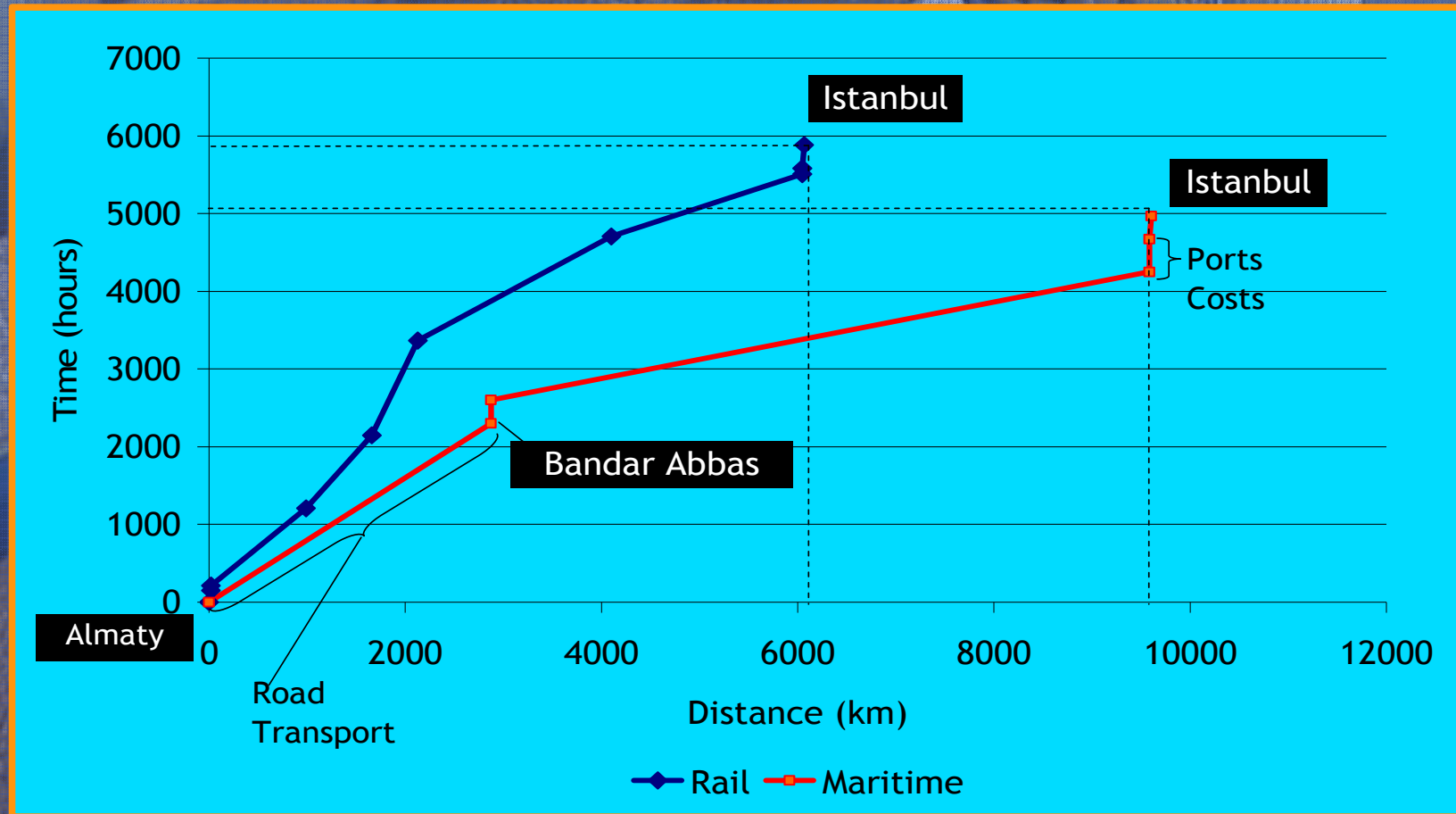


RAIL TRANSPORT: Almaty - Istanbul			
Route	km	Cost(\$)	Time(hrs)
Almaty - Almaty rail station by road	20	150	1
Almaty rail station loading cost	-	30	-
Almaty rail station other costs	-	30	-
Kazakhstan by rail	969	998	28
Uzbekistan by rail	670	938	40
Turkmenistan by rail	469	1,220	32
Iran by rail	1,972	1,340	63
Turkey by rail	1,945	800	85
Istanbul rail station unloading cost	-	30	-
Istanbul rail station other costs	-	45	-
Istanbul rail station - Istanbul by road	20	300	1
<u>Total rail transport</u>		<u>5,431</u>	
<u>Total road transport</u>	<u>40</u>	<u>450</u>	<u>2</u>
TOTAL	6,065	5,881	250

Scenario Presentation



Scenario Presentation





North South Corridor



EATL Route 5



5.	Buslovskaya - St. Petersburg (Port) - Volgograd - Astrakhan (Port) - Alya (Port) - Anzali (Port) - Rasht - Qazvin - Tehran - Qom - Meybod - Bafgh - Bandar Abbas (Port) (Anzali - Rasht - Qazvin section under construction)
5.a.	Astrakhan (Port) - Alya (Port) - Amirabad (Port) - Garmsar - Tehran
5.b.	Astrakhan (Port) - Samur - Yalama - Baku - Astara (Azerbaijan) - Astara (Iran) - Rasht (Astara - Astara - Rasht section under study)
5.c.	Astrakhan (Port) - Askarayskaya - Ganyuchikino - Makat - Beineu - Nukus - Uchkuduk - Bukhara - Chardzhou - Saraks - Sarakhs - Mashhad - Bafgh
5.d.	Alya (Port) - Aktau (Port) - Beineu
5.e.	Tehran - Qom - Arak - Ahvaz - Bandar Emam (Port)
5.f.	Tehran - Kashan - Badrud - Esfahan - Shiraz - Bushehr (Port) (Esfahan - Shiraz - Bushehr planned)
5.g.	Bafgh - Kerman - Fahraj - Chabahar (Port) (Fahraj - Chabahar planned)
5.h.	Murmansk (Port) - St. Petersburg

Proposed route: Russian Federation (Saint Petersburg - Moscow) - Iran (Tehran - Bandar Abbas) - India (Mumbai)

