

# **New Silk Road by Rail**

**China ↔ Czech Republic / Slovakia**

**Radim Procházka, Vienna, 22.4.2015**

# New Silk Road by rail



## Green Line on the Blue Planet

# External Costs of Transport

Study of:

CE Delft, INFRAS, FRAUENHOFER

(Reported in Delft, Nov. 2011)

# External Costs of Transport Categories

- Accidents
- Air Pollution
- Climate Change
- Noise
- Congestion

# External Costs by Transport Modes

As per study of CE Delft external costs represent per transport mode EUR/1.000 tkm:

ROAD: 50,5 EUR/1.000 tkm

RAIL: 7,9 EUR/1.000 tkm

SEA: 11,2 EUR/1.000 tkm

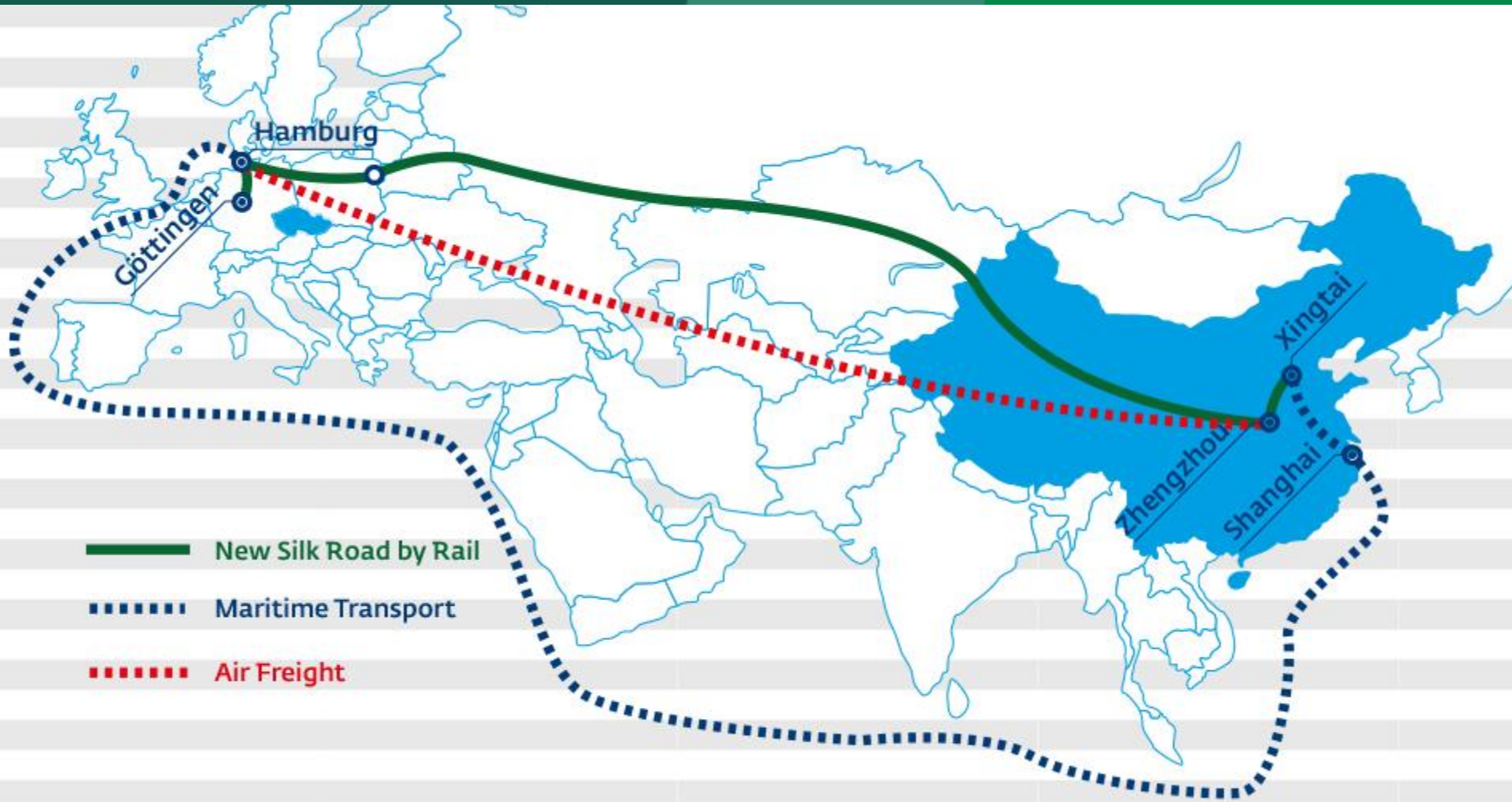
AIR: 57,1 EUR/1.000 tkm

# Example of Calculation

Example of calculation of external costs for transport of a shipment 1 x 40 HC, 15 tons brutto in Wesbound:

Xingtai (CN) – Göttingen (DE)

# Map of Routes by Main Transport Mode



# Logistics chain with sea transport

		MODE	WEIGT(t)	KM	EUR/1 tkm	External Costs EUR
1	XINGTAI-ZHENGZHOU	ROAD	15	314	0,0505	238
2	ZHENGZOU-SHANGAI	RAIL	15	963	0,0079	114
3	SHANGHAI-HAMBURG	SEA	15	19 850	0,0112	3 334
4	HAMBURG-GÖTTINGEN	ROAD	15	307	0,0505	233
					Totally	3 919
					Rounded	<b>3 900</b>



# Logistics chain New Silk Road

		MODE	WEIGHT(t)	KM	EUR/1 tkm	External Costs EUR
1	XINGTAI - ZHENGZHOU	ROAD	15	314	0,0505	238
2	ZHENGZHOU – HAMBURG	RAIL	15	10 214	0,0079	1 210
3	HAMBURG - GÖTTINGEN	ROAD	15	307	0,0505	233
					Totally	1 681
					Rounded	<b>1 700</b>

# Logistics chain Airfreight

		MODE	WEIGHT(t)	KM	EUR/1 tkm	External Costs EUR
1	XINGTAI - ZHENGZHOU	ROAD	15	314	0,0505	238
2	ZHENGZHOU - HAMBURG	AIR	15	7 870	0,0571	6 741
3	HAMBURG - GÖTTINGEN	ROAD	15	307	0,0505	233
					Totally	7 212
					Rounded	<b>7 200</b>

# Comparison of External Costs

ROUTE XINGTAI (CN) - GÖTTINGEN	SHIPMENT	EXTERNAL COSTS EUR/SHIPMENT	Δ EUR
NEW SILK ROAD	1x40ft 15 tons	1 700	
SEA TRANSPORT	1x40ft 15 tons	3 900	2 200
AIR FREIGHT	1x40ft 15 tons	7 200	5 500

# Comparison of Total Costs

SHIPMENT OF 1 x40ft 15 tons XINGTAI (CN) – GÖTTINGEN (DE) – EUR/SHIPMENT			
ROUTE	FREIGHT COSTS	EXTERNAL COSTS	TOTALLY
NEW SILK ROAD	8 300	1 700	10 000
SEA FREIGHT	2 800	3 900	6 700
AIR REIGHT	21 000	7 200	28 200
<p><math>\Delta</math> NSR – SEA = 3 300 EUR</p> <p>target of reduction of total costs of NSR</p>			

# Strategy to mitigate inhibiting factors

- Construction of new lines
- Upgrading and modernizing existing lines
- Simplification of border procedures
- Sophisticated equipment
- Stress on sustainability
- Marketing
- Competitive rates (main task for railways CR, KZCH, RŽD, BČ, EU railways)

# Thank you for your attention

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