



INTERNATIONAL UNION  
FOR ROAD-RAIL  
COMBINED TRANSPORT

# Multimodal Sustainable Transport Conference

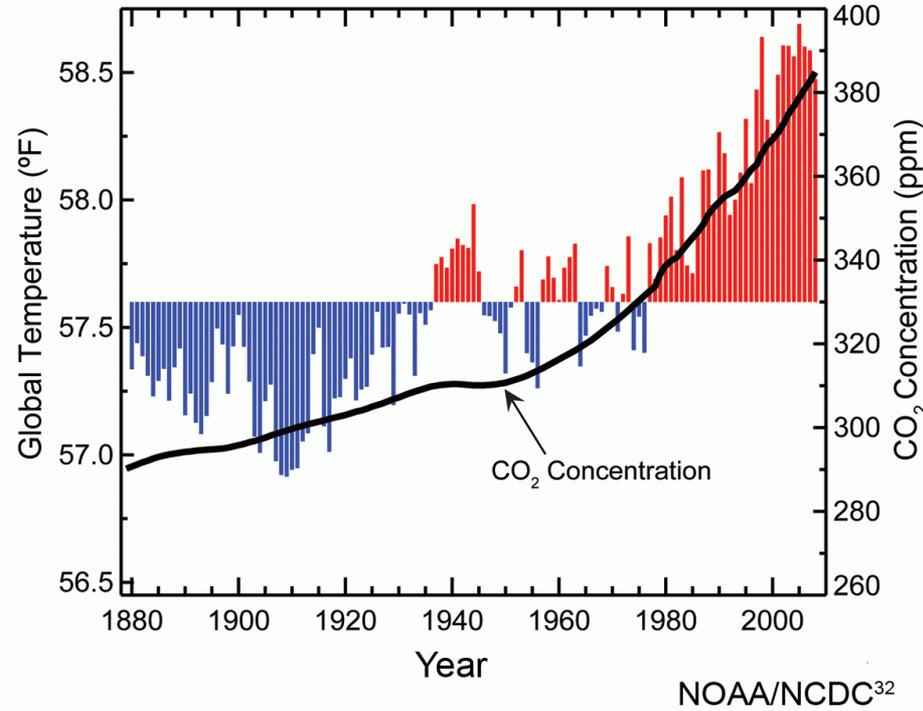
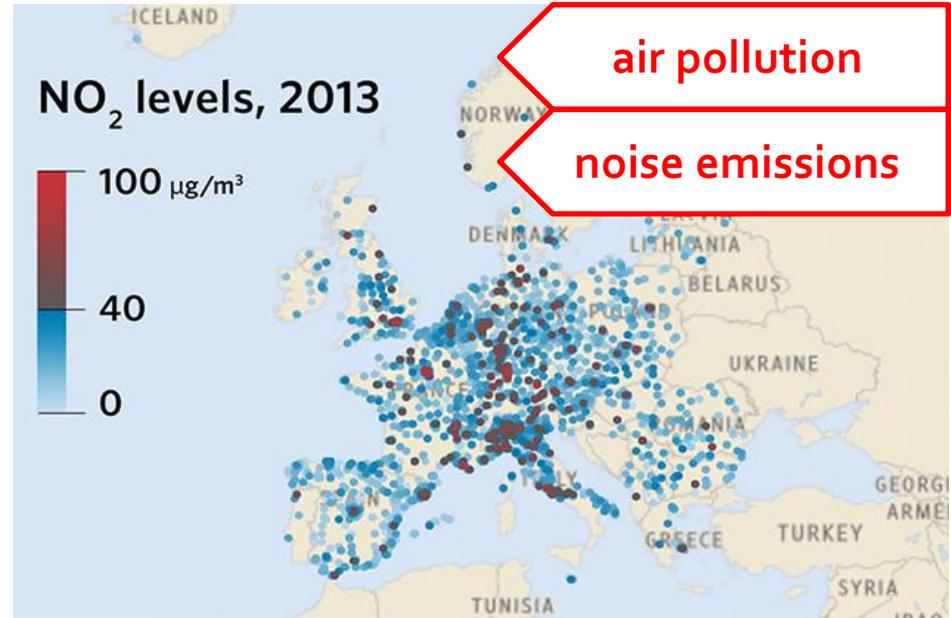
## INTERMODAL TRANSPORT: THE LOW HANGING FRUIT



Ralf-Charley SCHULTZE  
President

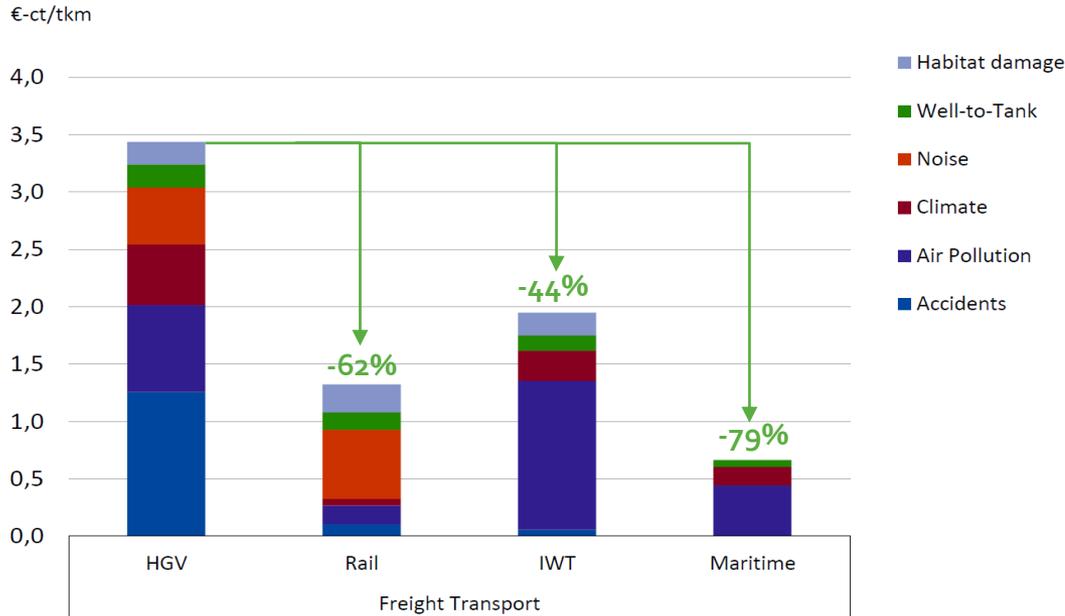
BRUSSELS 17 December 2018

# The externality challenge of transport





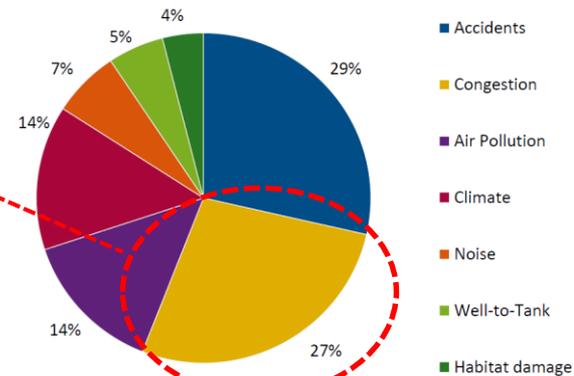
## Average external costs per mode at EU28 level - Freight



Non-road modes can deliver  
 an instant benefit of  
**44-79% fewer**  
 harmful (external) effects  
*- even without factoring  
 road congestion*

10

Figure excludes external congestion costs



## Multimodal transport

*Goods transportation that employs more than one mode of transport.*

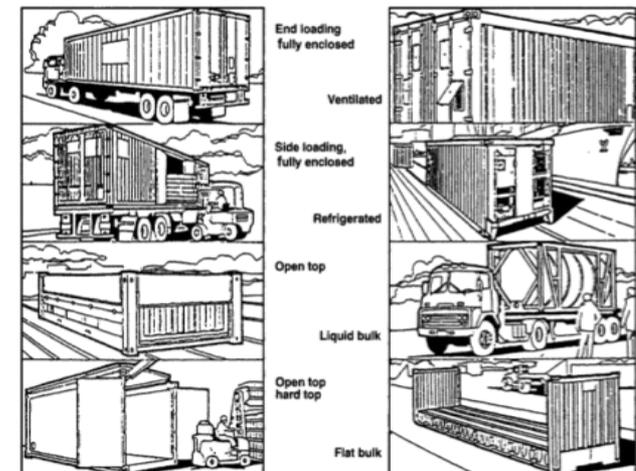
## Intermodal transport

*Multimodal goods transportation where the cargo is carried in an intermodal loading unit throughout the entire journey.*

## Combined transport

*Intermodal goods transportation where the road legs of the journey are kept to a minimum, while the longest possible section of the distance is covered by non-road modes of surface transport.*

- **MULTIMODAL** = more than one mode of transport for a single assignment
- **INTERMODAL** = cargo held in a single *intermodal loading unit* from origin to destination
- **COMBINED TRANSPORT** = intermodal transport where the road legs are the shortest possible



## Efficient transshipment:

- 4 minutes to unload/load a rail wagon
- Electrically powered
- Superior labour efficiency (automatization possible)
- Safe and secure (no spills, no theft)

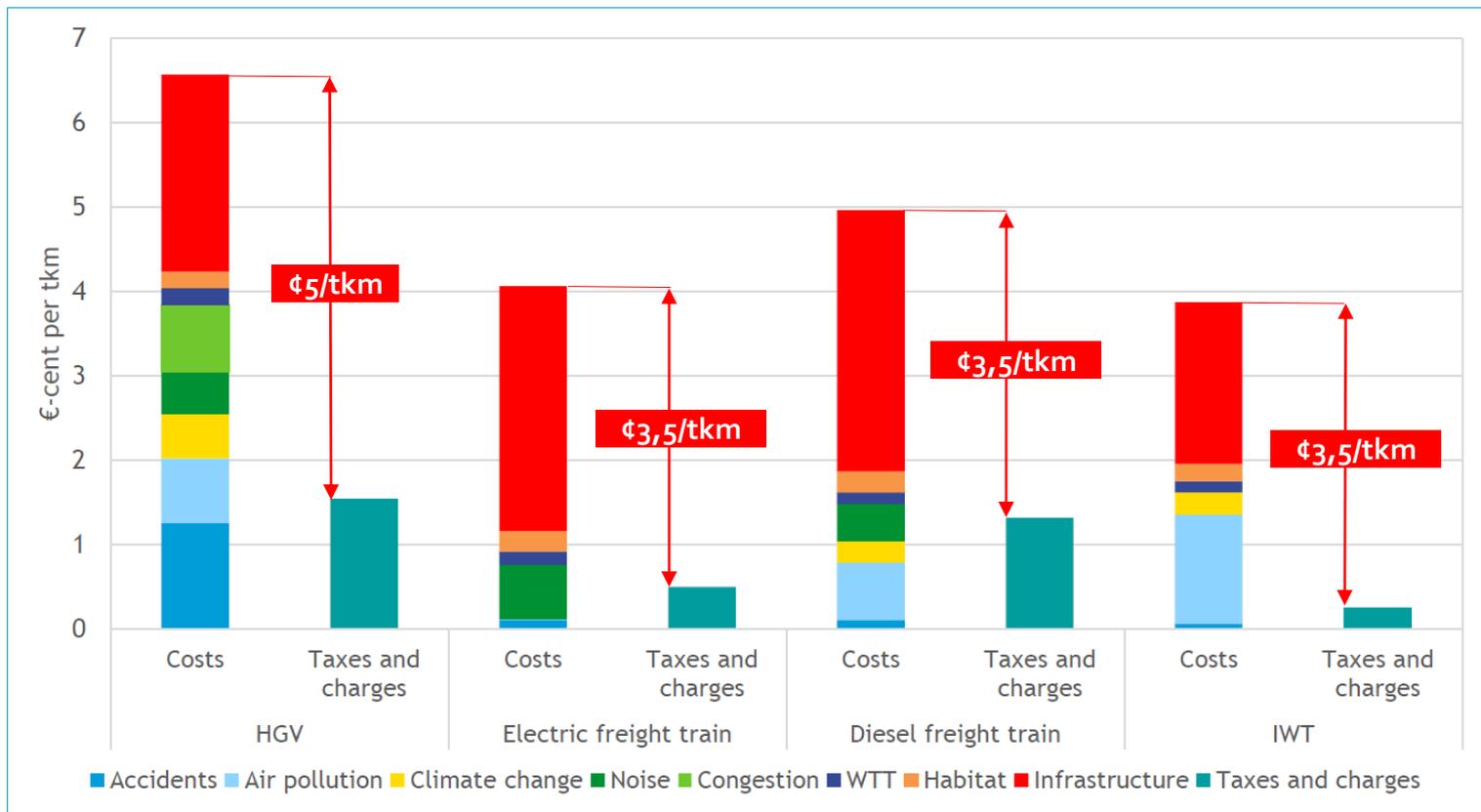
## Additional benefits:

- Excellent asset utilization
- Low-cost buffer storage possibility (stacking)





## Coverage of average cost - freight transport modes (per tkm)



**On which mode to spend public money from society's point of view?**

# The alternatives: which is optimal?



## ISTANBUL-DUISBURG GreenBridge transport solutions



## ISTANBUL-DUISBURG Alternative solutions



## ISTANBUL-DUISBURG Alternative solutions



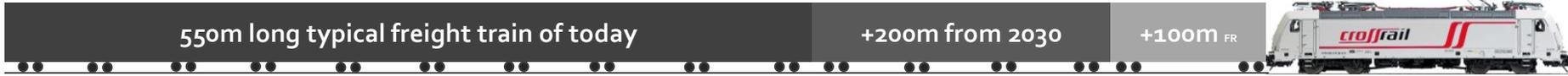
## ISTANBUL-DUISBURG Alternative solutions



Mode	Distance (KM)	CO2 Emissions (Kg / CO2)	TOTAL CO2 (Kg / CO2)
Ship	2.103 KM	443 Kg / CO2	810 Kg / CO2
Train	2.103 KM	271 Kg / CO2	
Truck	2.103 KM	96 Kg / CO2	
Ship	0 KM	0 Kg / CO2	2691 Kg / CO2
Train	0 KM	0 Kg / CO2	
Truck	2.800 KM	2.691 Kg / CO2	
Ship	2.103 KM	843 Kg / CO2	1871 Kg / CO2
Train	0 KM	0 Kg / CO2	
Truck	1.070 KM	1.028 Kg / CO2	
Ship	2.103 KM	843 Kg / CO2	1210 Kg / CO2
Train	2.103 KM	271 Kg / CO2	
Truck	2.103 KM	96 Kg / CO2	

**A good solution: 45-foot palletwide high cube container (with a 34 pallet capacity).**  
 ---superior even if adding the carbon footprint of the 10kWh energy need of the transshipment

# The intermodal perspective: investment promises plenty



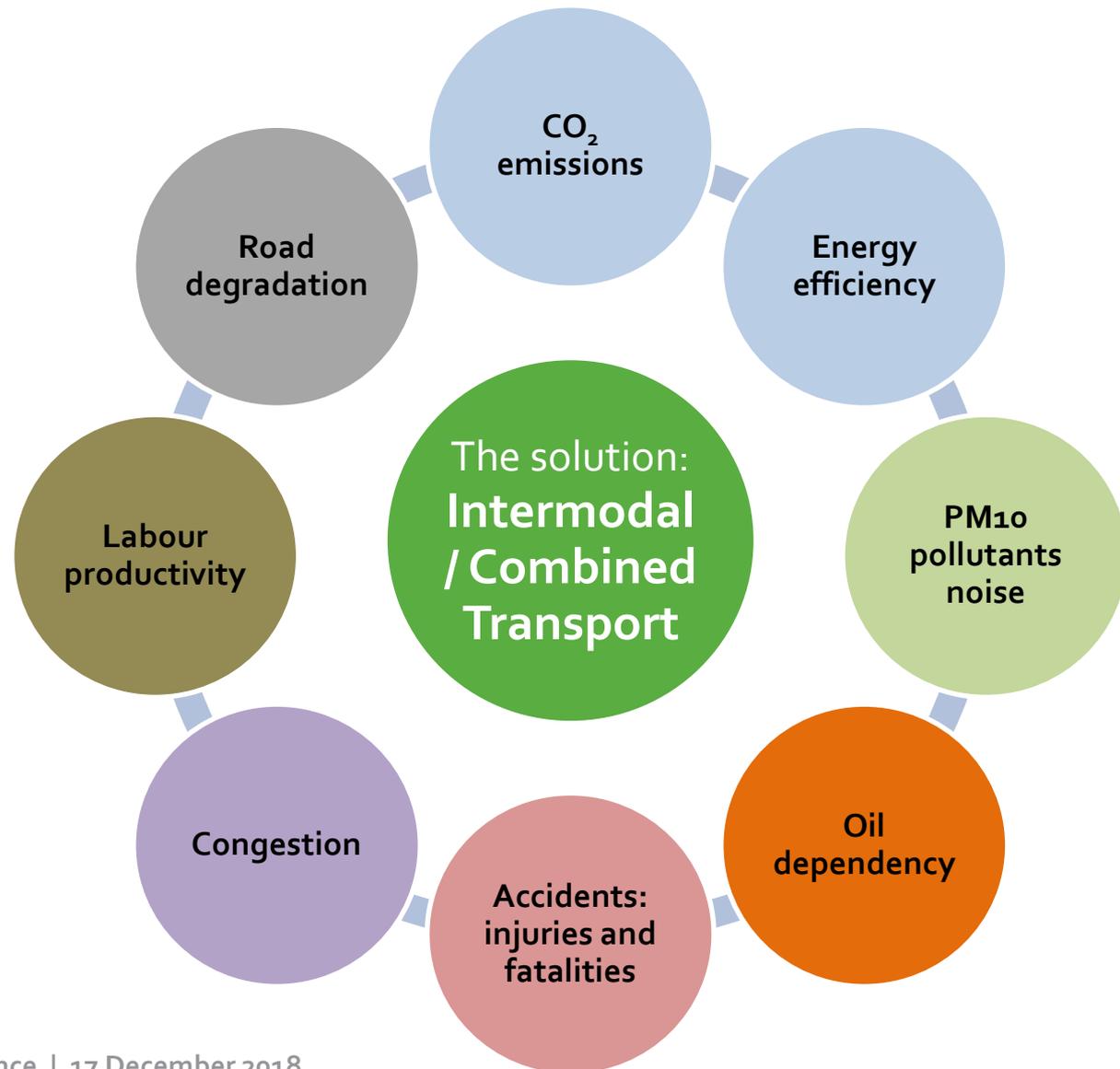
	Today's train	Tomorrow's train
Length	550 meters	750/850 meters
Number of wagons	18	25/28
Slot for 45ft ILU	36	50/56
Number of pallets	1224	1700/1900
Gross weight	1200t	2000t

EU Pallet dimensions



Larger trains guarantee performance, energy savings and even lower carbon footprint.  
+ disk brake bogies promise a permanent solution to the rail noise externality.

- **Climate:** CO<sub>2</sub> and energy efficiency
- **Environment:** air and noise pollution, vibration
- **Public security:** oil dependency
- **Safety:** accident injuries/fatalities and material losses
- **The economy:** GDP loss due to congestion
- **Employment:** labour productivity
- **Infrastructure:** road degradation, spatial constraints and habitat destruction





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THANK YOU  
For your attention

