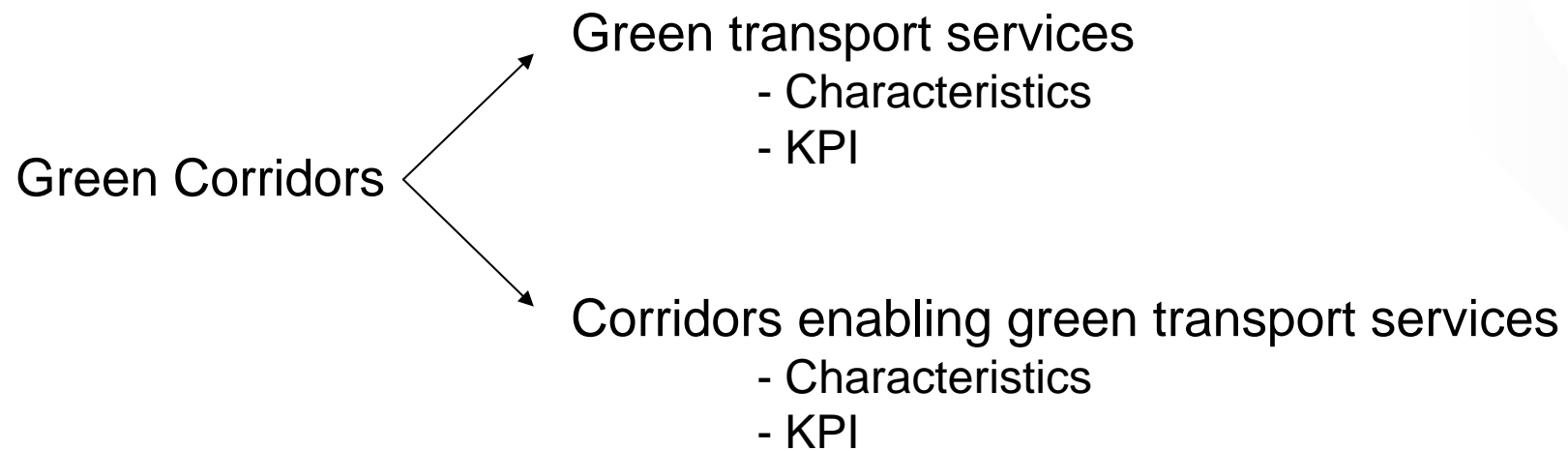


# How to assess environmental performance in green corridors

Magnus Swahn  
Erik Van Agtmaal



# Agenda



# What is green in corridors?

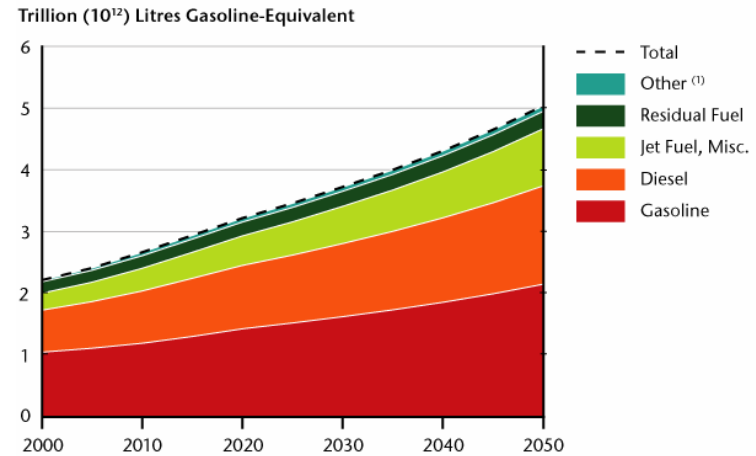
	Local (PM, HC)	Regional (NOx, SOx)	Global (GHG)	Energy (Fossil)
Relative numbers				
Absolute numbers				

## Other external effects

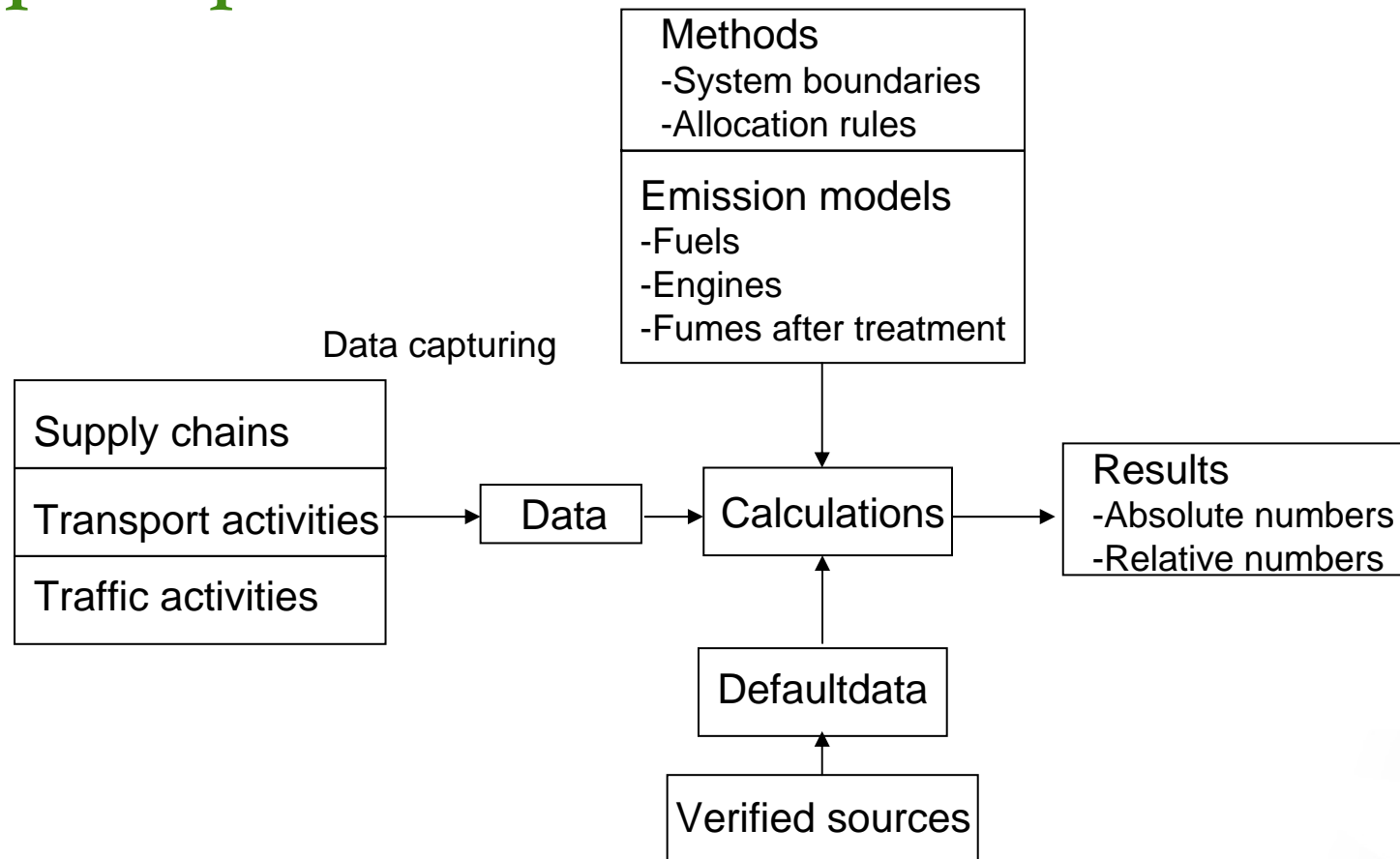
- Noise
- Land use
- Congestion
- Accidents
- Infrastructure
- etc

## Energy demand

Transport 97% dependence on fossil fuels

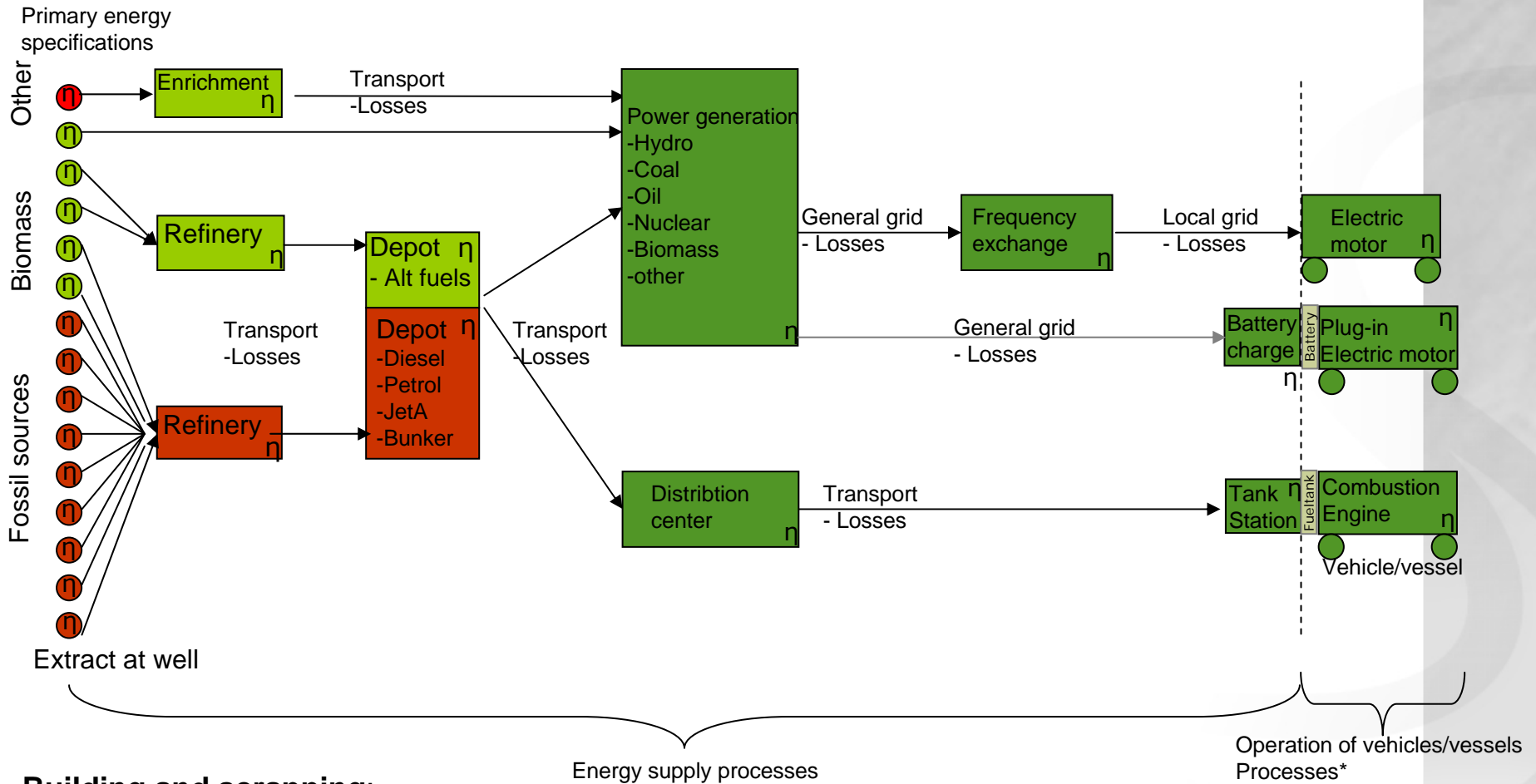


# Environmental performance calculation principle



# Energy and CO<sub>2</sub> emissions

Performance

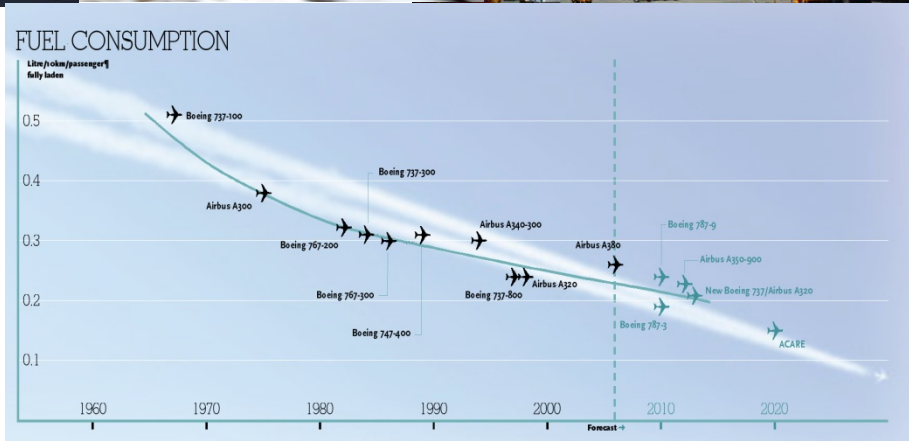
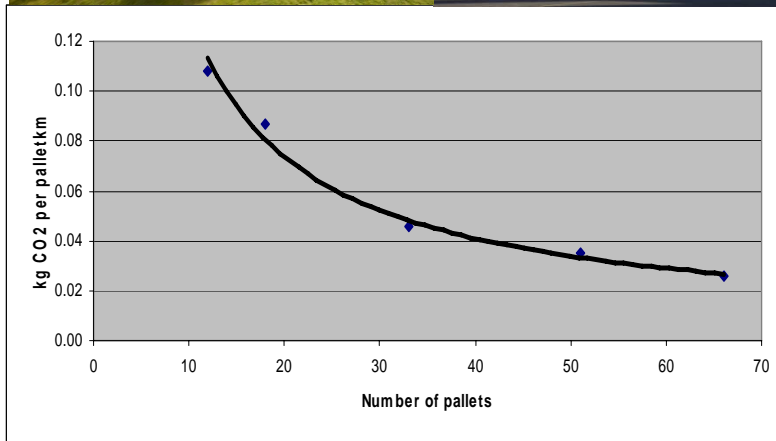


**Building and scrapping:**  
 Fuel production sites  
 Infrastructure  
 vehicles/vessels



# Green Corridors Principle

## - Performance by size of transport mode

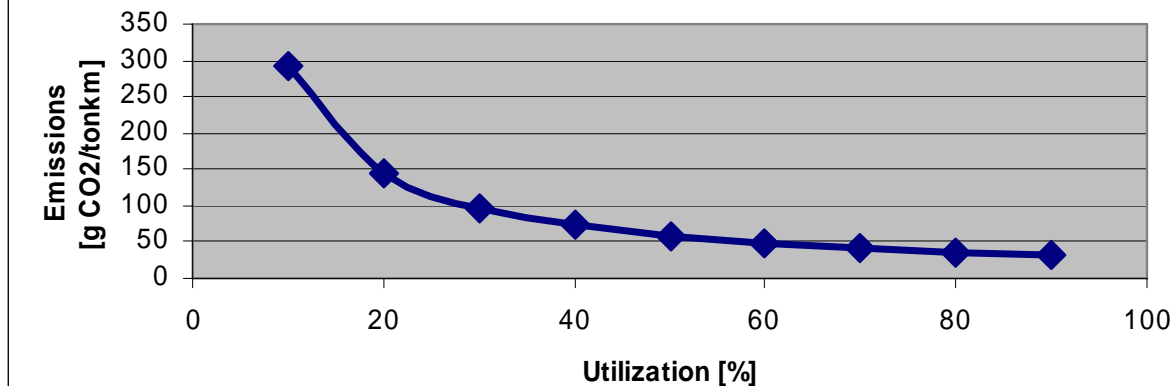


# Green Corridors Principle

- Performance by utilization and optimization



CO2 performance of a trailer with a Euro 4 tractor



# Green Corridors Principle

- Performance by fuel consumption



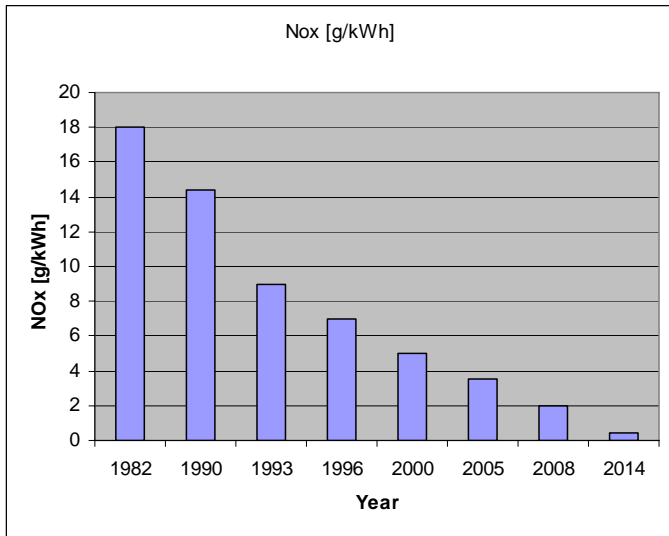
Factors affecting  
fuel consumption

- Size
- Load
- Speed
- Distance
- Driver
- Traffic
- Topography
- Thermo equipment
- Motor/Engine
- Fuels quality



# Green Corridors Principle

- Performance by techniques and fuels life cycle”



Truck engine regulations



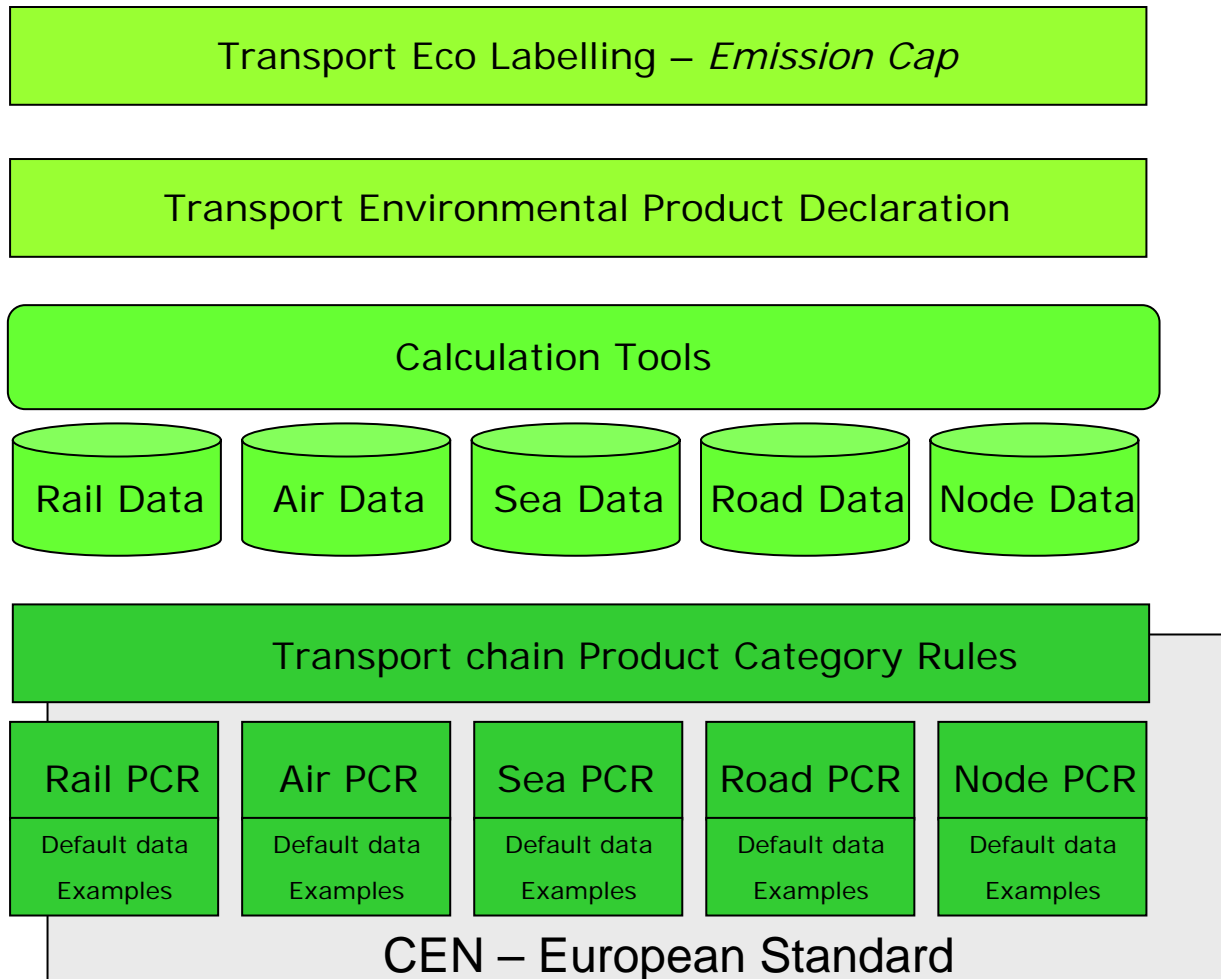
LNG-ship

- NOx -89 %
- CO<sub>2</sub> – 20 %

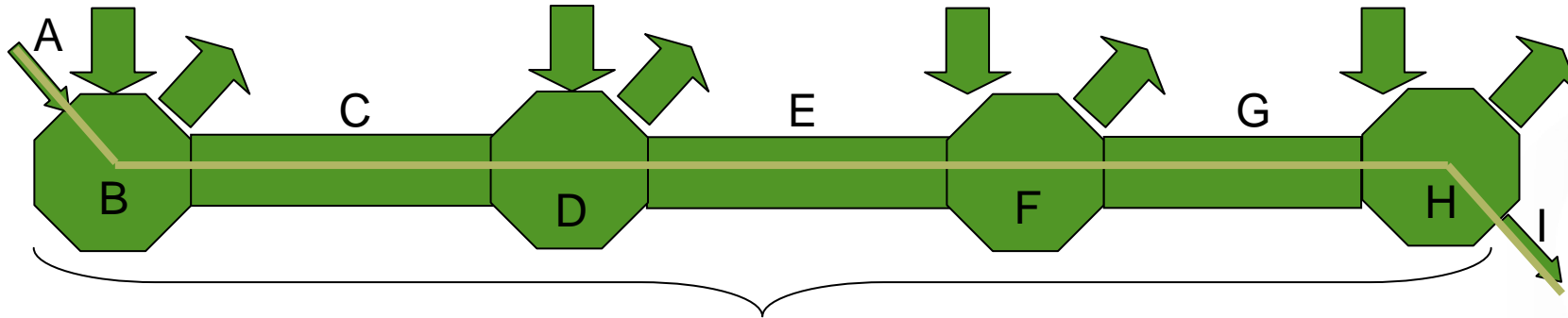


# NTM platform for transport evaluation

- Energy and emissions



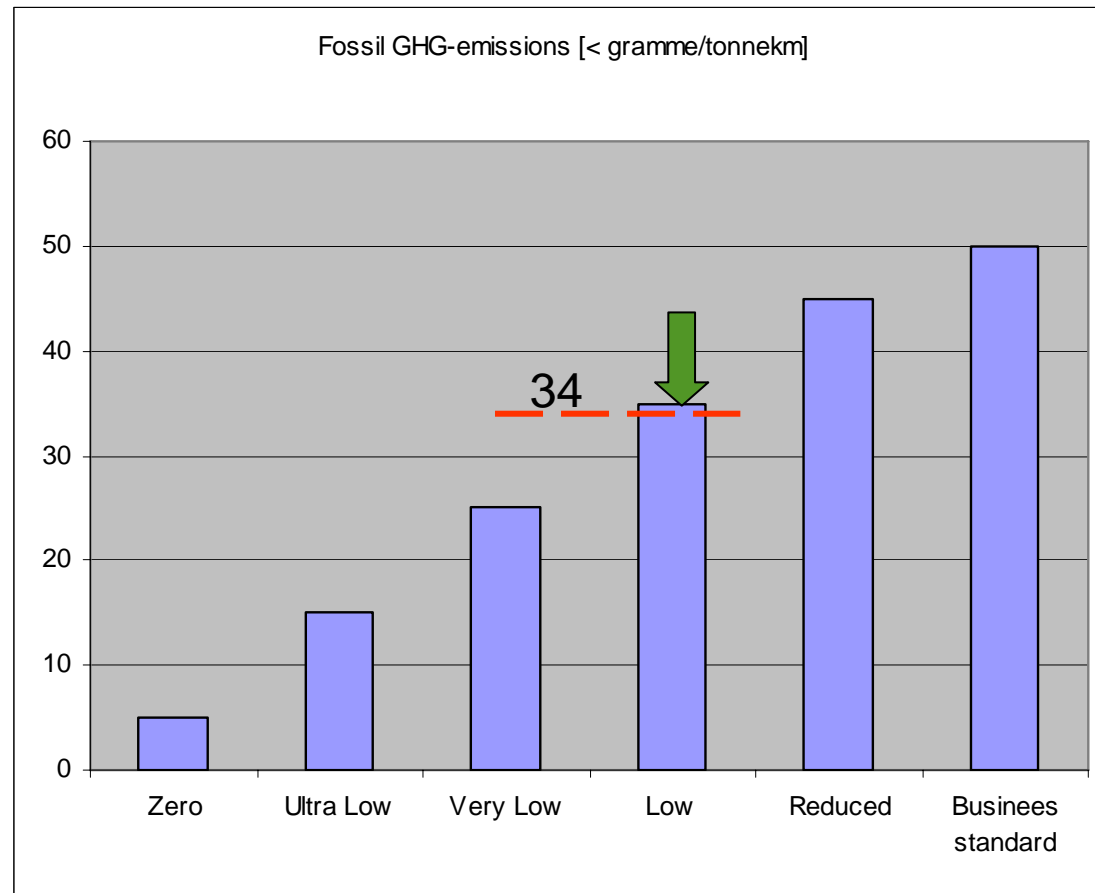
Performance



	Transport mode	[g/tkm]	[g/tonne]	Shipment [tonne]	Distance [km]	Transport work [tkm]	Total [kg]
A	Parcel truck	458		0.1	50	5	2.29
B	Terminal		100	0.1			0.01
C	Truck	59		0.1	300	30	1.77
D	Terminal		50	0.1			0.005
E	EU-train	15		0.1	800	80	1.2
F	Terminal		2	0.1			0.0002
G	Truck	59		0.1	300	30	1.77
H	Terminal		2	0.1			0.0002
I	Parcel truck	458		0.1	30	3	1.374
Total					1480	148	8
						KPI [g/tkm]	57
							34



# Labelling relative performance



The service in corridor fulfills "Low GHG-emission transport service"



**Thank you for your attention**

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www.ntmcalc.org