

Urban freight data and quantified impacts of projects in Europe

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Translating facts into vision



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- Introduction
- Urban freight data
- Quantified impacts of projects
- Prospects for the future
- Conclusions and recommendations

Background: quantitative information on urban freight transport is not easily available.

Problems known in advance:

- Availability of data and evaluations
- Quality of data and evaluations
- Limited comparability (different objectives, survey areas, methodologies, indicators...)
- Some data not publicly available
- Unclear what the “right” indicators are
- Freight still unknown by some decision makers

However, figures can be powerful persuasion tools – the key to raising awareness. And it becomes more and more important to take action!

Therefore the BESTUFS team has developed two reports aiming to provide useful, inspiring information for anyone interested in urban freight transport data and quantified impacts of urban freight projects in Europe.

- Identification of existing material
- Data gathering: partners helped to collect data and examples
- Reporting
- Validation of both report by experts in two dedicated meetings

Quantification of Urban Freight Transport Effects I

The first report, "Quantification of Urban Freight Transport Effects I" (2006) provides information from surveys and statistics on:

- Freight volumes and commodities in urban areas
- Urban freight transport fleet
- Urban deliveries
- Economy
- Environment
- Safety

Quantification of Urban Freight Transport Effects I

HGVs and LGVs as % of all motor vehicles

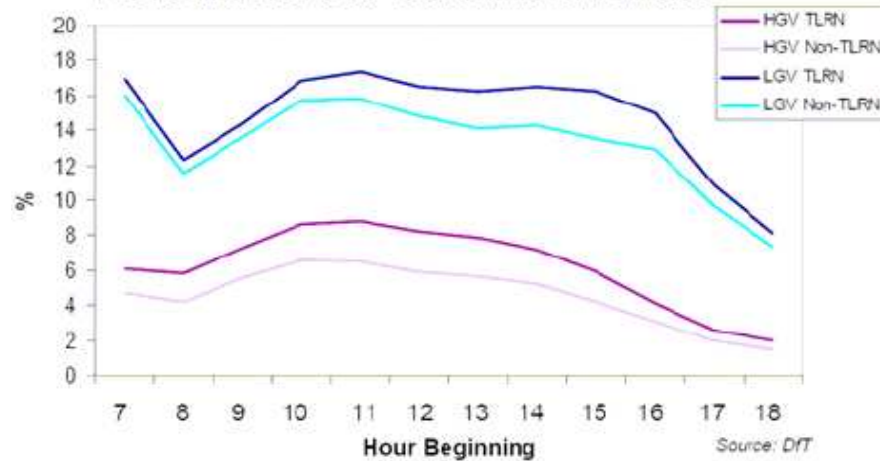


Table 4-11 Mean number of weekly core goods deliveries by vehicle type

Business type	Deliveries	Articulated	Rigid	Van	Car
Food retail	16.4	21.0%	55.8%	23.2%	-
Clothing retail	4.8	32.0%	42.0%	26.0%	-
Other retail	8.6	7.5%	38.4%	49.5%	4.5%
Restaurant	3.0	57.1%	14.3%	14.3%	14.3%
Public house	5.0	-	70.0%	30.0%	-
Hotel	24.5	-	100.0%	-	-
Banks	5.3	-	-	100.0%	-
Other Services	9.7	5.3%	21.2%	65.7%	7.8%
Warehousing	36.8	21.8%	44.9%	33.3%	-
Manufacturing	24.1	27.2%	34.3%	38.5%	-
Personal Services	2.3	-	25.0%	60.0%	15.0%

Source: Effects of Freight Movements in Winchester

Table 5-4 Time of goods delivery in The Netherlands

Time frame	Utrecht	Amsterdam	Rotterdam
7:00 to 12:00	77%	82%	80%
12:00 to 18:00	22%	7%	19%
18:00 to 23:00	1%	0%	0%
23:00 to 7:00	0%	11%	0%



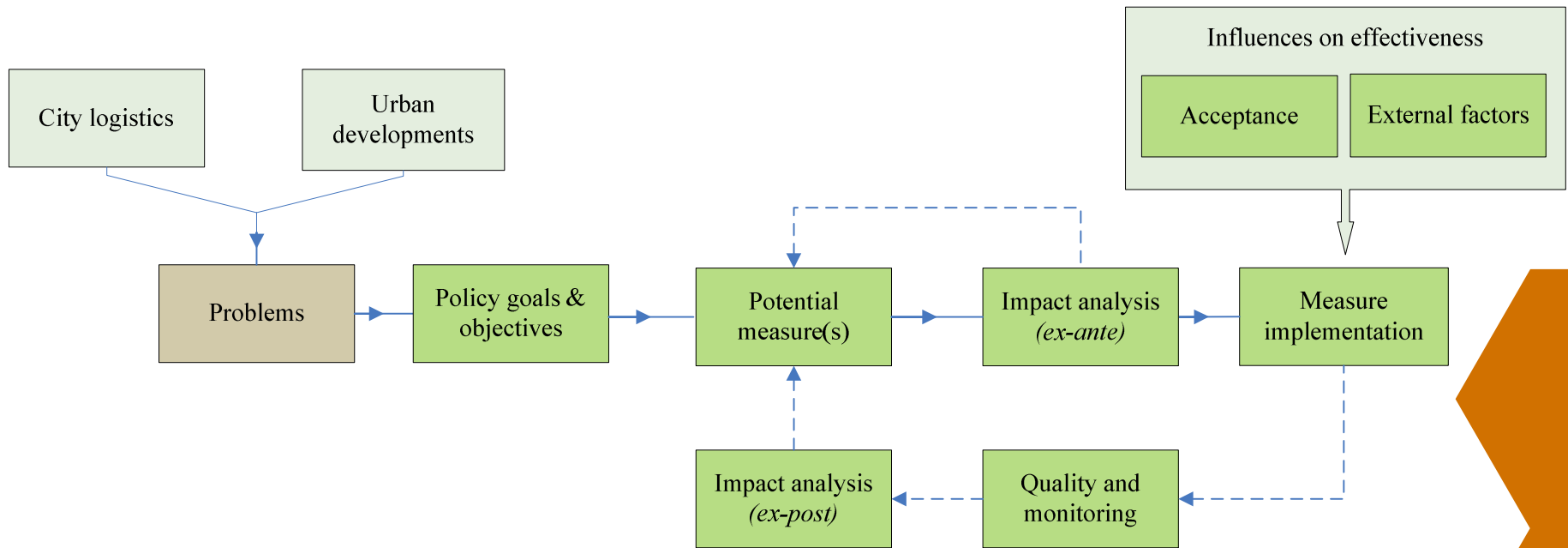
Source: Volvo truck corporation environmental affairs, June 2005

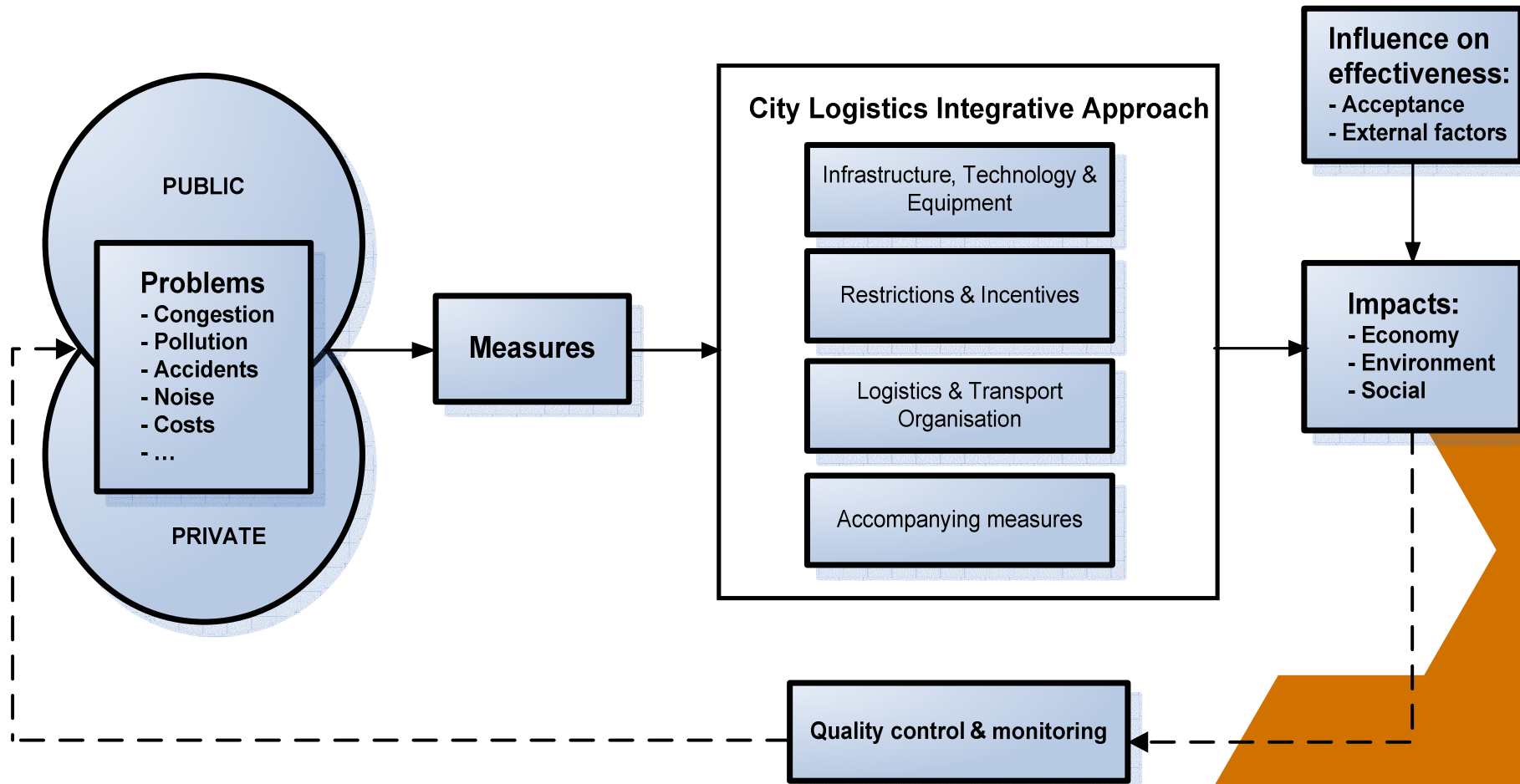
Quantification of Urban Freight Transport Effects II

The second report, “Quantification of Urban Freight Transport Effects II” contains information on the impacts of urban freight measures and projects on:

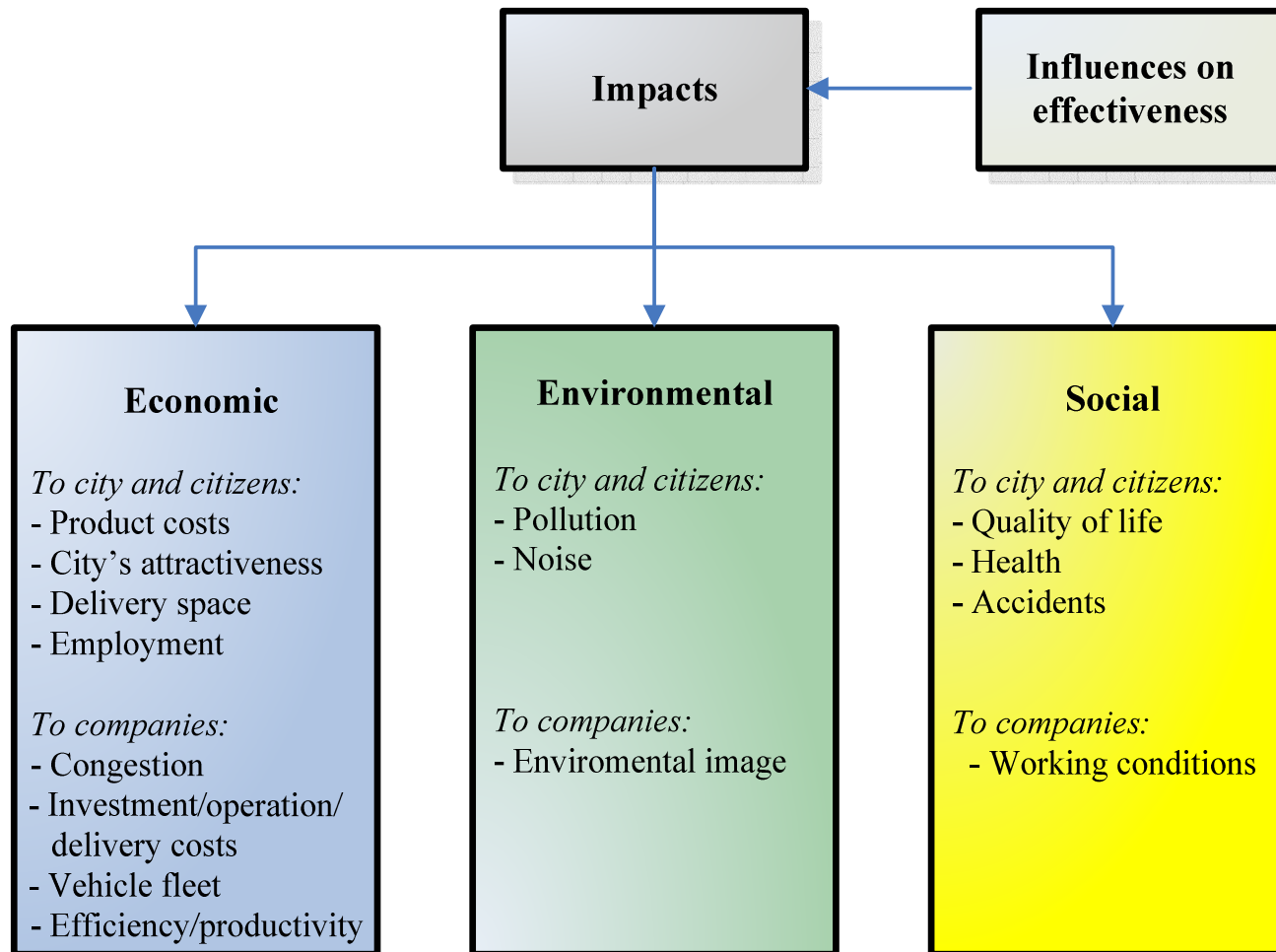
- Economy
- Environment
- Social

(the three pillars of sustainability)





Impacts of measures



Single and multiple measures

Often, cities implement different measures at the same time. Report presents examples as:

- Single measures: one implemented measure
- Multiple measures: (near) simultaneous implementation of several measures (e.g. Urban Distribution Centre + Low Traffic Zone + incentives)

Collected information

- Start date
- Current status
- Parties involved
- Description
- Measure's objective
- Additional information (acceptance, success factors, etc.)
- Impacts:
 - ◆ Economic
 - ◆ Environmental
 - ◆ Social impact

- Packstation pick-up point
- PIEK: technology for quiet distribution
- Night distribution Barcelona
- Low emission zone Utrecht
- Heavy vehicle fee Switzerland
- CITYPORTO Padua
- Impacts of access restrictions
- Environmental zone Gothenburg



Economy	<ul style="list-style-type: none">■ Low cost for cities, eventually infrastructure adjustments■ Better service availability for customers
Environment	<ul style="list-style-type: none">■ Reduction of unnecessary trip in city centre: a study in Cologne 2006 (29 Stations installed) showed that 35,000 vehicle km can be saved annually■ Less pollution and energy consumption
Social	<ul style="list-style-type: none">■ Customer satisfaction increasing■ Improved quality of life for citizens

PIEK: quiet distribution in evening and at night



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Supermarket pilot 2007

Pilots in 2007 with evening distribution: results show large reduction in travel time, fuel consumption and emissions.

Tilburg - Eindhoven	Before	After
Distance:	35 km	35 km
Trip duration:	1:30	0:30
Yearly distance:	210.000 km	210.000 km
Type of vehicle:	Volvo FH400	Volvo FH400
Fuel usage:	43 litres	33 litres
CO2	244 ton	187 ton
HC	4 kg	4 kg
Nox	633 kg	486 kg
PM10	10 kg	7 kg



Barcelona night-time deliveries

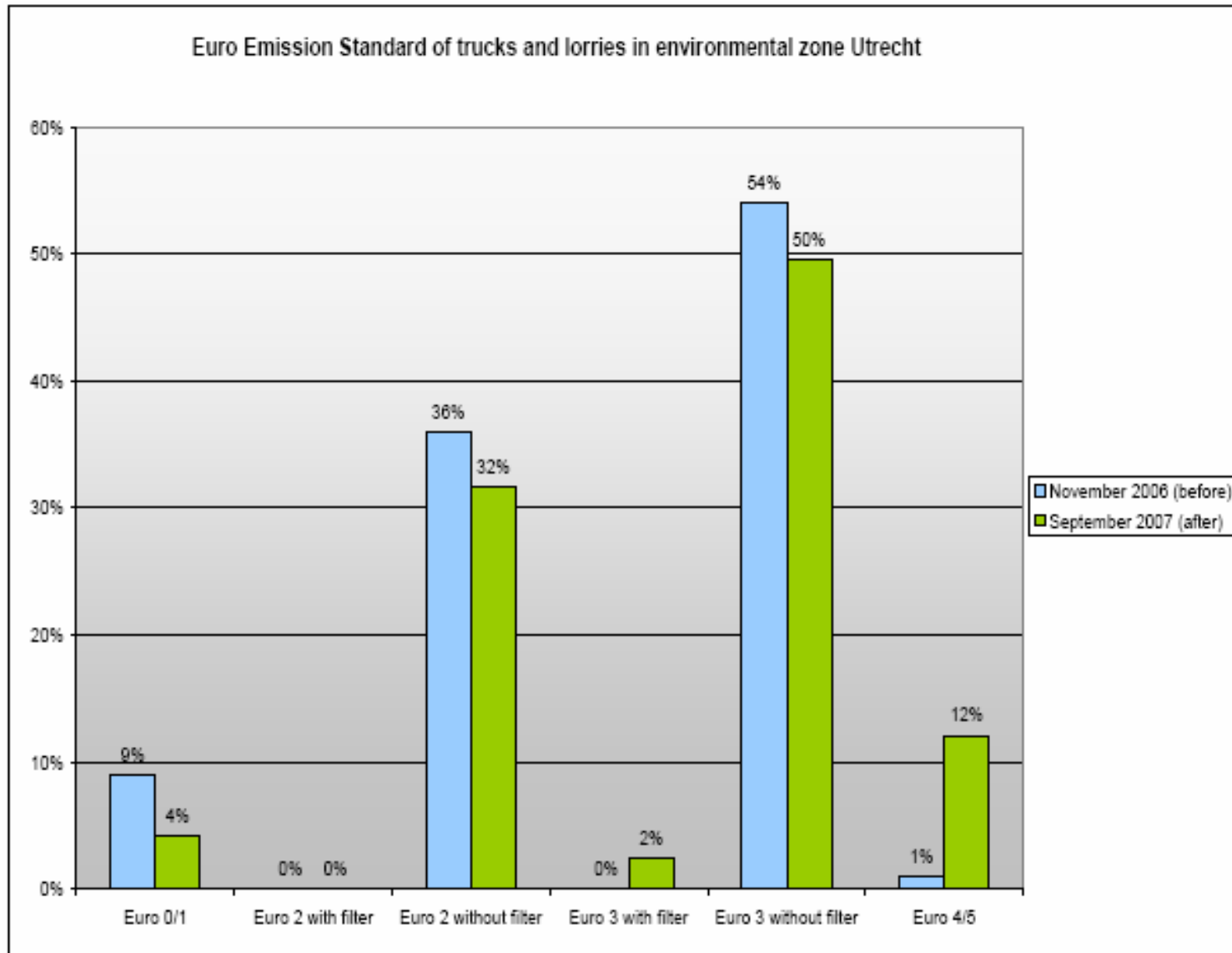


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Barcelona night-time deliveries

<p>Economic impact(s):</p>	<ul style="list-style-type: none"> • Return on investment: 3 years • 7 12T trucks during day time could be replaced by 2 40T trucks during the night • Additional labour cost (night-working bonus) • For 7 points delivered cost savings of about 6.000 € per month
<p>Environmental impact(s):</p>	<p>Results of measurements of noise due to unloading activities.</p> <p>Inside buildings:</p> <ul style="list-style-type: none"> • min value 23.5 dB(A) [+ 0.3 dB(A)] • max value 33.4 dB(A) [+/- 0] <p>On-street:</p> <ul style="list-style-type: none"> • max value 52.2 dB(A) [+ 0.1 dB(A)]
<p>Social impact(s):</p>	<ul style="list-style-type: none"> • Drivers (and shop owners) need to work during night time • The reactions of the residents nearby the shops which are delivered during night time are very positive – no complaints occurred.

Low emission zone Utrecht



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Heavy vehicle fee Switzerland

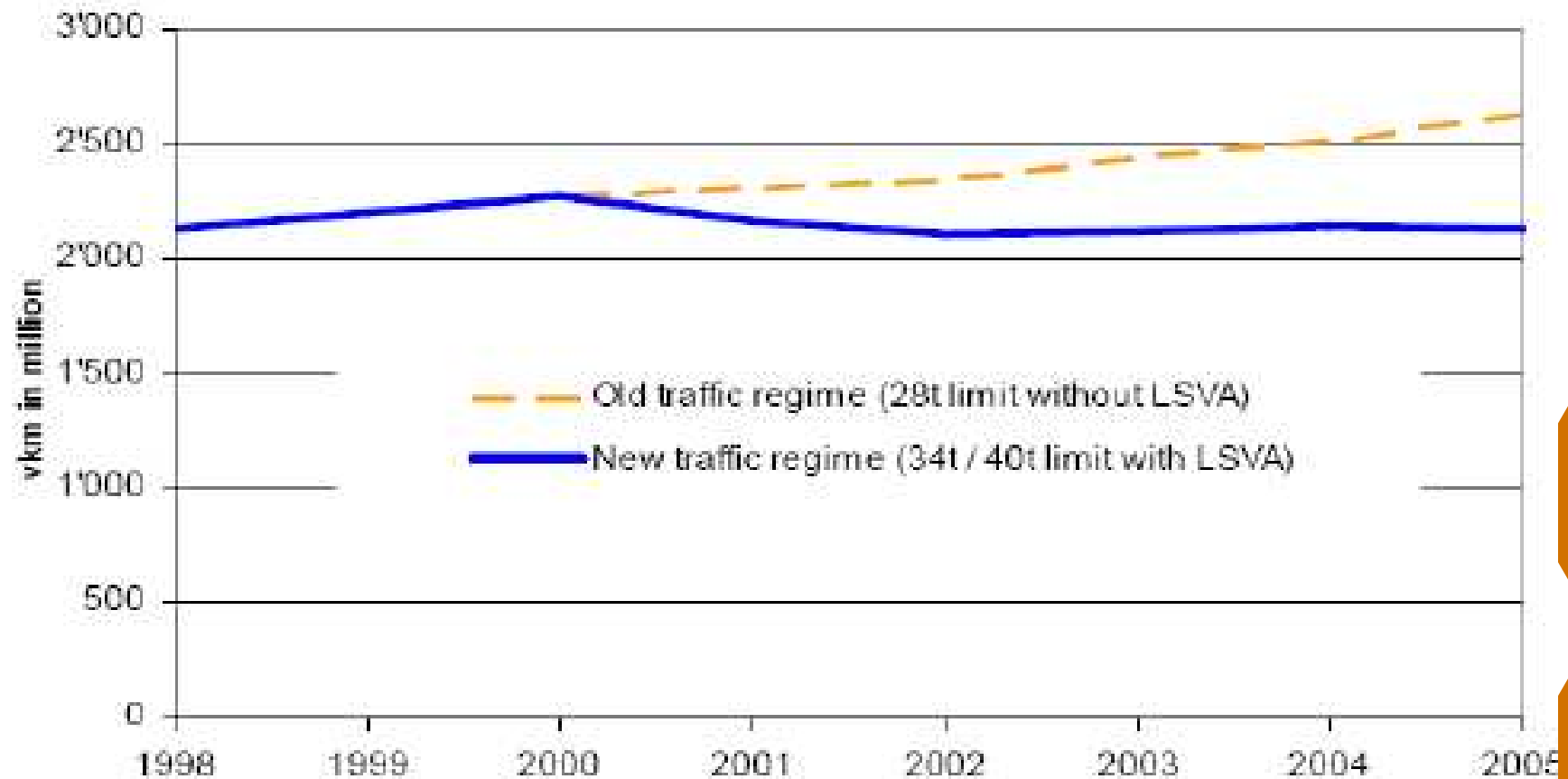
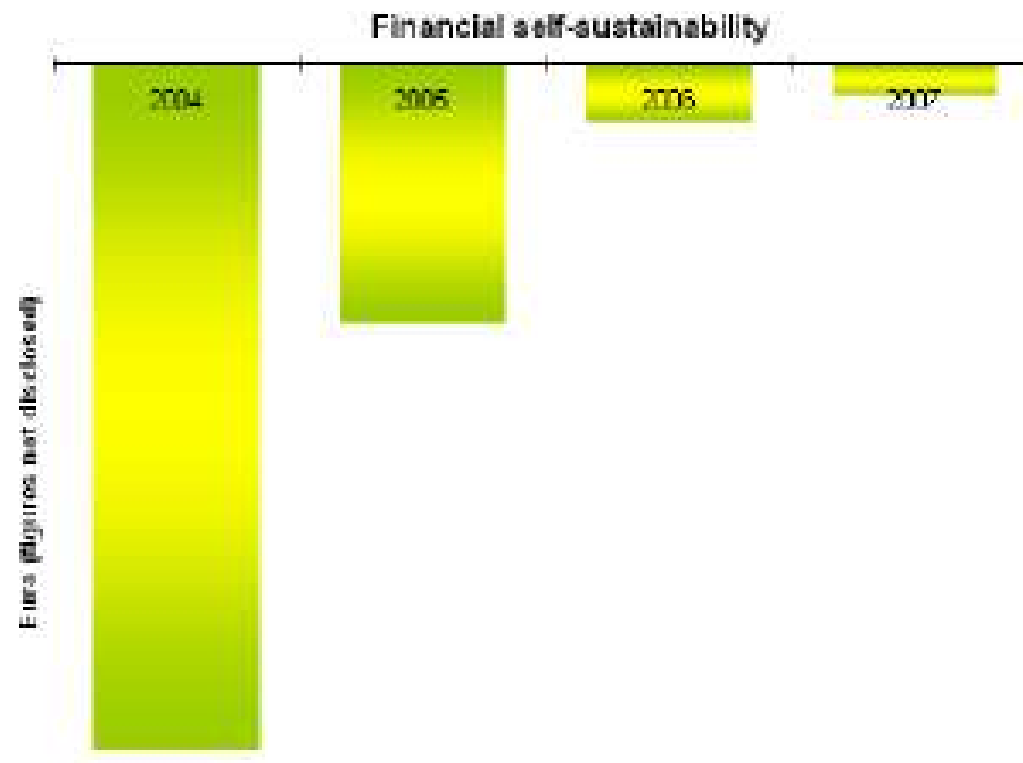
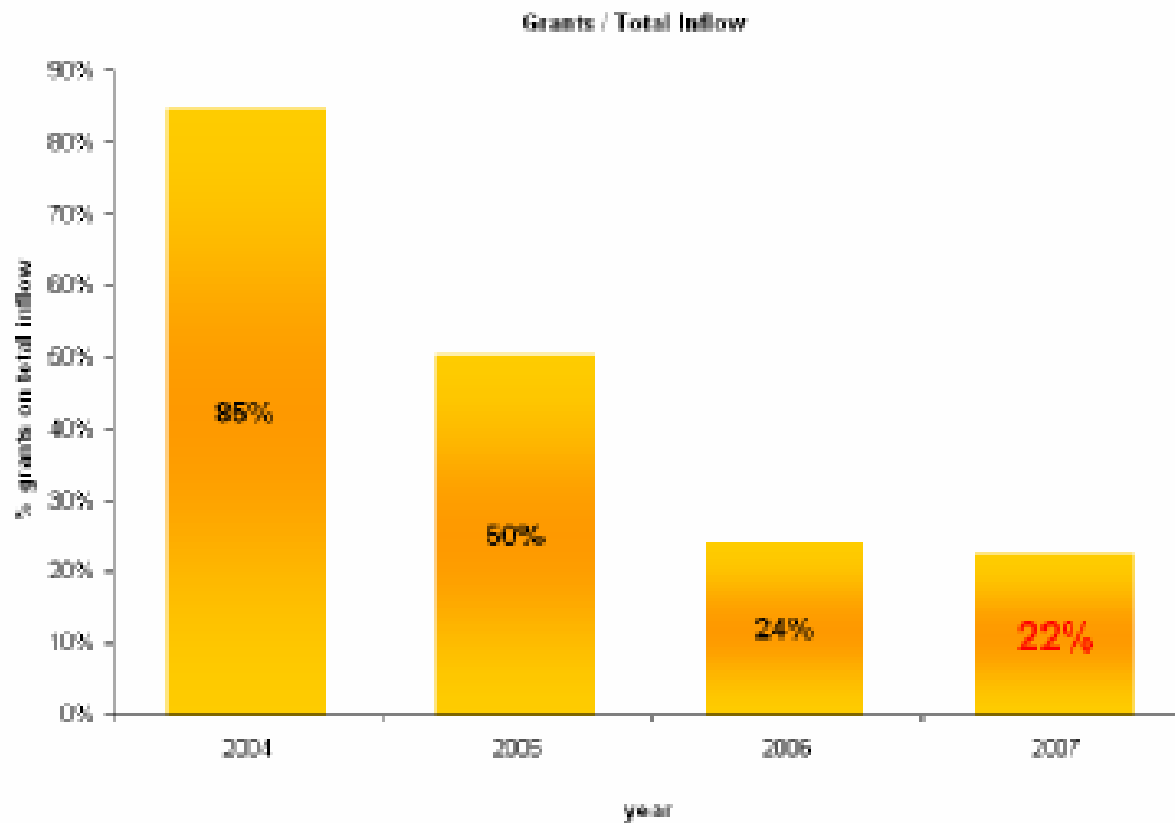


Figure 3: Development of driving performance in road freight transport

- The financial self-sustainability is going to be achieved, facing the end of public granting after 2007)



- The necessity of public grants (provided by Municipality, Province, Region and Chamber of Commerce) is decreasing year by year

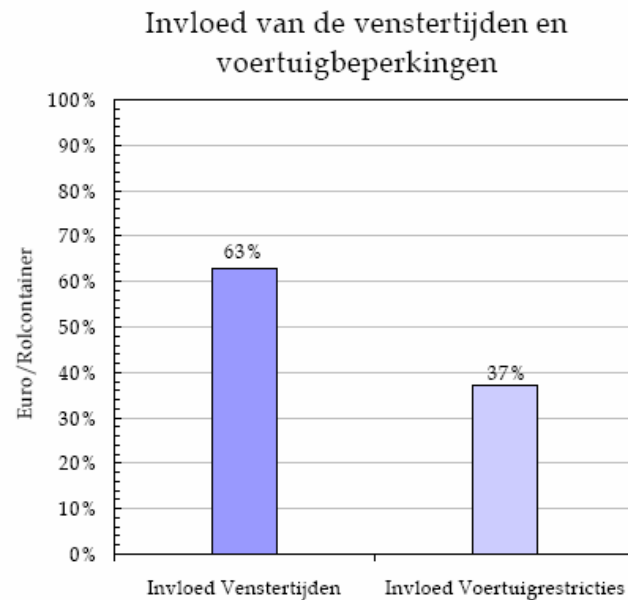


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Study on impacts of vehicle restrictions

Impacts of restrictions on distribution costs estimated for food supply chain in NL

- Time windows: +63%
- Vehicle restrictions: +37%



Figuur 13: Invloed van de venstertijden en de voertuigbeperkingen op de stijging van de kostprijs per rolcontainer in de levensmiddelenhandel.



NEA
a member of Panteia

Environmental zone Gothenburg



	HC %	CO %	NO _x %	PM %
Miljövinst med miljözon				
– Buss	16,5	-8,4	-8,4	-36,1
Miljövinst med miljözon				
– Tung Lastbil < 16 ton	-46,1	-26,7	-20,7	-67,0
Miljövinst med miljözon				
– Tung Lastbil > 16 ton	-16,4	-2,9	-6,3	-26,9
Miljövinst med miljözon				
– Totalt	-3,6	-6,1	-7,8	-33,2

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Cross comparison (extract)

Single measures	Environmental Impacts				
	Pollution	(Truck) Km travelled	Noise	Quality of life	Accidents
LCCC, UK	↓ CO2 emissions: c. 75% ↓ Material waste: up to 15%	↓ Constr. Vehicles: 68%			
CityPLUS, IT	↓ (Less pollutant vehicles)	↓ Number of trips			
LogUrb, PT	↓	↓ 17% in mileage (280,5 km/week)			
Packstation, DE	↓	↓ (29 stations in Cologne: reduction of 35.000 trip-km)		↑	
PIEK, NL	↓ 36 million kg CO2 ↓ 60.000 kg PM10 ↓ 1.660.000 kg NOx	↓ c. 10%	↓	↑	↓ (Expected average)
Night Delivery, ES		↓ of 7 trucks (12T)	↓	↑	
City Cargo (Tram), NL	↓ 61,27 Kton CO2 ↓ PM, CO2, NOx up to 16%	↓	↓	↑	↓
BILK, HU	↓				
Route planning, HU	↓ 773 kg CO2/days.	↓			
Trip Planning Program, DE	↓	3 vehicles could be saved			
London Congestion Charging, UK	↓	↓			↓ 5%
Congestion Charging, SE	↓ (reduction of vehicles: 19%)	≈ (no change in # deliveries)		↑	↓
	↑ Euro4/5: 11%				

Prospects for the future

- Improvement of quality, comparability and availability of urban freight data and evaluations is needed to improve awareness and to make better decisions
- People trade in privacy for value!
- Private traffic management centres because of lack of competence in cities?
- Huge potential for Gallileo?
 - ◆ Arrival forecasts of the trucks at destination
 - ◆ Anonymous information to traffic management
 - ◆ *Automated law enforcement?*
- European Observatory on Urban Mobility?

Two useful reports have been produced, but:

- There are big gaps in urban mobility statistics at the EU level, but also at the local level where freight flows are concerned.
- Regular freight surveys are rare and results are often very difficult to compare because of the different methodologies used
- Monitoring of the effects of measures is also often quite insufficient and difficult to compare

Recommendations

- Cities should be encouraged to finance regular freight surveys, as most cities do for personal travel surveys.
- Guidance on efficient and comparable data collection and monitoring could help cities.
- Data collection pilots in cities in different countries could provide interesting comparisons.
- The establishment of suitable performance measures and benchmarking would help cities to determine the most relevant fields of action and would deepen the understanding and monitoring of urban freight related measures.

- Role of the Commission?

Workpackage partners:

- NEA, RAPP, Transman, PTV

Other contributors:

- ISIS Italy, PIEK, Univeristy of Westminster, Chalmers University, MVA Consultants, Dublin Institute of Technology, Università Commerciale "L. Bocconi", CITYPORTS RegioneEmiliaRomagna, Gérardin Conseil, Peter Brett Associates, Transport for London, Freight Transport Association



Thank you for your attention.

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