



26/05/2015

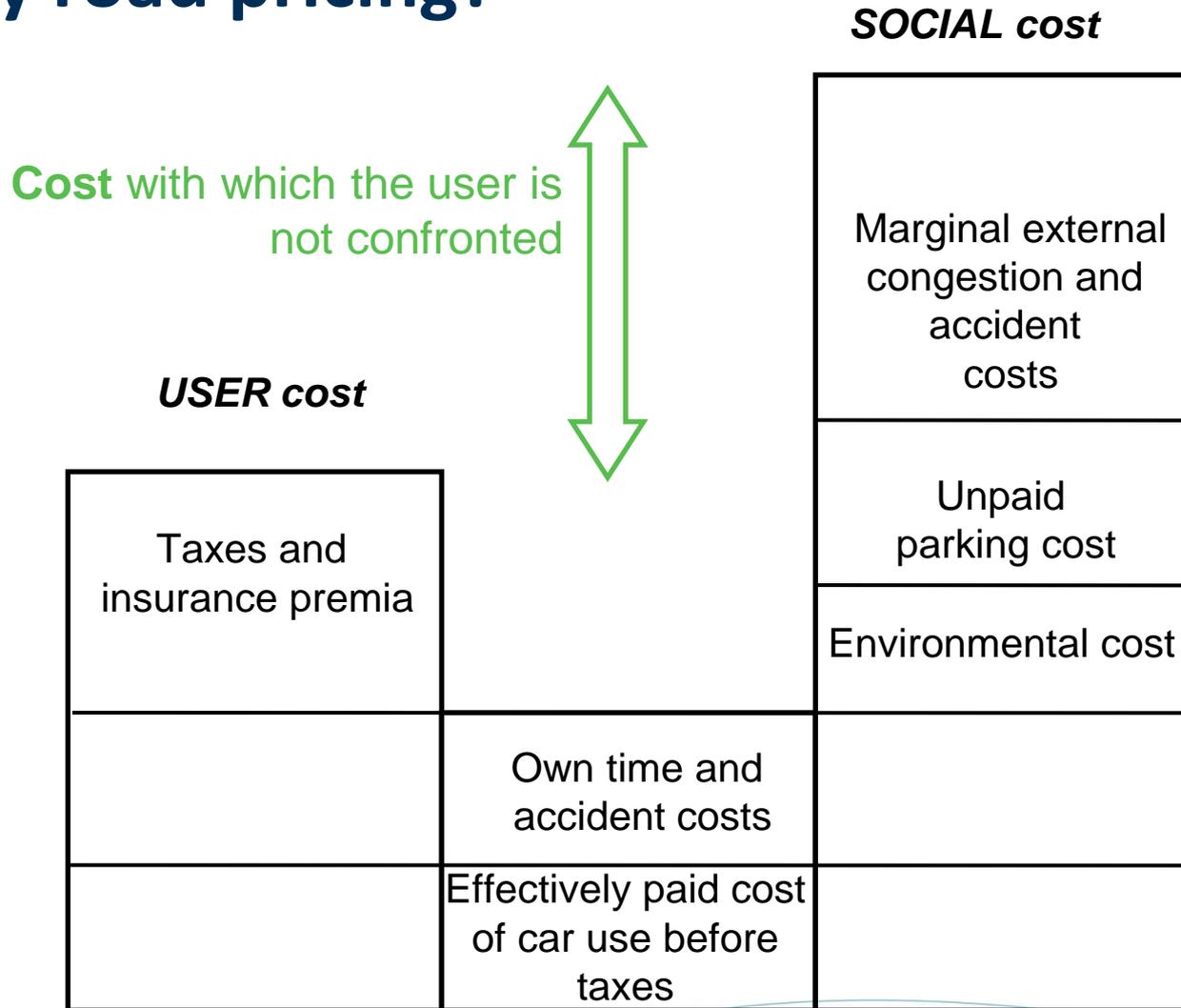
## Road charging in Belgium: state of play

Dr. Inge Mayeres (VITO, KU Leuven)

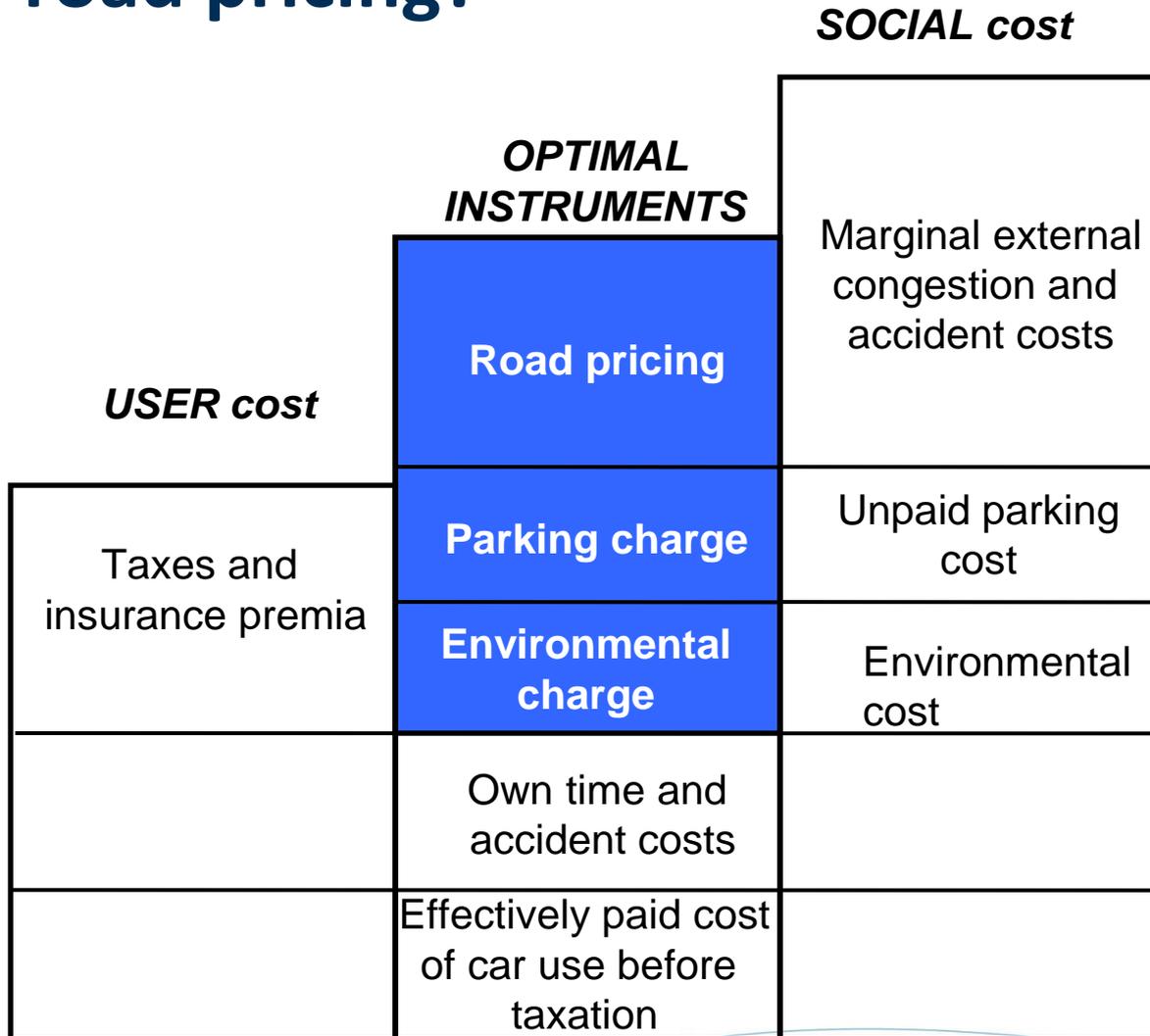
# Outline

- » Why road pricing?
- » Relative efficiency of pricing measures
- » Recent evolutions in Belgium
  - » Field trial road pricing cars
  - » Kilometre charge heavy goods vehicles

# Why road pricing?



# Why road pricing?

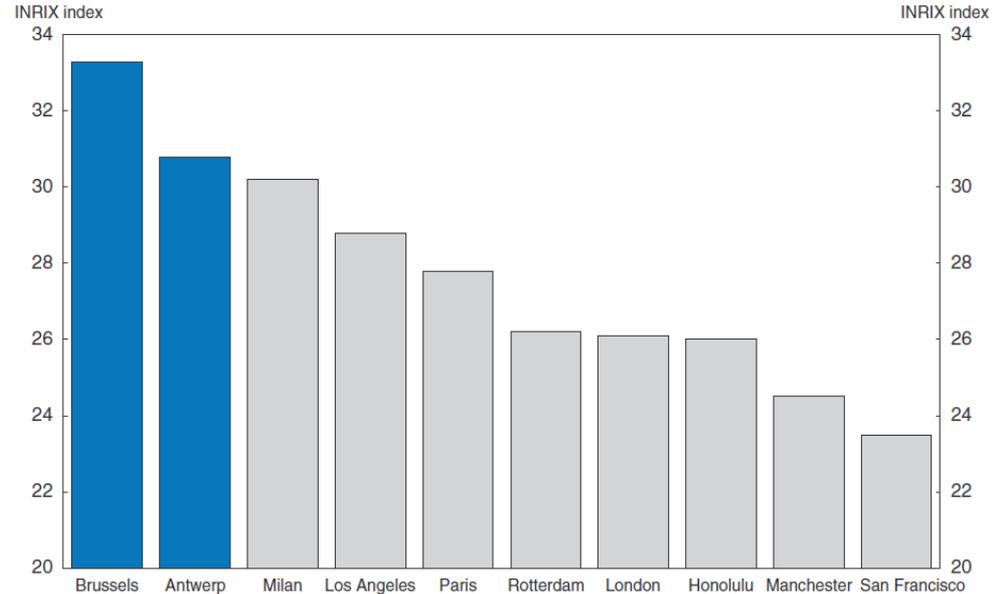


# Insights from economic theory

- » Aim of road pricing:
  - » Confront road users with the marginal external costs they impose on society
- » “Ideal”/”optimal” system charges according to:
  - » Location → Congestion , Environmental impacts
  - » Time of day → Congestion
  - » Vehicle/environmental technology } → Environmental impacts
  - » Fuel type }
- » Road pricing as essential part of broader reform package
  - » Supply public transport, infrastructure other modes
  - » Correct pricing public transport, parking
  - » Car and fuel taxation
  - » Company car taxation and labour taxes

# Congestion in Belgium: bad & expected to worsen

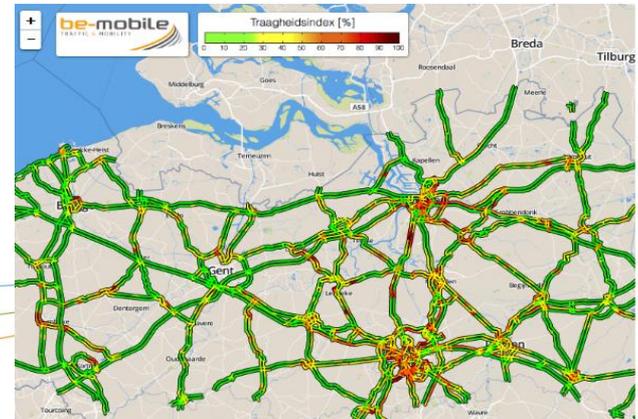
Figure 2.6. **Belgian cities are among the most congested in the OECD**  
2012 average



Source: IEA and INRIX scoreboard.

Long term outlook Federal Planning Bureau (2012):

- » in 2030 a drop in average road speed by 29% during the peak period and by 16% during the off-peak period (compared to 2008)
- » large increase in marginal external congestion costs



# GHG and air pollutants

Share of transport in emissions (Belgium, 2012\*)

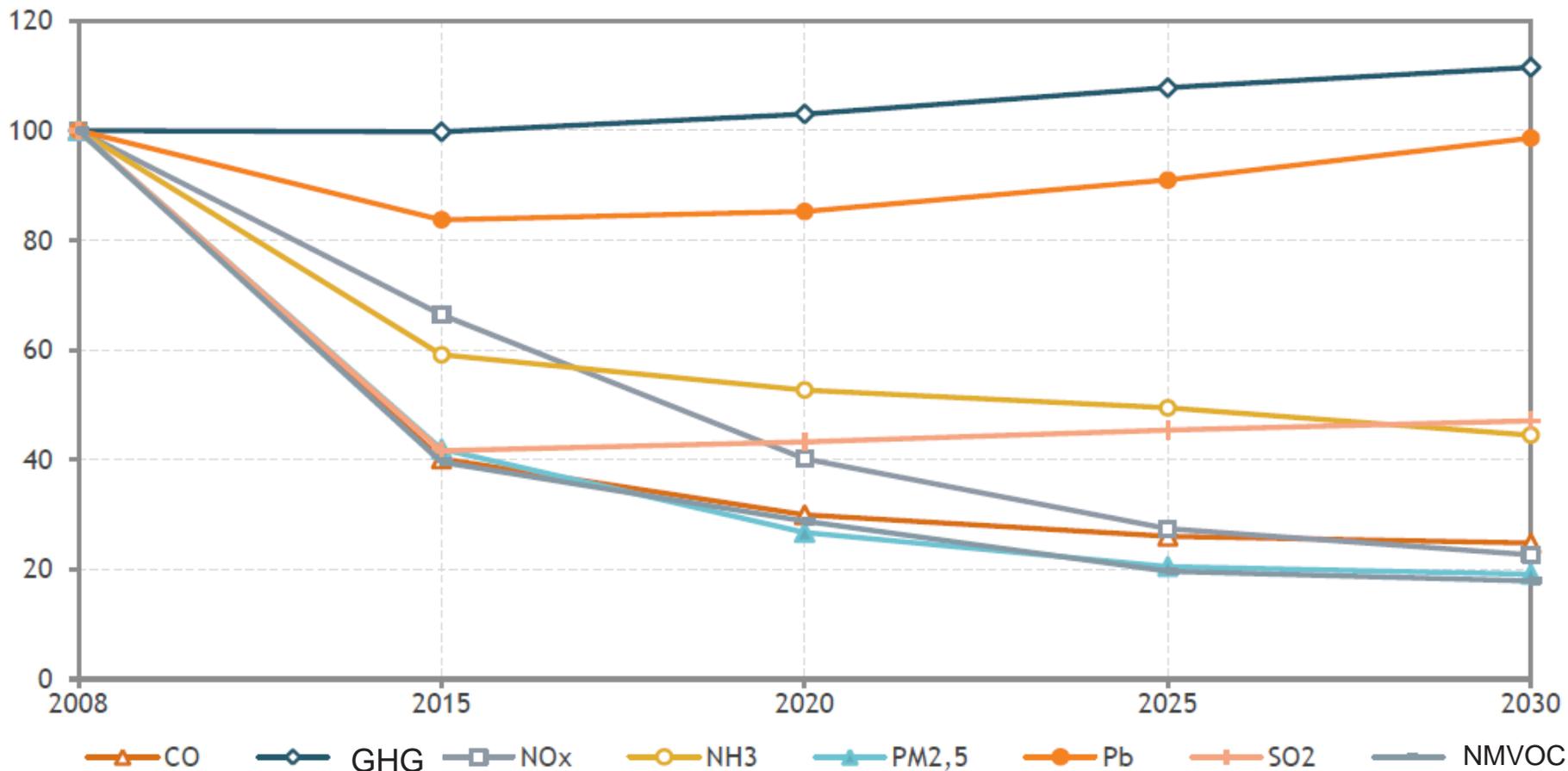
	Emissions (kton)	Transport share
CO <sub>2eq</sub>	118903	22.5%
CO	392	18.3%
NMVOG	104	9.6%
NO <sub>x</sub>	195	54.7%
PM <sub>10</sub>	39	16.4%
PM <sub>2.5</sub>	32	15.3%
SO <sub>x</sub>	49	2.1%

\* 2013 for CO<sub>2eq</sub>

Source: UNFCCC and UNECE, LRTAP

# Direct emissions of air pollutants and GHG by transport (road, rail, IWW)

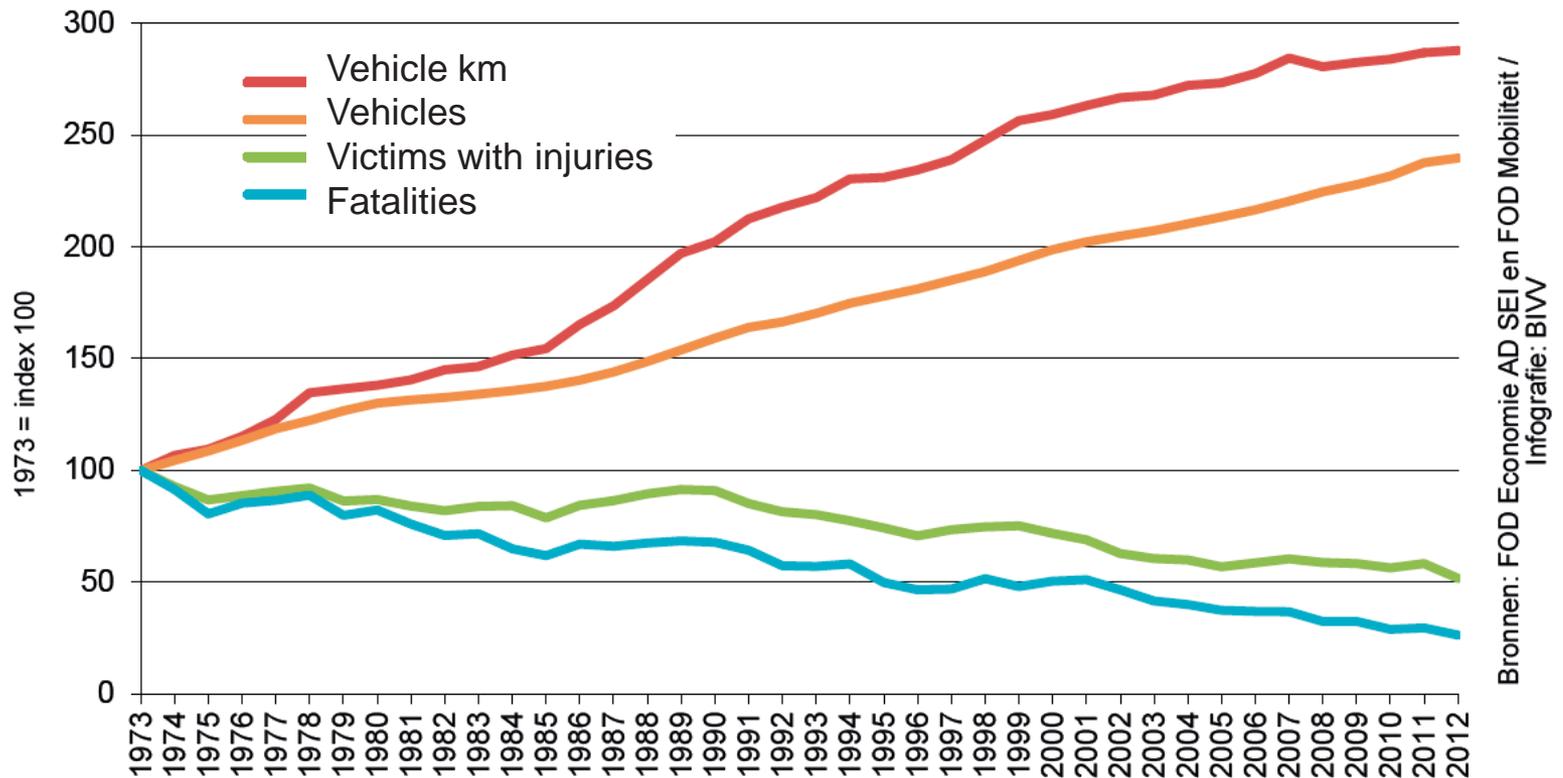
2008 = 100



Source: FPB, VITO (2012)

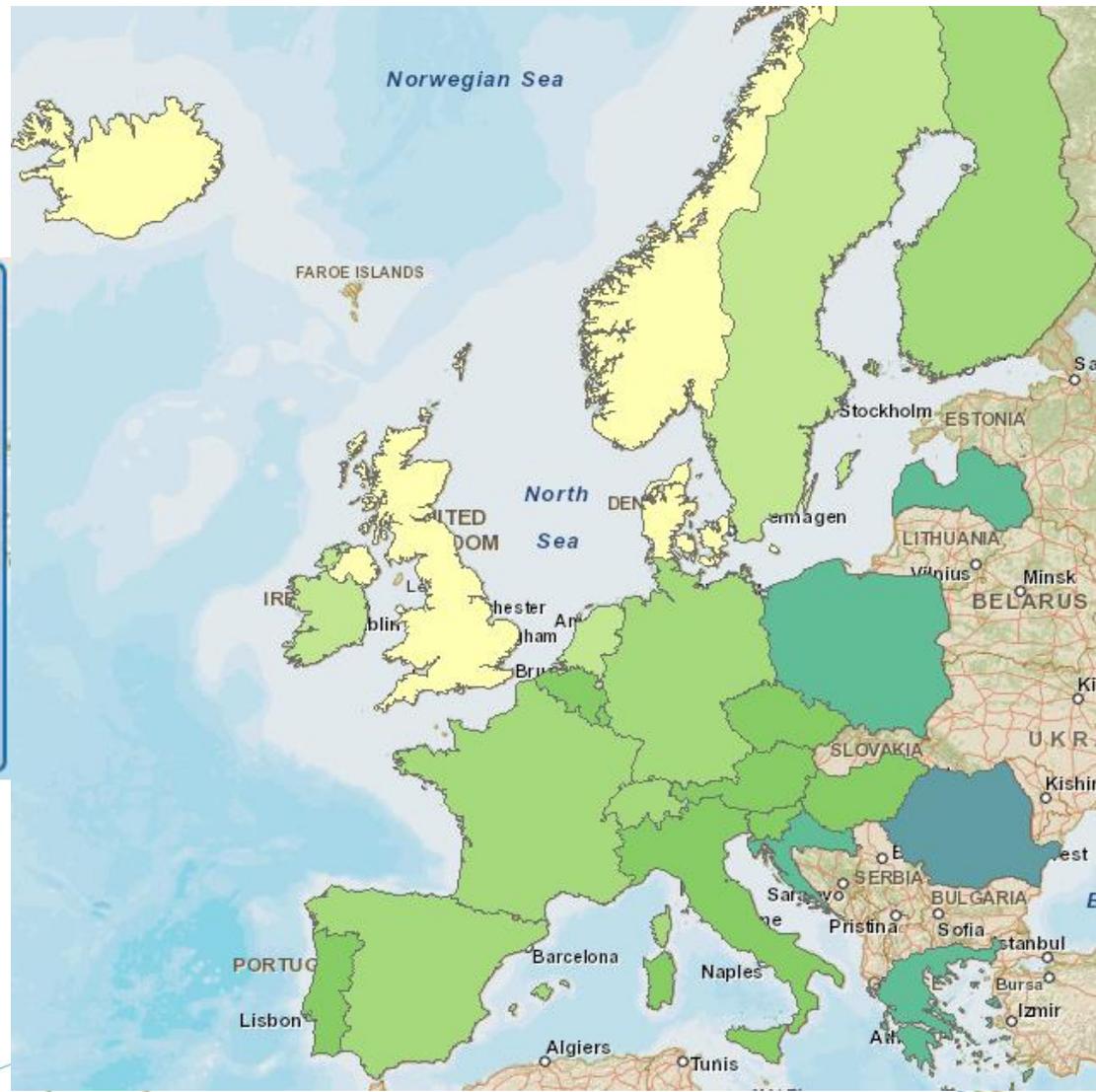
# Traffic accidents

Evolution (index = 100) of accident victims, motor vehicles and vehicle km (Belgium)



Bronnen: FOD Economie AD SEI en FOD Mobiliteit / Infografie: BIW

# Traffic accidents: international context



[http://ec.europa.eu/transport/road\\_safety/specialist/statistics/](http://ec.europa.eu/transport/road_safety/specialist/statistics/)

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# Current policies

## » Pricing measures

- » Fuel taxes
- » Fixed car taxes
- » Company car taxation
- » Parking charges
- » Public transport subsidies

## » Other measures

- » Regulation of emissions and fuel efficiency
- » Safety regulation
- » Infrastructural measures
- » “Soft” measures: campaigns, ...

# Potential of current pricing measures

## » Fuel taxes

- » No distinction between the peak and off-peak period
- » No distinction between less and more polluting vehicles
- » Leads to vehicles that are too fuel efficient
- » Fuel tourism

## » Parking charges

- » Can be used as second-best instrument to tackle congestion

# Potential of current pricing measures

- » **Public transport subsidies (operational subsidies)**
  - » Good policy only if a number of conditions is met:
    - » The price of private transport is too low and cannot be changed
    - » The subsidies encourage a lot of people to switch from private transport to public transport on links and in periods with a lot of congestion
    - » Own price elasticity of public transport is limited
    - » Differentiation of subsidies according to trip purpose
    - » Distributional considerations
  - » Subsidies need to be financed!

# Relative efficiency of pricing measures

	Relative efficiency	Impact on air pollution costs
Current situation	0%	0%
Fuel taxes	5%	107%
Parking charges	30%	33%
Price public transport	5 to 10%	n.a.
Cordon toll	52%	7%
Cordon toll + parking charges	75%	n.a.
Optimal policy	100%	100%

# International examples

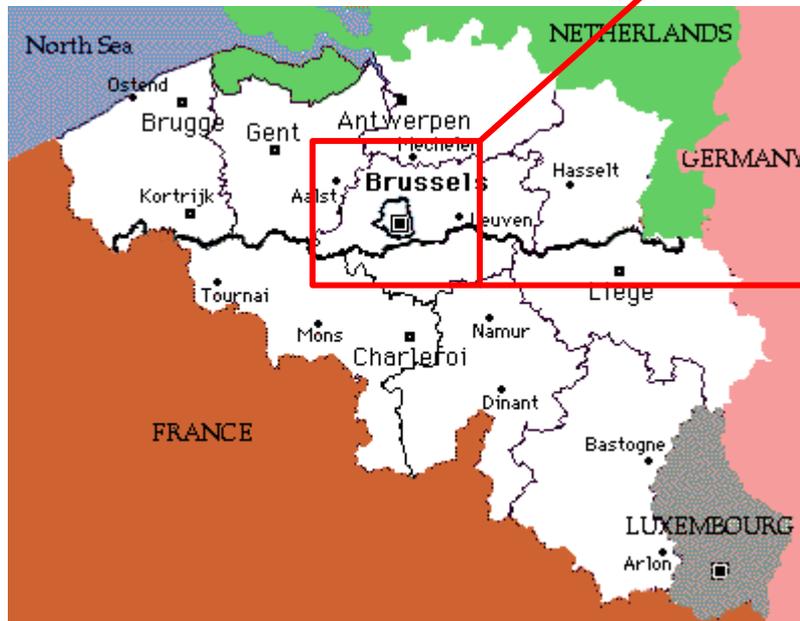
- » Nowhere implementation of pure road pricing
- » Cordon toll
  - » toll on vehicles that drive through a cordon around an area
    - » examples: Stockholm (2006 trial; 2008 final), Gothenburg (2010), Milan (2012), Valetta (2007)
- » Area licence
  - » toll on vehicles that drive in a certain area
    - » examples: Singapore (since 1975), London (since 2003)
- » Road pricing of trucks

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# Field trial road pricing cars

- » Pilot project on road pricing of passenger cars in the **Brussels Regional Express Network zone**



# Aims of the project

- » Study commissioned by the Flemish government, together with the Walloon Region and the Brussels Capital Region.
- » To what extent are the **short run** transport decisions of car users influenced by the introduction of road pricing in the BREN-zone? What are the **behavioural impacts**?
- » How are the behavioural changes affected by:
  - » Availability of public transport alternatives
  - » Socio-economic variables: income, household composition, availability of a company car,...
- » What is the **acceptability** of road pricing among car users and which factors explain the attitudes of car users w.r.t. road pricing?

# Outline

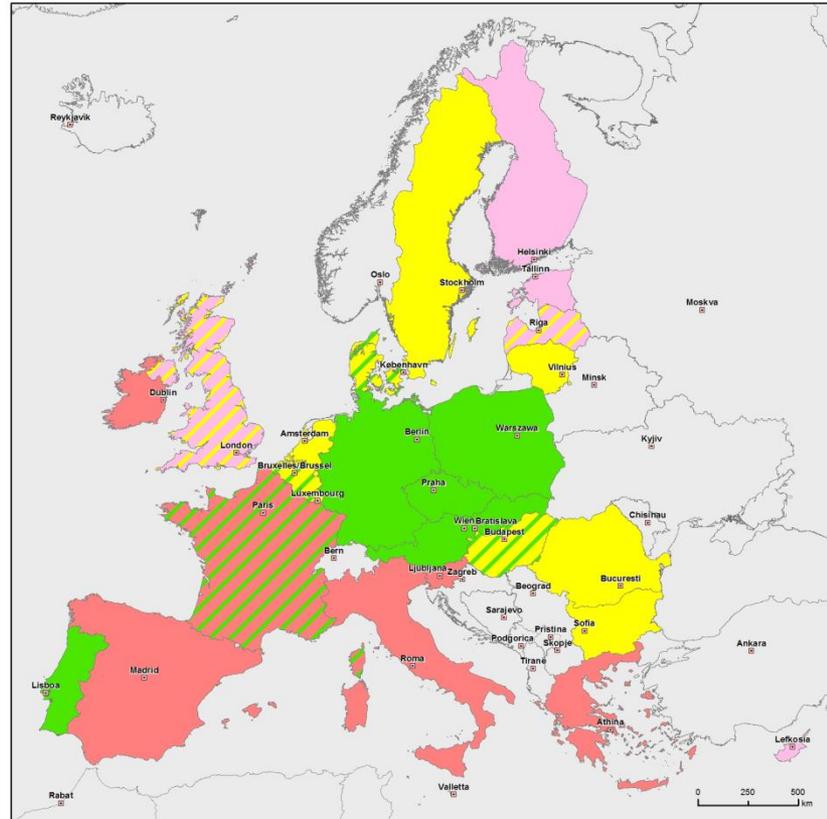
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European Commission

### CHARGING OF HEAVY GOODS VEHICLES IN THE EU

Directive 1999/62/EC as amended by Directive 2006/38/EC and Directive 2011/76/EU



#### Legend

- Vignette (time-based charge)
- Electronic network-wide toll (distance-based charge)
- Toll with physical barriers (distance-based charge)
- Neither vignettes nor tolls
- Vignette (time-based charge) under preparation
- Electronic network-wide toll (distance-based charge) under preparation

© EuroGeographics 2011 for the administrative boundaries  
Cartography: OZ Systems B.V. Date: 16 June 2012  
REP/EC\_eurosp\_eurmap010ides\_en.htm

# Kilometre charge heavy goods vehicles

- » Transit has little advantages and a lot of disadvantages for Belgium
- » Up to 2016: system of Eurovignette
  - » depends on no. of axles and euro norm
  - » independent of the number of km
- » Kilometre charge on trucks
  - » International examples: Switzerland, Austria, Germany
  - » Introduction prepared in Belgium
- » Role of Europe:
  - » Technology harmonization
  - » Composition of charge
- » Need for coordination between Belgian regions
- » Highest benefit for Belgium: tax revenues (from foreign trucks)
- » Danger of overestimation of positive impact on congestion

# Kilometre charge heavy goods vehicles

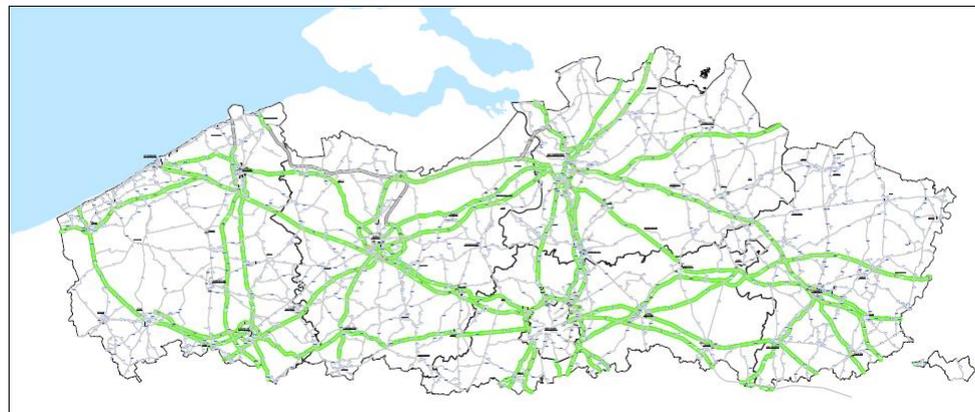
- » Interregional Cooperation Agreement between the 3 regions (Jan 2014)
  - » Creates common framework for the three regions to work together
  - » Determines scope and tasks of interregional entity Viapass
- » Viapass legally founded in July 2014
- » Contract with Satellic NV (July 2014)(DBFMO contract)
- » Introduction of road user charging planned for April 2016
  
- » Satellite-based kilometre charge for HGVs > 3.5 t
  - » Levying of toll via on-board unit
  - » Enforcement via fixed portals and mobile control units
    - » Enforcement is responsibility of the 3 regions

# Kilometre charge heavy goods vehicles

- » Tolling network:
  - » Highways (with some exemptions)
  - » Part of regional roads (FL, WAL), all regional roads (Brussels Capital Region)
  - » Municipal roads in Brussels Capital Region
- » Formula for kilometre charge takes into account:
  - » maximal permissible weight
  - » emission class
  - » road type (e.g. BCR)
- » Tariff levels not yet decided in Wallonia and BCR
- » Flanders expects revenue of 310 million euro
  - » 1/3 used for road infrastructure, 1/3 compensation measures, 1/3 general revenue

# Kilometre charge heavy goods vehicles - Flanders

	3,5-12ton	12-32ton	>32 ton
<i>Euronorm 0</i>	0,146 €	0,196 €	0,20 €
<i>Euronorm 1</i>	0,146 €	0,196 €	0,20 €
<i>Euronorm 2</i>	0,146 €	0,196 €	0,20 €
<i>Euronorm 3</i>	0,126 €	0,176 €	0,18 €
<i>Euronorm 4</i>	0,095 €	0,145 €	0,14,9€
<i>Euronorm 5</i>	0,074 €	0,124 €	0,128 €
<i>Euronorm 6</i>	0,074 €	0,124 €	0,128 €



# Kilometre charge trucks

- » Insights from the literature
  - » Optimal charge falls if higher tax on freight transport leads to a higher increase in passenger transport (through price of transported goods and congestion)
    - » Higher tax on freight transport then further aggravates problems related to passenger transport
  - » The higher the tax on passenger transport, the lower the optimal tax on freight transport
    - » Because external costs are lower