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# Worldwide Situation of Road Pricing

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# WORLDWIDE SITUATION OF ROAD PRICING

## Source and target of information

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**The main information on panorama came from**

**23 case studies** reported by the members of committee A3 that are described in the report more in detail:

Austria, Canada, Czech Republic, Denmark, Finland, France, Germany, Hungary, Italy, Japan, Mexico, Morocco, the Netherlands, New Zealand, Norway, Singapore, Slovakia, Spain, Sweden, Switzerland, United Kingdom, United States, West African Economic and Monetary Union – WAEMU – Countries

**Worldwide update of existing and envisaged road pricing schemes and trends**



# WORLDWIDE SITUATION OF ROAD PRICING Overview

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**Based on the content of case studies, our report**

- Starts from the **previous PIARC report**
- Lists the **pricing tools** and interdependencies
- Describes these tools and **their features**
- Gives news about **EU regulatory frame**



# WORLDWIDE SITUATION OF ROAD PRICING

## Previous work done in PIARC

[http://publications.piarc.org/ressources/publications\\_files/5/3525,2009R05\\_WEB.pdf](http://publications.piarc.org/ressources/publications_files/5/3525,2009R05_WEB.pdf)

### Objectives of road pricing:

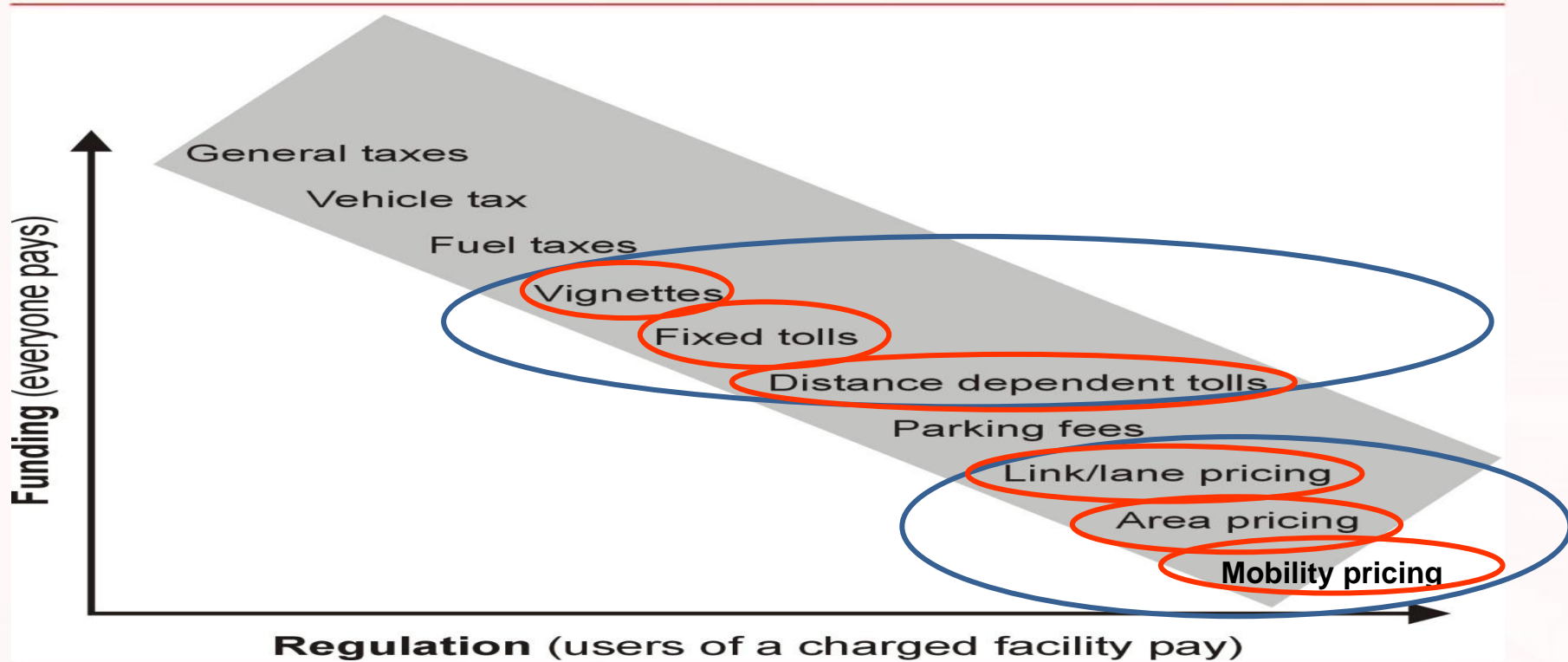
- **Financing** (construction, maintenance)
- **Regulating** traffic (time, place)
- **Relieving congestion** (urban traffic)
- **Cross financing** (urban transport)
- **Value for money** (HOT lanes)
- **Environmental** (emissions' reduction)

**Objectives and priorities should be clearly defined before decisions!**



# WORLDWIDE SITUATION OF ROAD PRICING

## Pricing tools



**No instrument represents pure funding or regulation, there is a trade-off between them.**



# WORLDWIDE SITUATION OF ROAD PRICING

## Vignette: possibly a transitory solution

- Gives the right of use as a **pre-paid access charge**
- **Validity for a given time** (year, month, week, day)
- **Tax** if payable for any roads for domestic vehicles (Belgium, Côte d'Ivoire, Denmark, Finland, Morocco, Senegal)
- **Service fee** if payable on high level road network (Austria, Czech Republic, Slovakia, Slovenia, Switzerland  $\leq 3.5$  t, Belgium, Hungary)
- It can be **general or earmarked** state or company **income**
- Other pricing forms on top of it (Austria, Slovenia, Switzerland)
- **Declines due to regulation rigidity** (frequent /infrequent use)
- **Environmental** regulation (Finland, Denmark)



# WORLDWIDE SITUATION OF ROAD PRICING

## Tolls on highways and structures: further development

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- Most **widely spread** solution (new, reconstruction, refurbishment)
- Capital investment, **operation and maintenance** oriented
- Formerly **concessions** (France, Italy, Mexico, Morocco, Spain, US)
- Development as **new tolled structures** (Denmark, France)
- **Reluctant countries join** as well (New Zealand, Quebec, UK)
- **Asset development** (existing infrastructures: France, Mexico)
- Mostly **maintenance oriented** solutions (Mali, Côte d'Ivoire)
- New toll arrangements allow **more regulations in pricing**
- **Electronic toll collection enables smarter tolling policy**
- **Most robust revenue** generating capacity (all category)



# WORLDWIDE SITUATION OF ROAD PRICING

## Tolls on heavy goods vehicles: generalization

- Since early 2000, a **step-by-step European spread**, with ETC solution, mostly in case of transit countries:  
2001 Switzerland: HGV > 3.5 t; 2004 Austria: all > 3.5 t (annual toll revisions to inflation); 2005 Germany: HGV > 12 t (2009: toll 20% ↗); 2007 Czech Republic: all > 12 t; 2010 Slovakia: all > 3.5 t; 2011 Poland: all > 3.5 t; contract is about to be signed France: on trunk roads; currently Slovenia: tendering all > 3.5 t; plans in Hungary: all > 3.5 t (in 2007 report, new developments)
- **European legislation indirectly discourage vignettes**
- In most cases categories under that pays by vignettes
- such system exists also in **Oregon, US**





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## Congestion pricing: widening experience

- **Traffic regulation with pre-fixed (not real time) variation:**
  - UK M6: night/day, weekdays/ends
  - France: time of day, Sunday afternoon, summer
  - Spain: peak/off peak, passengers  $\geq 3$
  - Singapore: peak/off peak, but revised every 3 months
- **Traffic regulation with load depending dynamic ETC:**
  - many former High Occupancy Vehicle (HOV) lanes – as they were underused – were turned to High Occupancy Toll (HOT) lanes in US:
    - 1996: San Diego I-15; 1998: Houston I-10; 2005: Minneapolis I-394;
    - 2006: Denver I-25/US-36; 2008: Seattle SR-167; 2008: Miami I-95 exp;
    - new regulated lane born (Orange County SR-91) or studied



# WORLDWIDE SITUATION OF ROAD PRICING

## Area charging and city tolls: evaluation and hesitation

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- Urban tolls implemented **to cope congestion problems**:  
Norway: cordon tolling in Bergen (1986-), Oslo (1990-),  
Trondheim (1991-2005) to finance new transport infrastructures;  
UK area charging: Durham (2002-), London (2003-) W ext (2007-2010);  
Sweden: cordon tolling (trial: 2005-2006, permanent: 2007-);  
Italy: Milano EcoPass (2008-) by ecoclasses to reduce local air pollution;  
Malta area toll: La Valletta (2007-) in centre to optimize parking traffic;  
Singapore: (from 1975: annual vignettes, in 1998 replaced with ETC)
- Urban tolls **under investigation**:  
Finland: Helsinki; Sweden: Gothenburg; Hungary: Budapest;
- Urban tolls **studied but abandoned**:  
Austria: Vienna; New Zealand: Auckland; US: New York, Manhattan;  
UK: Birmingham, Coventry, Edinburgh, Manchester;



# WORLDWIDE SITUATION OF ROAD PRICING

## Mobility pricing: about to replace road taxation

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- Transport **financing strategies**: general / transport taxes
- More fuel efficient vehicles / future alternative propulsions  
**less proportional incomes** → **basic change in financing**
- **What is feasible under existing technologies?**
- Independent on use and time and place taxation could be substituted by **real mobility pricing in the future**
- **Currently abandoned plans in Europe**  
(theoretically well established: the Netherlands, Denmark)
- **US studies on replacing fuel taxes by distance based tolling** (Oregon experiment in 2006)



# WORLDWIDE SITUATION OF ROAD PRICING

## Regulation news from the European Union

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- **Common EU market:** policies important in Member States
- **Eurovignette directive** (1999/62/EC modified with 2006/38/EC): **HGV toll policy framework**, maximising vignette price, calculation method for infrastructure costs based tolls, based on Greening transport package (2008) a new modification enacted (2011): internalization of some external costs, with modulation: air pollution, noise, congestion
- **Interoperability directive** (2004/52/EC): one contract / OBU (one invoice); with DSRC, GNSS, CN **technologies**
- **European Electronic Toll Service decision** (2009/750/EC): Client, Toll Charger, Service Provider, Oct 2012 > 3.5 t ≥ 2014



# WORLDWIDE SITUATION OF ROAD PRICING

## Conclusions

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- Road charging for **funding purposes keeps developing**
- Year by year **more countries charge** directly road users
- **Tolls replace vignettes** step by step: by categories, by network length, by number of countries applies charging
- **Tolls on HGVs spread** on trunk / general roads as well
- **Congestion pricing becomes smarter** by technology
- **Urban toll still struggling to gain public acceptance:** clearly defined objectives, fair / easy, a political champion is needed
- In the future feasible complex **mobility pricing can take over vehicle and fuel taxation**
- **Ever changing topic, keep eyes on it!**

