

# Implementing road charging systems in France: the lessons learnt from the ECOTALE project

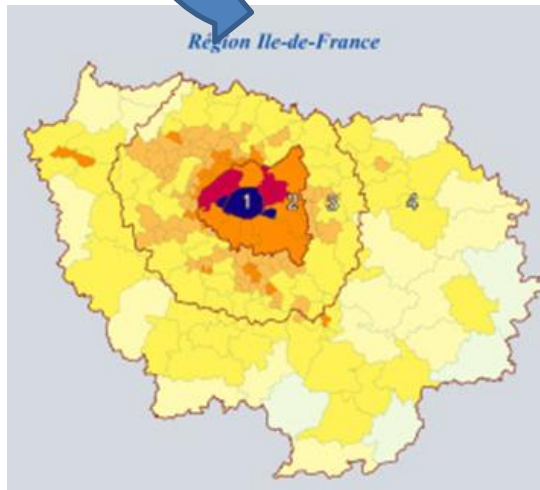


**ecotale**  
EXTERNAL COSTS OF TRANSPORT AND LAND EQUALIZATION

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# IAU : Institute for Urban Planning and Development of Paris Île-de-France Region



- Semi-public agency, set up in 1960
- Missions : propose planning and development policies for the Paris Region, center for data collection and analysis
- 150 experts in urbanism, demography, economy, housing, transport, environment, GIS, ...
- Annual budget : 20 millions € (85% from regional grant)

# Externalities

- Congestion, air pollution, noise, accidents, GHG, loss of biodiversity, water and soil pollution, cut-off effects, landscape damages, infrastructure wear and tear
- Concerns all modes
- Freight and travellers



# SOCIAL COSTS = PRIVATE COSTS + EXTERNAL COSTS



Private costs  
(or internal costs)

External costs

The aim of internalisation is to apply the 'polluter pays' principle.

# Internalisation strategies

## Instruments to tackle transport externalities

### Type of measures

#### Traditional fiscal instruments

- Vehicle purchase
- Registration taxes
- Fuel taxes
- Insurance taxes

#### Pricing measures

- Road pricing
- Low Emission Zones (LEZ)
- Trucks tax
- Parking fares

#### Infrastructure supply

- Public transport infrastructure
- Noise walls
- Development of walking and cycling infrastructure
- Reallocation of existing urban public spaces

#### Demand management

- Urban Mobility plans
- Company Mobility plans
- Carpooling
- Transit fare subsidies

# Current situation in France



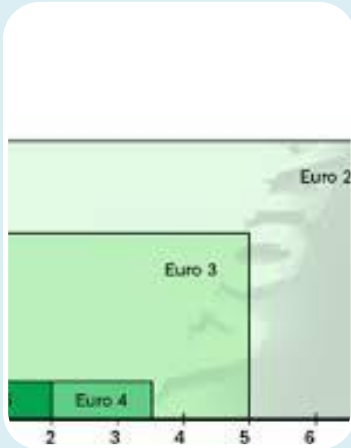
No Low  
Emission Zones



No trucks tax

Projects stopped or suspended

# Low Emission Zones in Europe



## Principle

- Only vehicles that meet a certain EURO emission standard (I to V) are allowed to enter the zone.



## Two objectives

- reduce pollutants emissions ( $PM_{10}$ ,  $NO_x$ ), in accordance with the European emissions standards
- encourage modernization of vehicle fleet

# Low Emission Zones in Europe



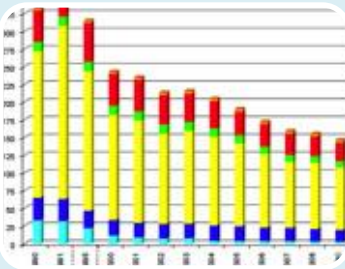
## Human cost

- In 2005, air pollution is responsible of 310 000 dead people in Europe (40 000 in France).



## Perimeter

- From 3 km<sup>2</sup> (Bologna, Italy) to 88 km<sup>2</sup> (city center of Berlin), until 1600 km<sup>2</sup> (the Greater London)



## Efficency

- Evidence that LEZ are efficient globally to attain the two objectives.
- April 2014 : **220 LEZ** in 14 countries (70 LEZ in 2010 in 8 countries)



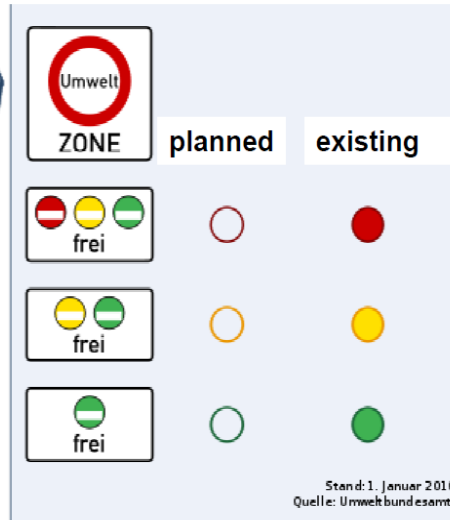
# Example : LEZ of Berlin

## The Overview of German LEZ

The national scheme identifies 4 emission groups

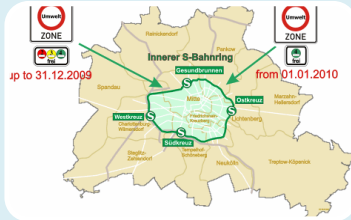


German cities with low emission zones



	Pollutant group			
	1	2	3	4
Sticker	No Sticker			
Requirement for <b>diesel-driven cars</b>	Euro 1 or worse	Euro 2 or Euro 1 + particle filter	Euro 3 or Euro 2 + particle filter	Euro 4 or Euro 3 + particle filter
Requirement for <b>petrol-driven cars</b>	Without 3-Way catalytic converter			Euro 1 with regulated catalytic converter or better

# LEZ of Berlin



## Site characteristics

- Inner Berlin= area bounded by the S-Bahn ring
- 88 km<sup>2</sup> surface area (Berlin total: 892 km<sup>2</sup>); 1,1 million inhab. (Berlin total: 3,4 million)



**Both trucks and cars** are affected (incl. foreigners)



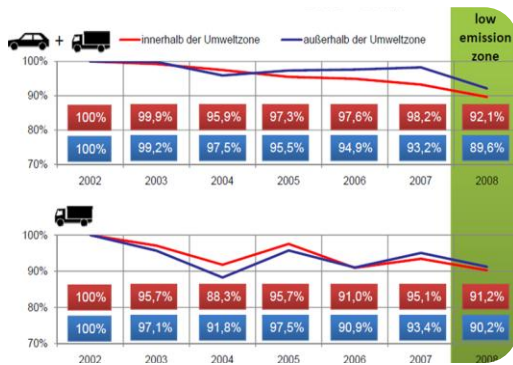
## Cost

- Sticker costs 12,50 €
- Penalty system : 40 euros fine + 1 point on the national traffic penalty register for German vehicles (18 points in total)

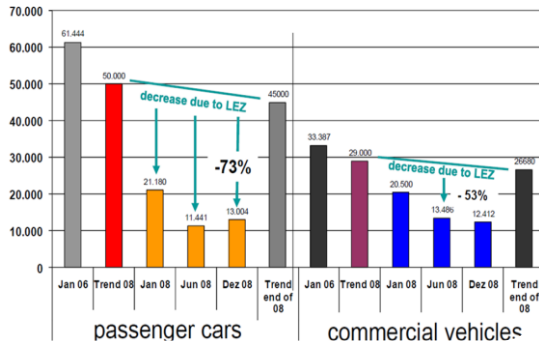


The LEZ was **jointly** implemented with the StEP (Plan for the development of urban transport), a larger transport policy

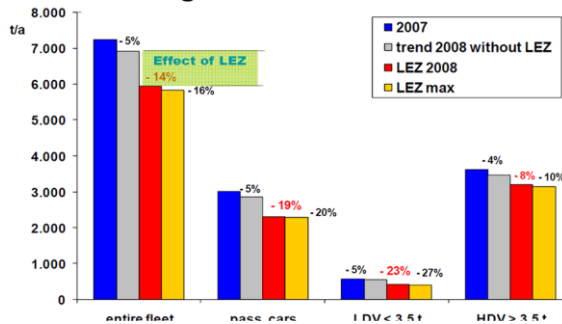
# LEZ of Berlin



number of registered vehicles with pollution category 1 (no sticker) in Berlin



change of traffic NO<sub>x</sub>-emissions



No visible shift of traffic flows.

Significant impact on vehicle fleet composition

PM<sub>10</sub> and NO<sub>2</sub> reduction

# Conclusions about LEZ of Berlin

A very **successful** measure at achieving a faster renewal of vehicle fleet.

The LEZ alone is **not sufficient**.  
Additional measures of accompaniment are necessary :

- traffic management
- further shift towards cleaner transport modes

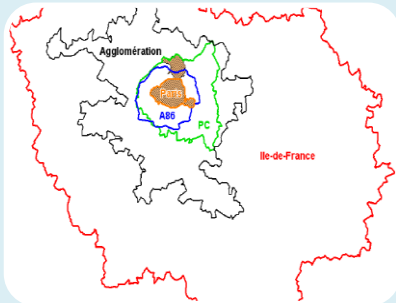
# SCHEME OF A LEZ IN PARIS

## LEZ in France



- 2009 : one of the key measures instigated by the “Grenelle de l’Environnement” law
- 2010-2012 : studies of feasibility of LEZ in 8 french cities (including Paris)

## Study of feasibility of LEZ in Paris



9 areas scenarios were simulated according to the area and the vehicles age (smallest area : Paris City 105 km<sup>2</sup> , largest area : Agglomeration 2800 km<sup>2</sup>)

# SCHEME OF A LEZ IN PARIS

Finally, no candidate for experimentation in Paris Region. Why ?

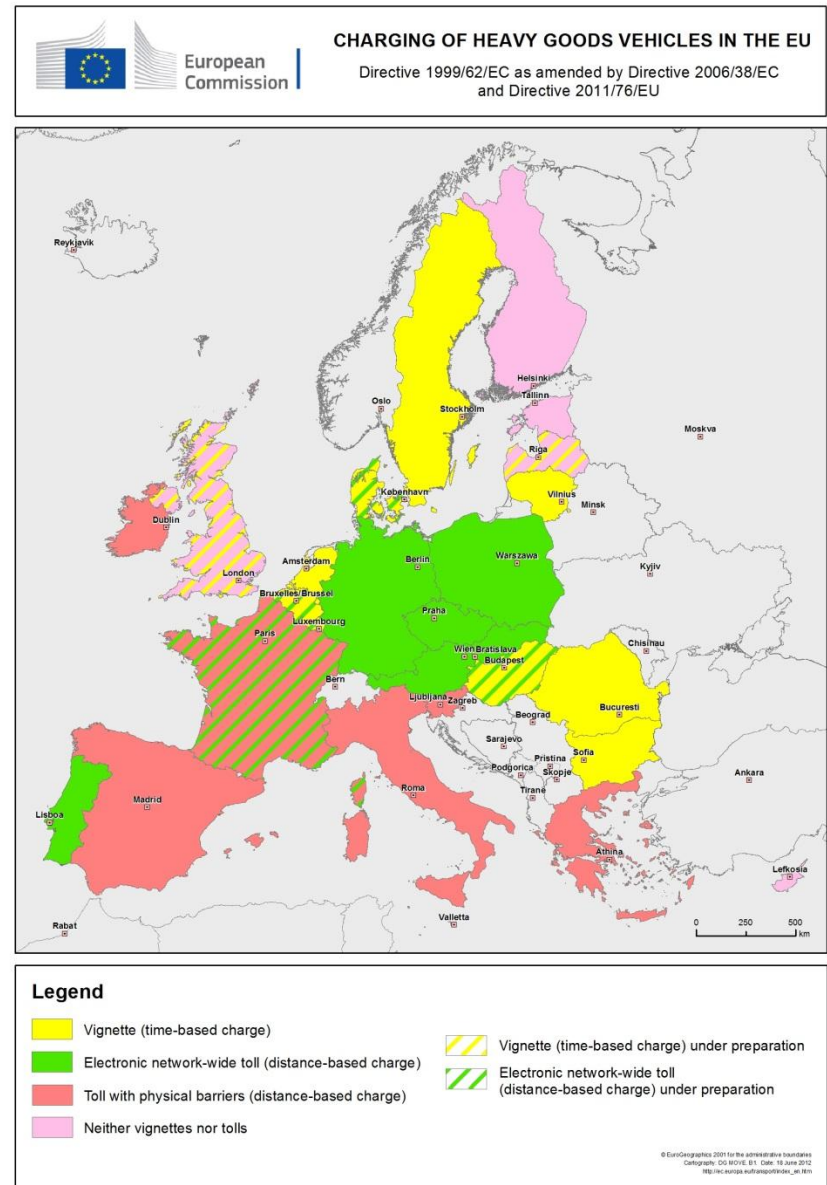


- **Cultural and social barriers** : low-income classes are likely to suffer the most, problem of equity
- Choice of a **large area** : pb of governance, too many entities, no local political will
- Differentiation by **vehicle age** (no evidence of LEZ efficiency) instead of EURO class
- No proposition of **accompaniment or compensation** measures (neither national nor local)
- **Implementation cost** : 900 M€, **Operational cost** : 200 M€/year
- **Economic context** not favorable for a new tax
- **Contradiction** between the political support of Diesel cars industry and air pollution control

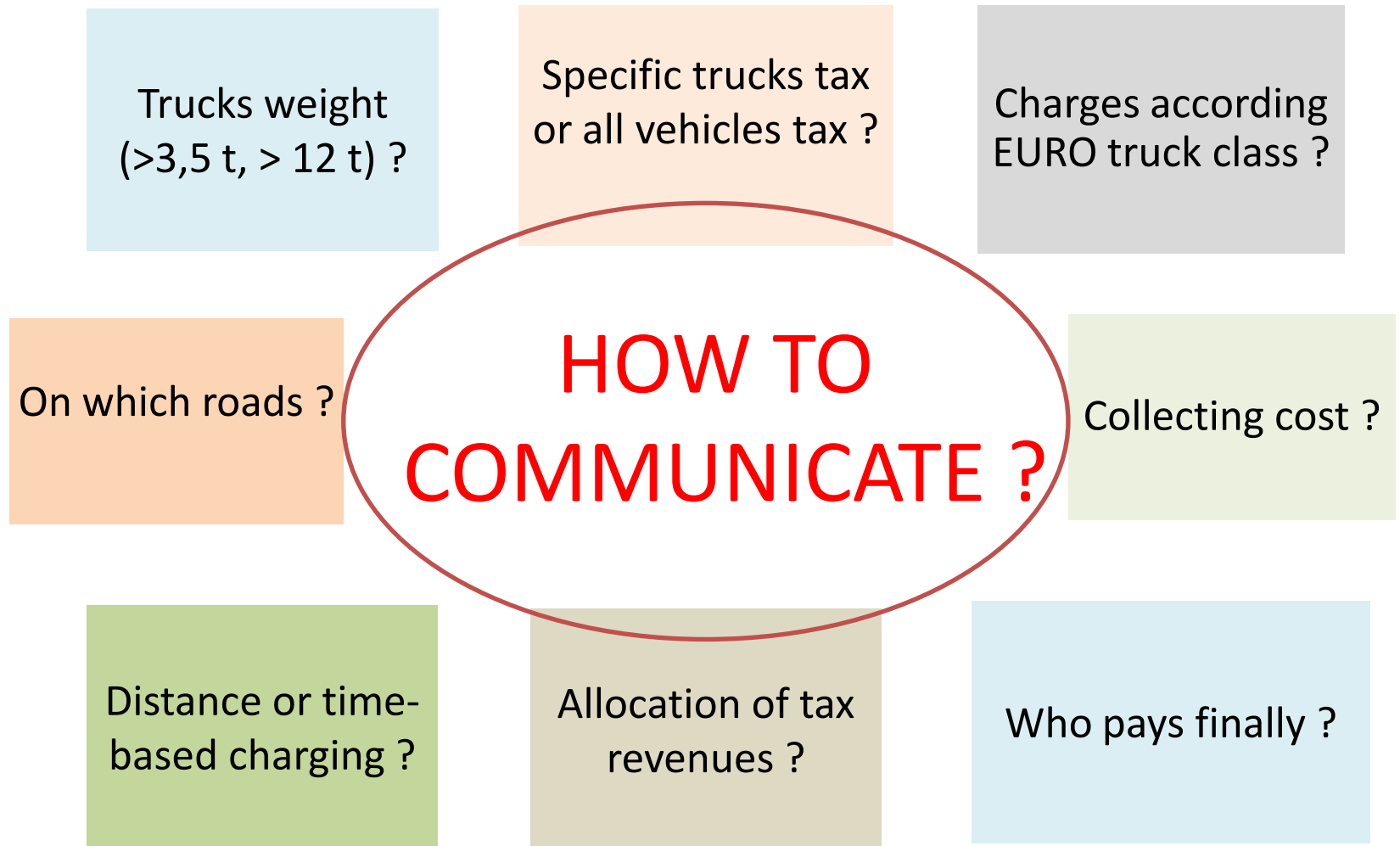
# Trucks tax in Europe

Map showing the diversity of trucks charging in Europe.

- **Specific** tax based on the distance (toll) in 6 countries : Austria, Czech Republic, Germany, Poland, Portugal, Slovakia.
- **Specific** tax based on the time (Eurovignette) in 6 countries : Belgium, Denmark, Great Britain, Luxembourg, Netherlands, Sweden
- Tax covering **both** cars and trucks (toll or vignettes) : Bulgaria, Hungary, Lithuania, Romania, Slovakia
- **Opposition** in Denmark, France, Italy, Spain



# Trucks tax in Europe : questions before implementation





# Trucks tax in France : « Ecotax »

Trucks weight :  
> 3,5 t

Specific trucks tax

Charges according  
EURO truck class

on a part of the  
non-concessionary  
roads (15 000 km)

**The Ecotax was presented  
as new resources to finance  
public transport projects  
and a mean to internalize  
external costs.**

Collecting cost for  
Ecomouv : 250  
M€/year (22% of  
revenues)

Distance-based  
charging (GPS tracking, 800  
000 trucks to equip and 4100  
gantries to install) : 0,08 à  
0,14 €/km

Tax revenues : 1150 M€  
750 M€ for urban public  
transport investments,  
150 M€ for roads  
maintenance

Repercussion on the  
final customer

# Trucks tax in Great Britain : from 1<sup>st</sup> april 2014

Trucks weight :  
> 12 t

Specific trucks tax

No EURO class

On any road

**The UK haulage industry  
have lobbied for trucks  
charging so that foreign  
trucks pay.**

Collecting cost :  
6 M€ (2% of  
revenues)

Time -based  
charging (6 €/day  
for 12-21 t)

Tax revenues (estimation) :  
300 M€/year but 270 paid  
back to UK hauliers (VED  
reduction). So 30 M€/y for  
road maintenance

The haulier (5% GB,  
95% foreign) pays

# Trucks tax in Germany : from 1<sup>st</sup> jan. 2005

Trucks weight :  
> 12 t

Specific trucks tax

Charges according  
EURO class

On any highways  
(12 000 km)

**The tax was presented as  
new resources to finance  
roads projects and a mean  
to tax foreign trucks**

Collecting cost :  
600 M€ (13% of  
revenues)

distance-based  
charging (0,14 à  
0,28 €/km)

Tax revenues :  
4500 M€/year  
(2000 M€ for roads, 1300  
M€ for PT, 600 M€ for  
waterways)

The hauler pays

# Trucks tax in Poland : from 1<sup>st</sup> july 2011

Trucks weight :  
> 3,5t and > 12t

Specific trucks tax

Charges according  
EURO class

A part of the road  
network

**The tax is affected mainly  
to the road maintenance.**

Collecting cost :  
NA €

distance-based  
charging (GPS) : from  
0,05 to 0,10 €/km

Tax revenues :  
NA €/year

NA pays

# Conclusions



Fruitful exchanges of best practises between european partners. Internalisation is a notion difficult to explain to citizens.



## **In France, there is an alternative to LEZ :**

alternate traffic circulation according to license plate numbers and free public transport in case of a peak pollution



## **Ideas to implement a LEZ in France :**

- Experiment at first on a very small area (<20 km<sup>2</sup>)
- Evaluate clearly the implementation/operational costs and revenues
- Take into account the EURO class (not the age)
- Integrate with other policy strategies and measures
- Propose straight away compensation measures (rebate/freebate schemes)

# Conclusions

## Ideas to implement a trucks tax in France to make it acceptable (under hot debate currently) :



- **Foreign** trucks have to pay.
- Tax revenues is a **new resource** that will be affected mainly to roads, in accordance with european directive.
- Propose straight away that french haulers will benefit **compensations** (axle tax reduction, regional reduction, « TICPE » reduction)
- Propose **two** stages : at first the trucks > 12 t, then the trucks > 3,5 t
- **Time-based** charging (vignette) is technically much easier to implement than **distance-based** charging.
- **All the non-toll** road network could be taxed (not only the selected 15000 km) but according to european directive, impossible to mix distance and time-based charging.

# Thanks for your attention

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