

WEC Africa workshop on energy efficiency

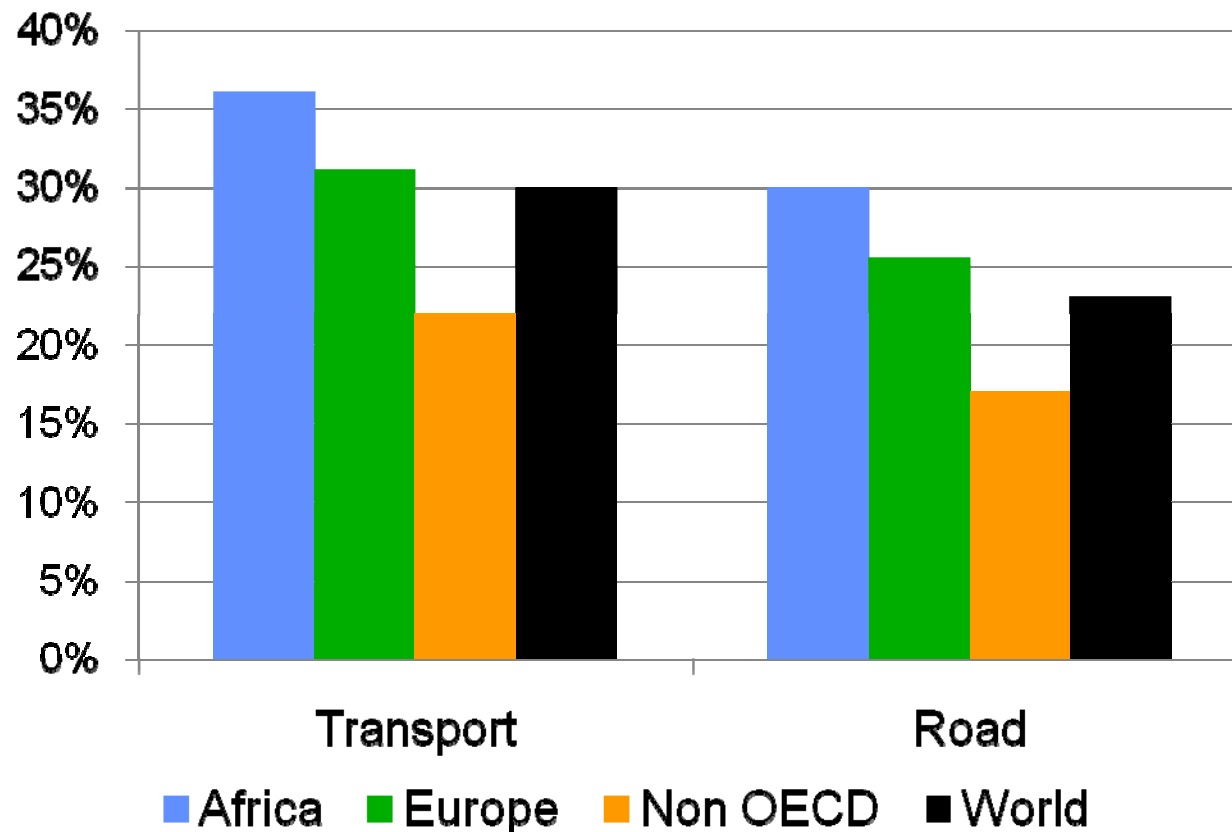
Addis Ababa, June 29-30 2009

Energy efficiency incentive for cars

B Lapillonne
Enerdata

- Classification by type and distribution by type/ target in the EU
- Measures on car energy use
- Measures on car efficiency/emission
- Fuel pricing and taxation=> impact on car energy use and efficiency

Share of transport in final energy consumption* in Africa



- Transport sector relatively more important in Africa

- Fully dependant on oil
 - ➔ heavy burden for oil importing countries
 - ➔ ➔ importance of energy efficiency policy in that sector... although difficult to address with policies

- ➔ Cars between one third and half of the consumption of transport

* Biomass excluded

Measures on car efficiency/emissions

➤ Measures on car efficiency

- Regulations/VA to raise the **energy efficiency of new cars**
- Incentives to buy more efficient/ low emissions **new cars**

➤ **Measures on car energy use:** information, ecodriving, speed limit, car pooling, mandatory technical inspection

➤ **Fuel tax** → impact on car efficiency and car use

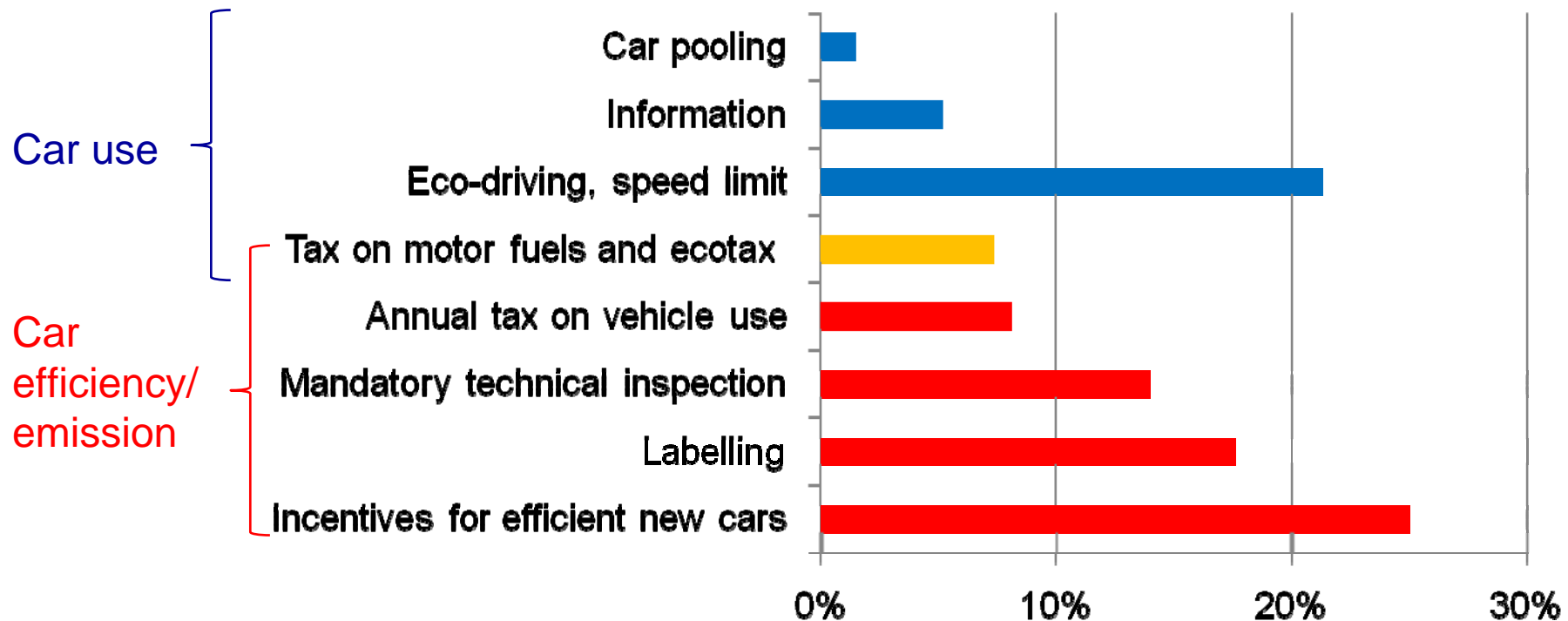
➤ Measures to reduce car use:

- Urban tolls (e.g. London, Oslo, Stockholm)
- promotion of public transport → long-term measure

Overview of policies on cars in the European Union

- Two third of national measures are targeted to improve the efficiency (or lower CO₂ emissions) of new cars; most spread measures are financial incentives to purchase more efficient/low emission new cars
- One third of measures to reduce the consumption of cars (ecodriving, speed limit)
- Measures on price have impact on car use and car efficiency

Distribution of measures for cars by type in the EU

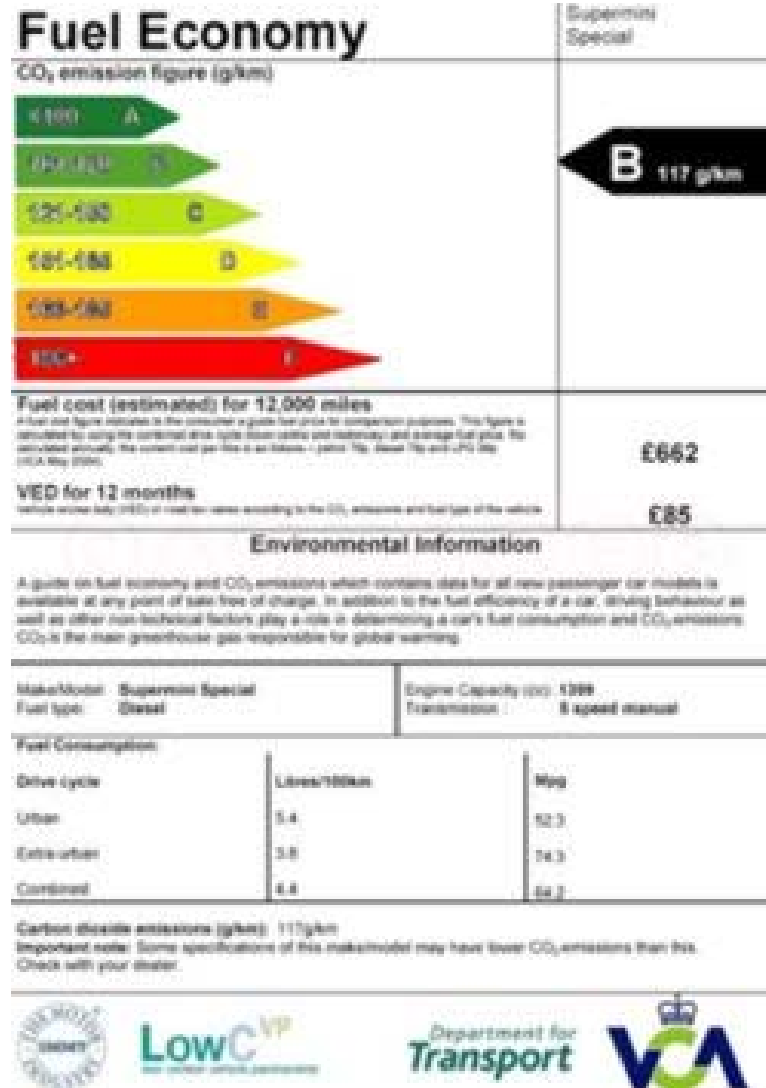


Labelling of new cars

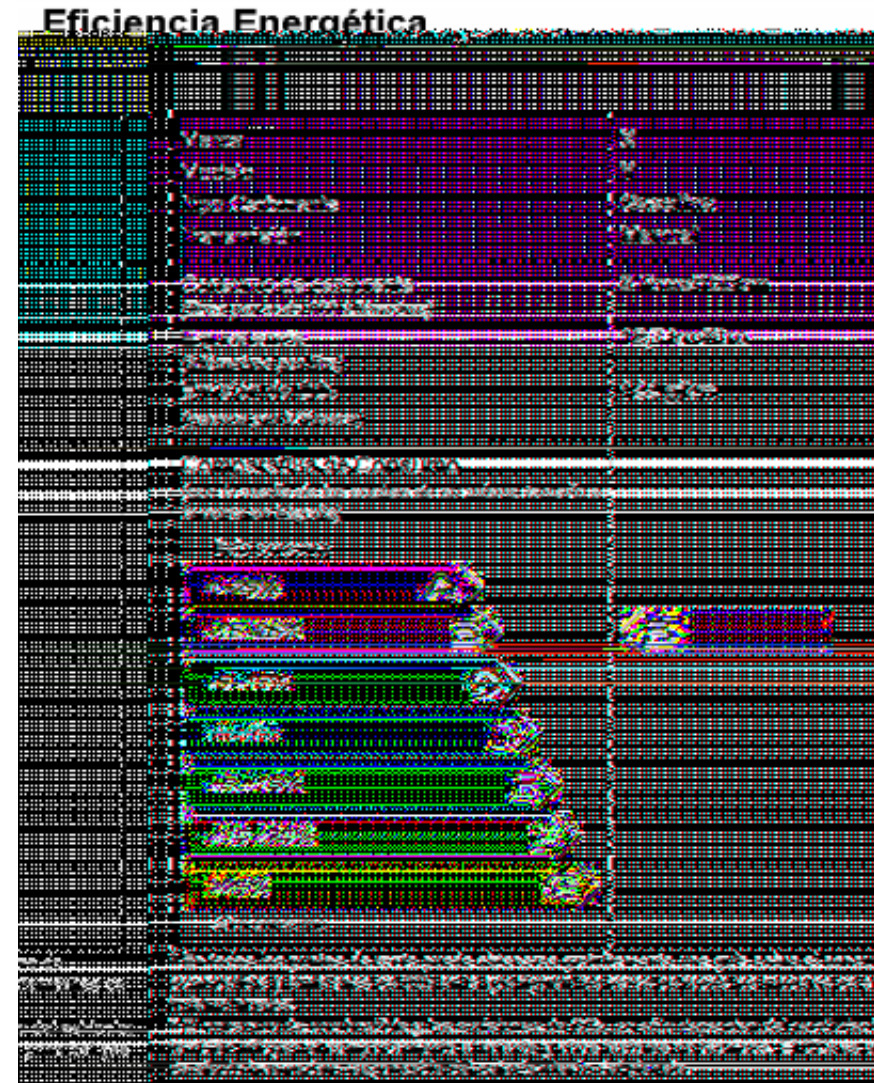
- Objective: inform the buyer of the specific fuel consumption (l/100km or mpg) (and CO2 emission) of the car he is buying.
- Mandatory in the EU following a Directive of 1999 implemented by Member states between 1999 and 2008
- Different types of label (no harmonisation in the EU) :
 - use with class of efficiency (A, B,...) characterised by a colour to better attract the attention of buyers; for instance in the EU, 2 approaches
 - absolute labels type A,B, C with fixed values of CO2 emission band
 - relative labels (band defined in relation to stock average;
 - simple display of emissions level (minimum requirement)
- Potential impact on car stock efficiency depend on behaviour of car buyers and on the importance of the annual sale of new cars (reduced impact in countries with a high share of second-used cars)

Car labels

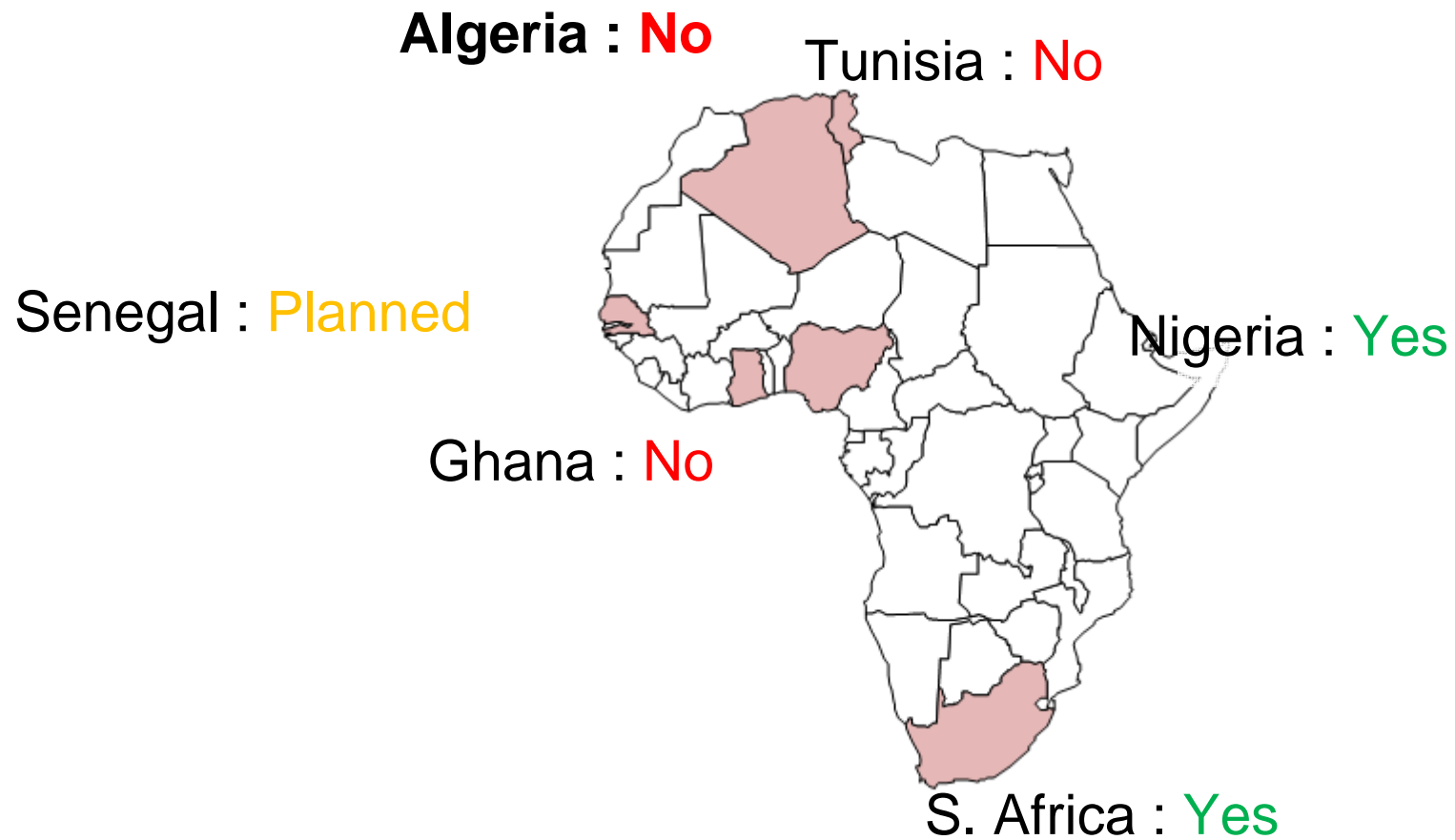
Absolute labels (UK)



Relative label (Spain)



Car labelling in Africa



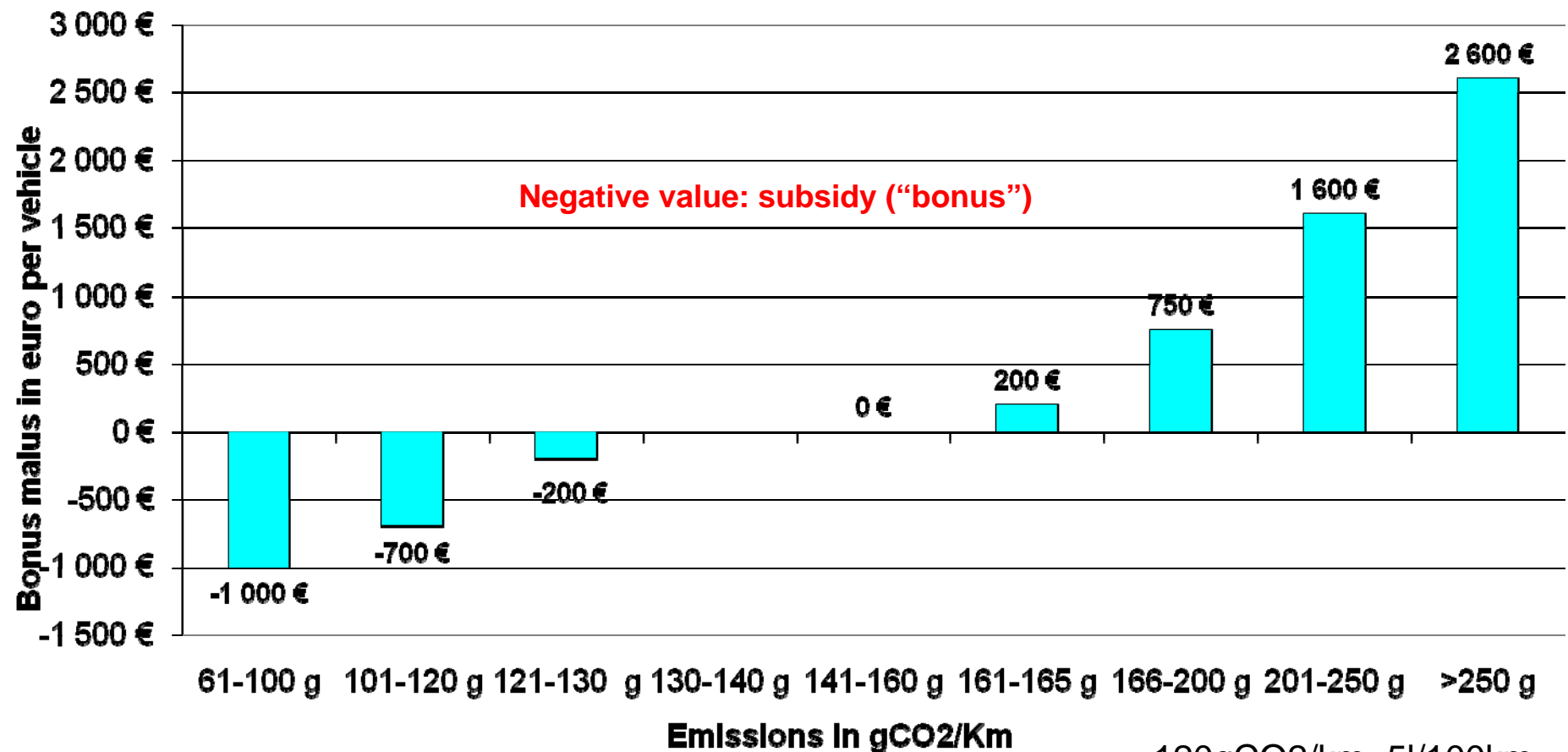
Source: ADEME-WEC survey 2009 (on going)

Fiscal and financial incentives to buy to more efficient/ low emissions **new** cars: the EU experience

- Objective: change from a tax system based on engine power and/or motor fuel to a system based on efficiency/ emission performance
- **Purchase tax** linked to energy efficiency performance (12 countries out of 27) (Austria since 1991 and Denmark since 2000, UK, Hungary, Netherlands, Portugal, Sweden, Cyprus, Ireland, Spain, Finland).
- **Annual car tax** linked to energy efficiency performance (5 countries: Denmark, since 1999, UK Sweden, Ireland, France (company cars only)).
- **Subsidies for efficient /low emission cars** (10 countries) (applied to all types of cars mainly since 2008 (before restricted to electric/hybrid cars)).
- **Combined tax and subsidies** (“bonus malus”) (1 country, France):

Combination of tax and subsidy for car registration : case of bonus malus in France

Principle: the revenue of the tax and the volume of subsidies should be balanced so that there is no cost for the public budget → planned to be expanded to consumer goods



Source: G Callonnec, N Blanc, ADEME

120gCO₂/km~5l/100km
140gCO₂/km~6l/100km

Impact of the bonus malus on new cars in France

- Increase of market share of class B vehicles from 20 to 35% → Reduction of CO2 emissions of new cars by 6% from 148 to 139gCO2km between 2007 and 2008
- Cost due to the success of the measure (M€ 300 for the public budget in 2008) → should disappear with the progressive modification of the rates



Source: G Callonnec, N Blanc, ADEME

Change of New VRT(Vehicle Registration tax) and Annual Motor Tax Rates: case of Ireland

	CO2 Emissions (CO2g/km)	VRT	Motor Tax Rate
A	0 - 120	14%	€104
B	120-140	16%	€156
C	141-155	20%	€302
D	156-170	24%	€447
E	171-190	28%	€630
F	191- 225	32%	€1,050
G	> 225	36%	€2,100

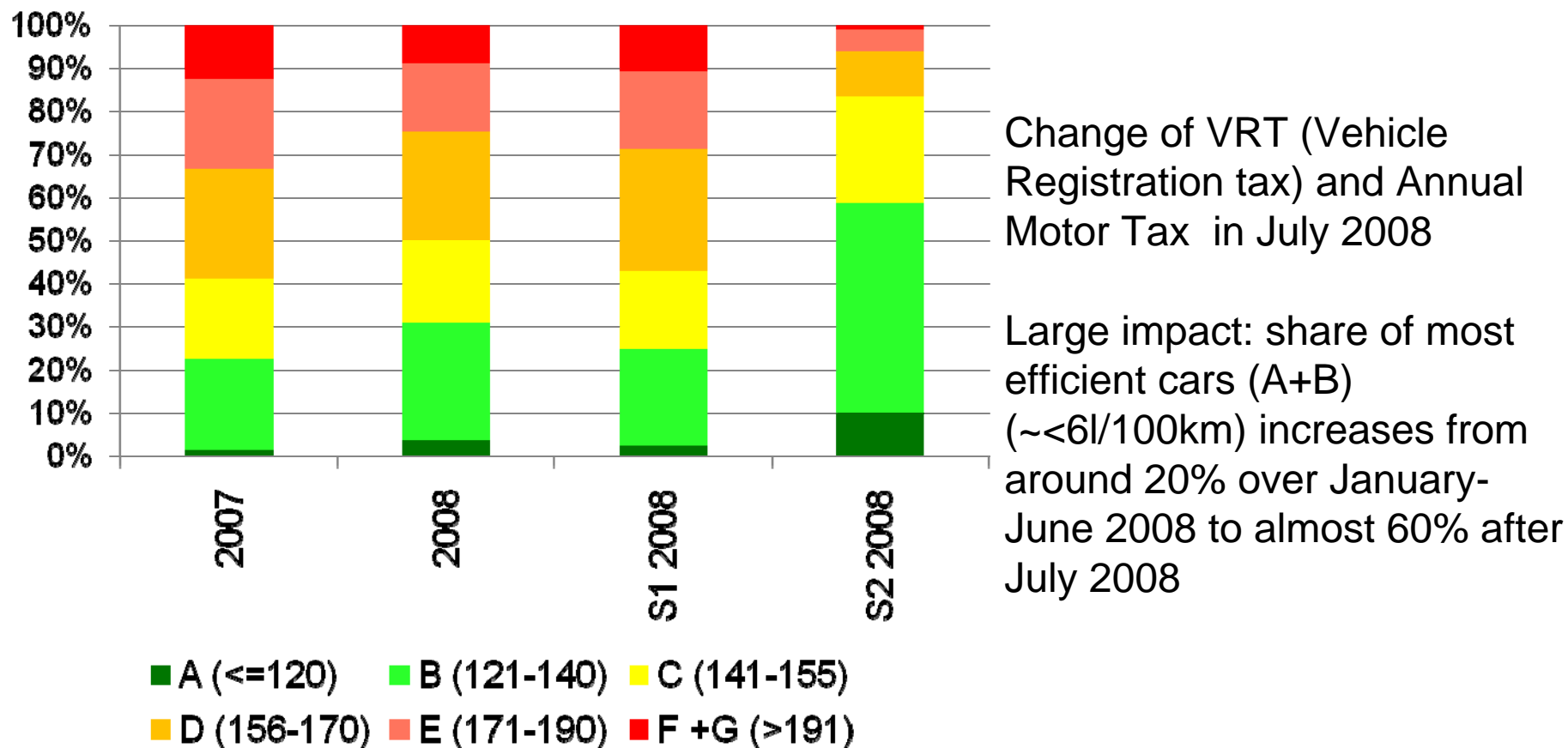
VRT rates and annual tax previously based on engine size

New system implemented in July 2008 based on CO₂ emissions class linked to the labels (A to G).

Doubling of registration tax between the most efficient (A+B) (~<6l/100km) and the least efficient (F+G).

Annual tax around 10 time higher for the least efficient cars

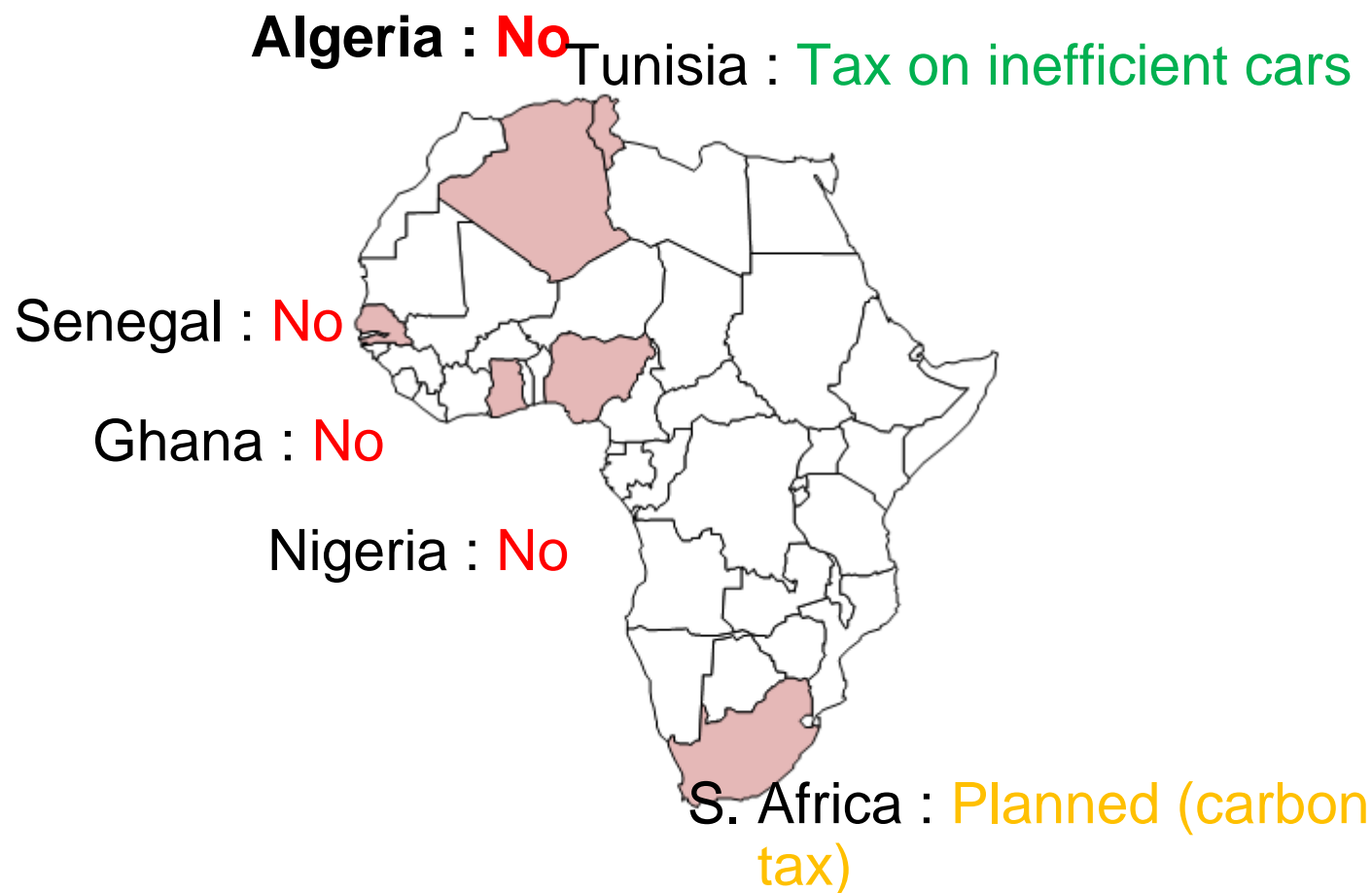
Effect of change of tax on vehicle in Ireland



Source: M Howley, B O' Gallachoir & E Dennehy
Sustainable Energy Ireland

Subsidies/ fiscal measures for energy efficient car

No country with subsidies; one country with tax



Source: ADEME-WEC survey 2009 (on going)

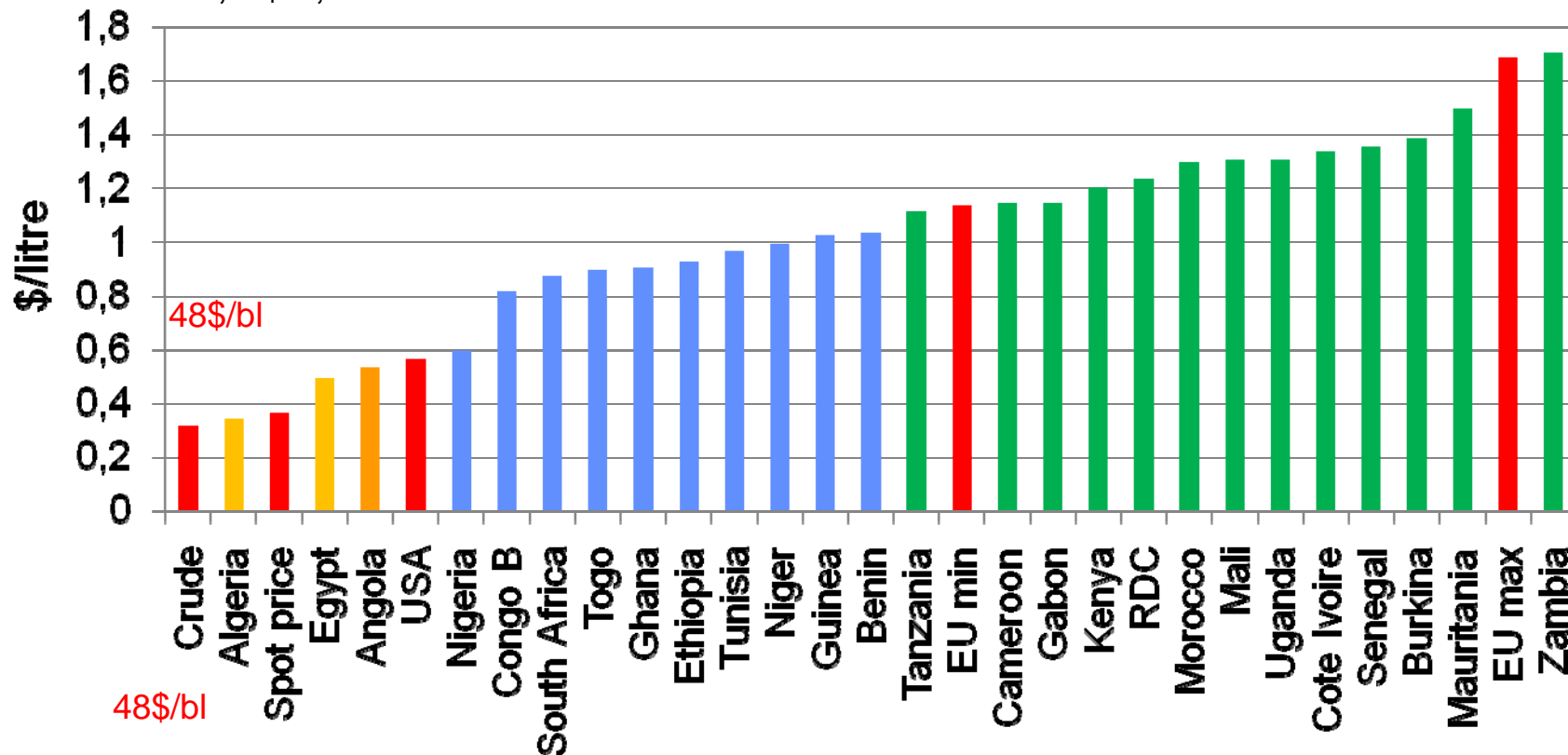
Measures on car efficiency/emissions: regulations/VA to raise the **energy efficiency of new cars**

- EU: EU agreement with ACEA, KAMA and JAMA on new car CO2 emissions: 140gCO2/km as a EU average in 2008 → failed
- EU: New Directive on new cars (December 2008):
 - 130 gCO2 per km from 2015 of each manufacturer's newly registered cars, with intermediate targets: 65% of target in 2012, 75% in 2013 and 80% in 2014
 - Penalty payments for excess emissions to be paid by the manufacturers for each car registered: €5 for the first g/km of excess, €15 for the second g/km, €25 for the third g/km, and €95 for each subsequent g/km. From 2019, penalty of €95 from the first g/km of excess.
- Japan: top-runner (dynamic target to be achieved)
- China
- USA: CAFE (suspended in mid 80,s planned to be reintroduced)

➤ Prices and taxes

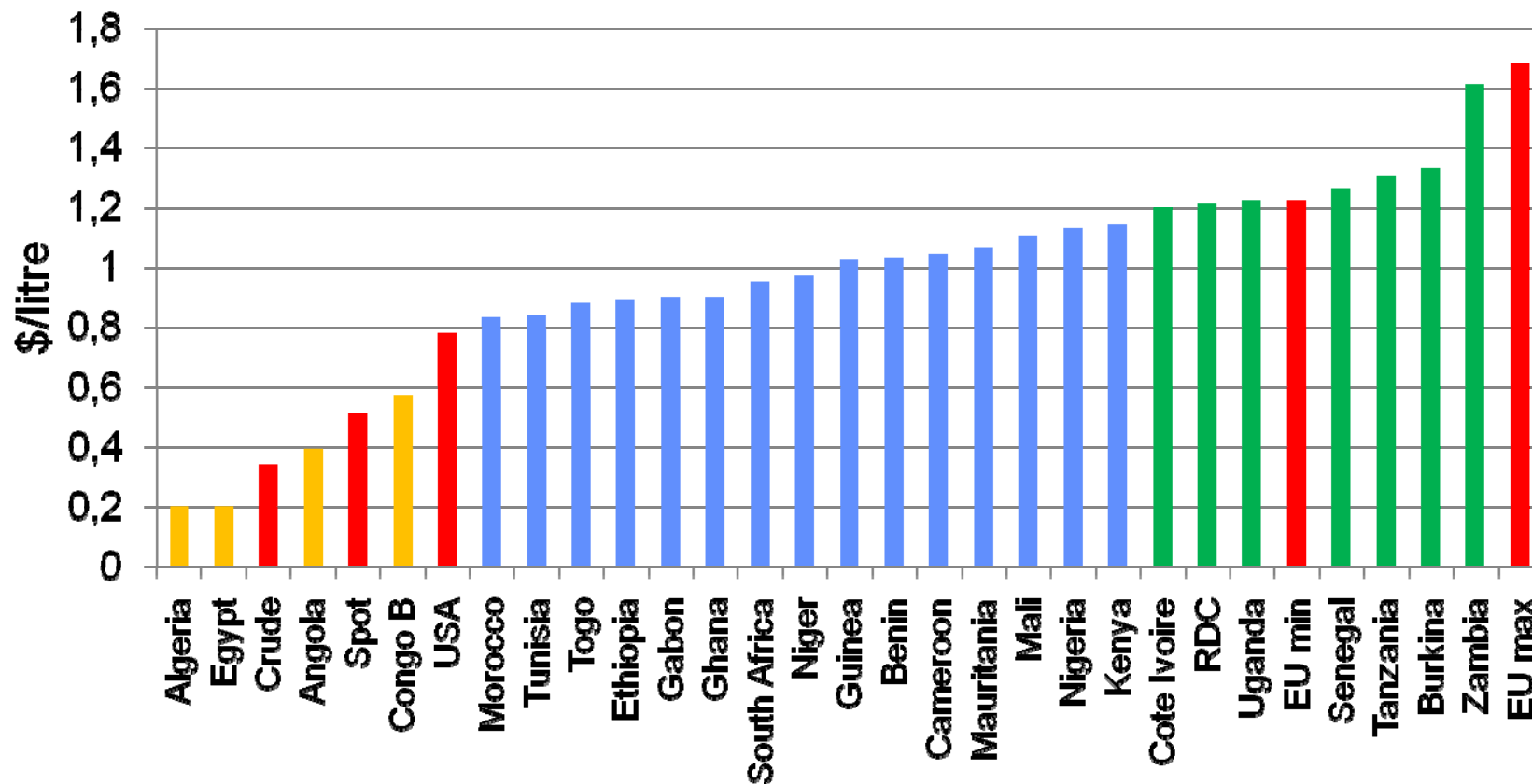
Gasoline price in African countries (mid november 2008)

- Very large diversity in gasoline price
- Several countries selling gasoline closed to the price of crude oil or the spot price (4 countries below 0,5\$/l, i.e. with subsidies)
- 12 countries with very high tax with gasoline price closed above EU lowest price (1.1\$/l), of which 2 > 1,4 \$/l ;



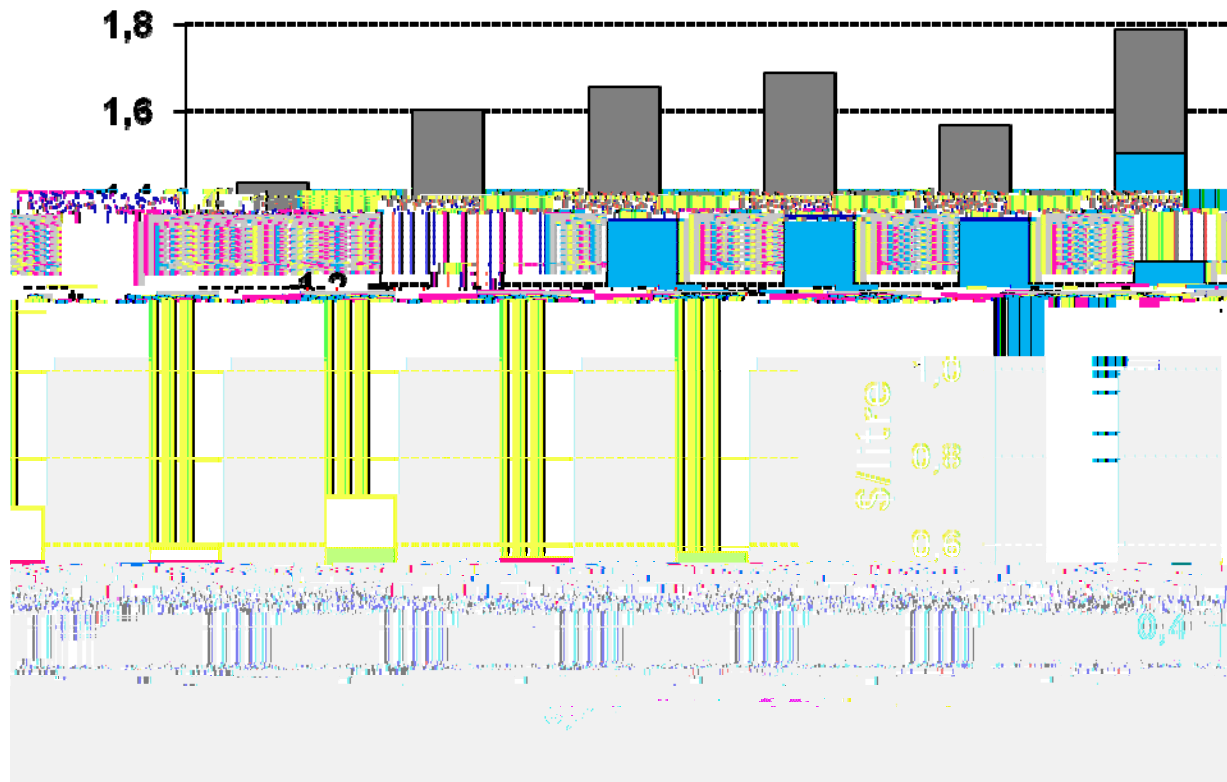
Diesel price in African countries (mid november 2008)

- Very large diversity in diesel price, with two countries with very low price below the price of crude oil and 2 more countries with price around or below the spot price;
- 7 countries with very high tax and price closed to EU countries (above 1.2\$/l)



« Green taxes » on motor fuels

Tax on motor gasoline* (Fourth quarter 2008)



5 OECD countries with green tax (CO₂/environment tax): 4 Scandinavian countries and Germany

Some countries with high tax have no "green tax" (e.g. Netherlands, but also Belgium, UK, Portugal)

Part of the revenue may be recycled to support energy /CO₂ efficiency measures

1 Euro = 1.3 \$

Conclusions

- Measures on cars mainly in OECD countries and... China , the largest consumers
- Largest effort to raise the efficiency of new cars, especially very recently in 2008/2009
- Should benefit with some delays to African countries
- Long term trends seem to be towards cheaper and smaller cars → may increase the diffusion of cars and may not favour energy efficiency
- Incentive prices important to influence the behaviour of consumers both when purchasing cars and for using their cars
- Subsidised price → high costs for public budget especially with very high price such as in 3rd quarter 2008