

## **Passenger Cars and CO<sub>2</sub>** The Legislative Process and Future Developments

**Patrick ten Brink**  
Senior Fellow and Head of Brussels Office

**Malcolm Fergusson**  
Senior Fellow and Head of Transport Programme, IEEP  
Institute for European Environmental Policy (IEEP)

[ptenbrink@ieep.eu](mailto:ptenbrink@ieep.eu) [mfergusson@ieep.eu](mailto:mfergusson@ieep.eu)  
[www.ieep.eu](http://www.ieep.eu)

Brussels  
22 October 2008



Institute for  
European  
Environmental  
Policy

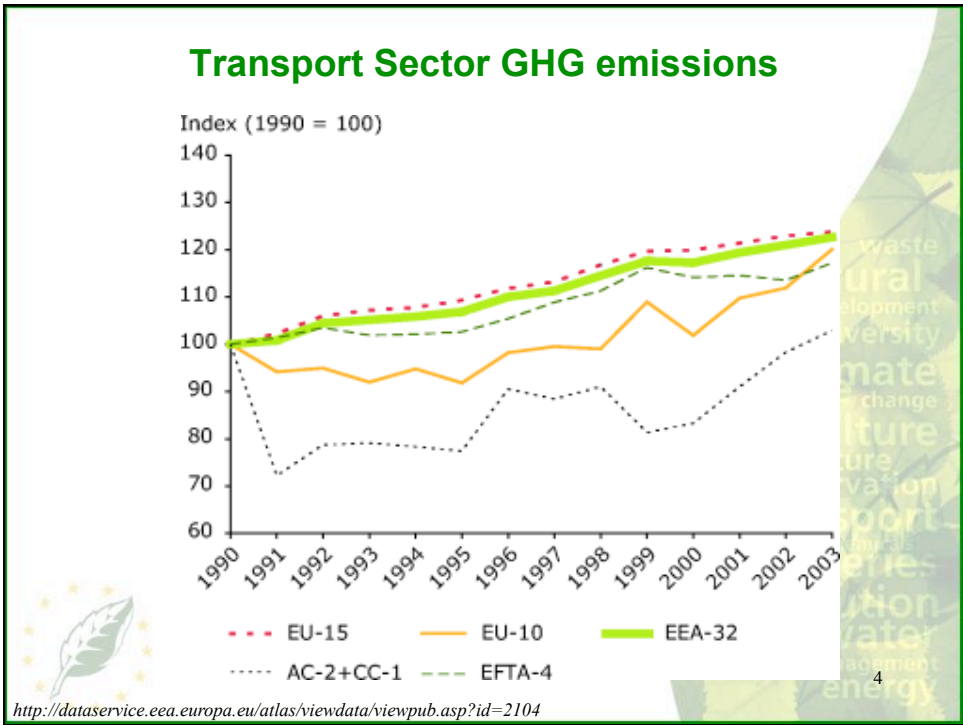
## **Presentation Structure**

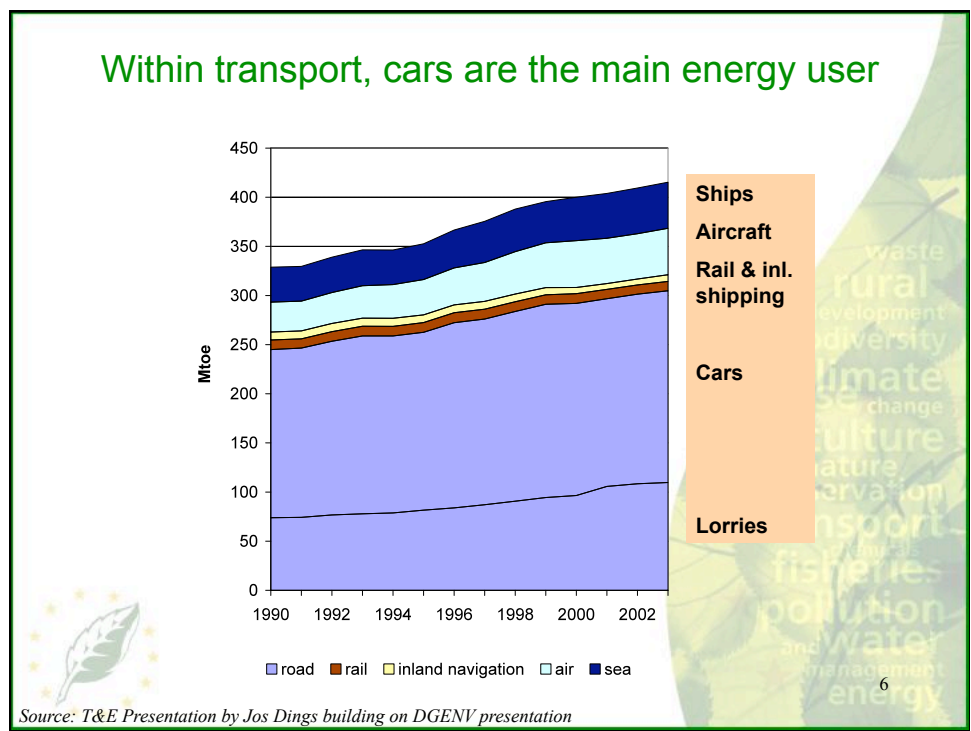
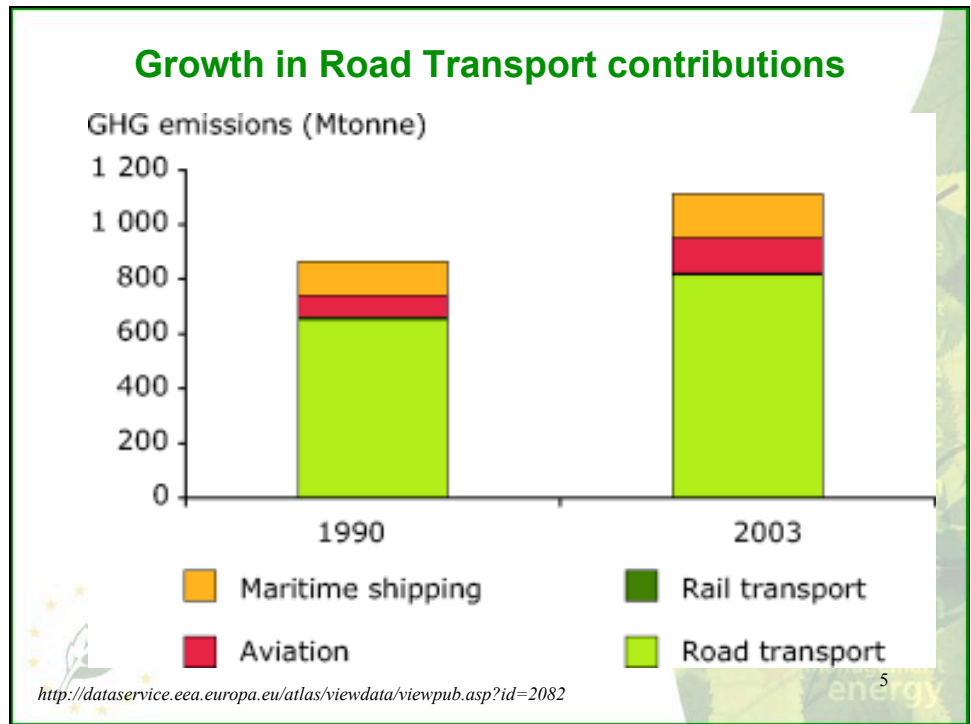
- **Context – history and emissions from transport**
- **The Passenger Car CO<sub>2</sub> strategy and its history**
- **Resulting Proposals - instruments, targets and costs**
- **Current status**
- **Future developments**

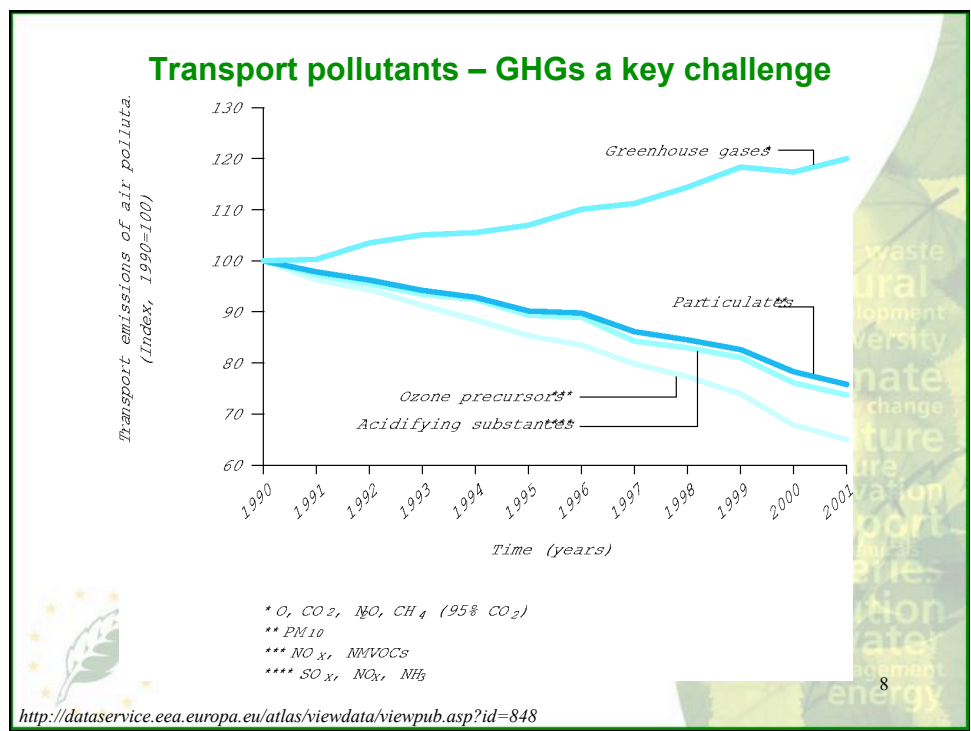
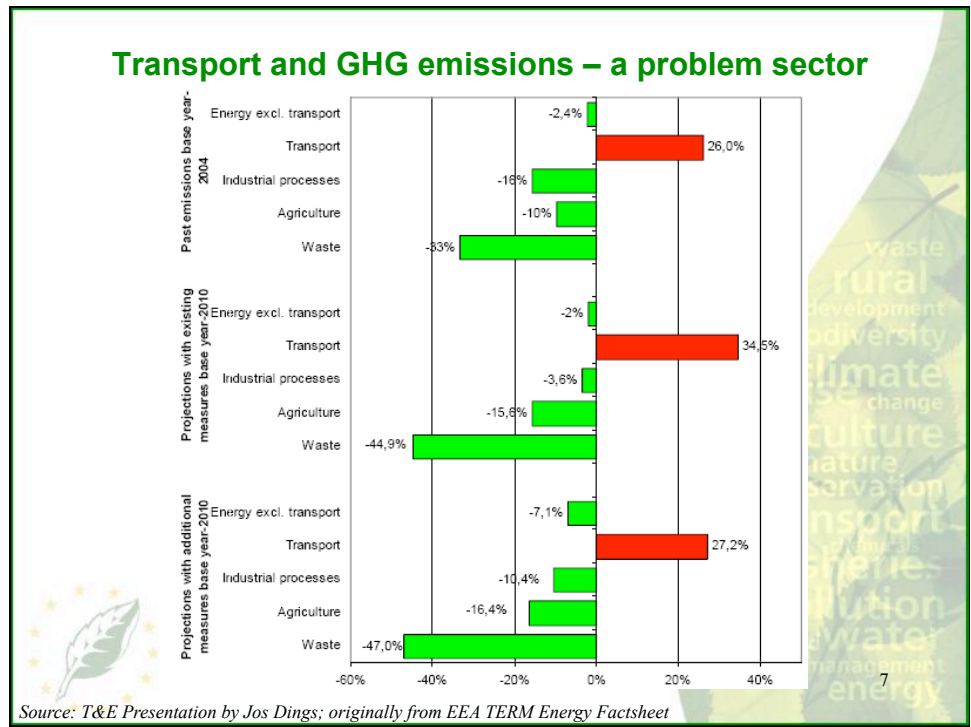


# The CONTEXT

## History and Background







## Transport: A Brief History of CO2 issues

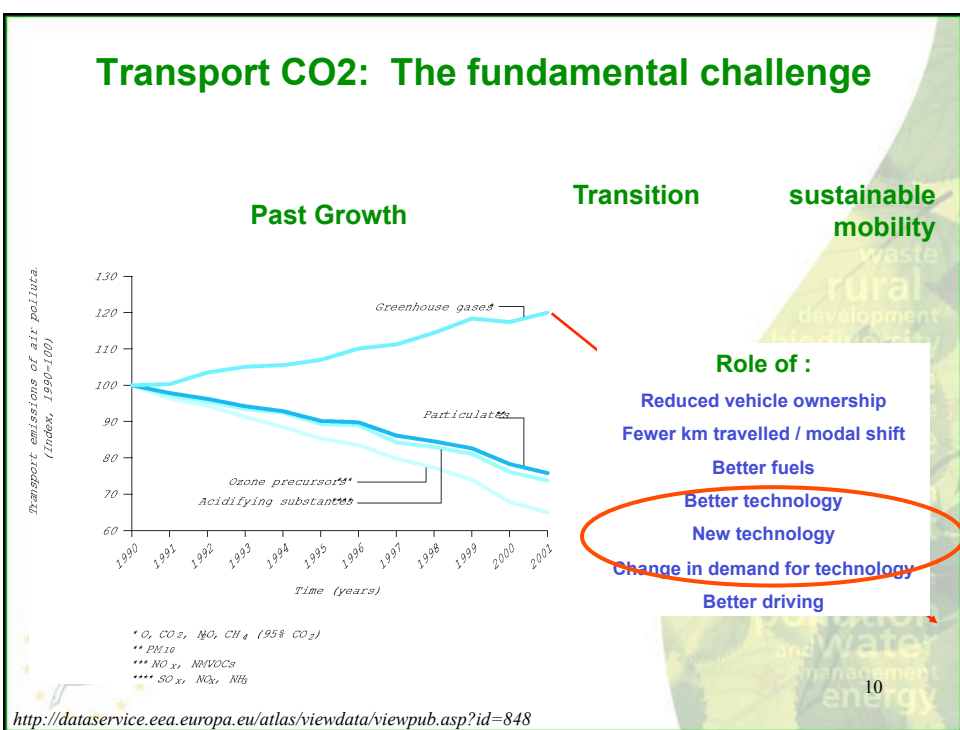
- **1990s:** Fuel economy not improving
- **1993:** EU ratifies Framework Convention on Climate Change
- **1995:** EP publishes objective of 120g/km target
  - Commission publishes passenger car CO<sub>2</sub> strategy
  - target 120g/km by 2005 (or 2010 at latest)
- **1997:** Carmakers threatened with legislation
- **1998/9:** Voluntary Agreements with manufacturers' associations
  - 140g/km by 2008/9
- **2000:** Monitoring Mechanism (1753/2000) established
- **2001:** CO<sub>2</sub> Labelling required (1999/94)
- **2005/6:** Review of Passenger Car CO<sub>2</sub> Strategy
- **2007:** Cars 21 and pressure for *integrated approach*
- **2008:** New legislative proposal for 120 g/km for 2012, but really 130g/km
- **2014:** Expect new legislative proposal for 2020
- **2050:** Decarbonisation of passenger transport

Regular analysis of progress + of potential tools for beyond the 2008/9 target by institutes for the European Commission

9

Source: Building on earlier presentation by Malcolm Fergusson

## Transport CO2: The fundamental challenge



## Passenger Cars CO<sub>2</sub> Strategy: 3 pillars

**EU objective: To achieve a fleet average of new passenger car of 120 g CO<sub>2</sub>/km by 2012 (equivalent to 4.5 l/100 km diesel or 5l/100km gasoline)**

### Three pillars

#### Agreements with car industry (recognised self-commitments)

- Negotiated in 1999/2000 with the European, Japanese and Korean car manufacturers associations (resp. ACEA, JAMA & KAMA)
- Member States provide independent monitoring data on new cars sold (Dec 1753/2000)
- Target: 140g CO<sub>2</sub>/km by 2008/2009 → Annual Joint Reports

#### Consumer information

- Directive 1999/94/EC adopted in December 1999 and amended in 2003
- Possible future improvements: harmonised label with energy efficiency classes, and inclusion of light commercial vehicles in addition to cars

#### Fiscal measures

- July 2005 Commission proposal for a Council directive (COM(2005)261) aims at requiring MS that have taxes to base their calculation on CO<sub>2</sub> emissions
- Currently being discussed in Council

↓  
Annual Communications to the Council and Parliament - see Commission web pages: EU CO<sub>2</sub> and cars strategy:

[http://ec.europa.eu/environment/co2/co2\\_home.htm](http://ec.europa.eu/environment/co2/co2_home.htm)

Source: DGENV Presentation

11

## Consumer information system (1999/94/EC)

- labelling of fuel consumption and CO<sub>2</sub> emissions
- the production of a fuel consumption and CO<sub>2</sub> emissions guide
- displaying posters in car showrooms
- the inclusion of fuel consumption and CO<sub>2</sub> emissions data in advertising, brochures, etc.



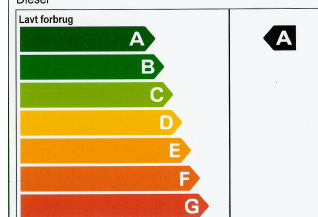
Danish Energy Label

### Energi

Audi  
A2 3L 1,2 TDI aut.



Diesel



Brændstofforbrug i km pr. liter	33,3
CO <sub>2</sub> -udslip i gram pr. km	81
Økonomioplysninger	
Ejeravgift pr. år	150
Brændstofudgifter i kr. pr. år (beregningseksempel ved 20.000 km og 7 kr/liter)	4.204
Sikkerhedstest EuroNCAP	
- Kollisionsikkerhed	★★★★★
- Fodgængervenlighed	★★★★★
Yderligere oplysninger på <a href="http://www.euroncap.com">www.euroncap.com</a> eller <a href="http://www.folgr.dk">www.folgr.dk</a>	
Partikelfilter	nej

\* efter modelbetegnelsen, betyder nyeste model  
En oversigt over brændstofforbrug og CO<sub>2</sub>-udslip for alle nye personbiler fås gratis på alle salgsskeder og kan ses på [www.hvorlangpaalderen.dk](http://www.hvorlangpaalderen.dk).

Ud over bilens oplyste brændstofforbrug spiller også køremåde en rolle for en bilens faktiske brændstofforbrug og CO<sub>2</sub>-udslip. CO<sub>2</sub> er den drivhusgas, der er hovedansvarlig for den globale opvarmning.

Forbrug til klimaanlæg o.lign. indgår ikke i oplysningerne om brændstofforbrug. Diesel: Udstødningsgassen fra dieselmotorer, der ikke er forsynet med partikelfilter, vurderes at være mere sundhedsskadelig end udstødningsgassen fra benzindrivne motorer.

### Fiscal Measures – nation wide and local

#### Fuel tax; car tax schemes and the London's congestion charge

**Fuel Taxes**


- Petrol and diesel taxes and differentials in rates
- National price “escalators” - eg UK
- Tax rates for other fuels: CNG, biofuels

**Car taxes (registration, circulation...)**

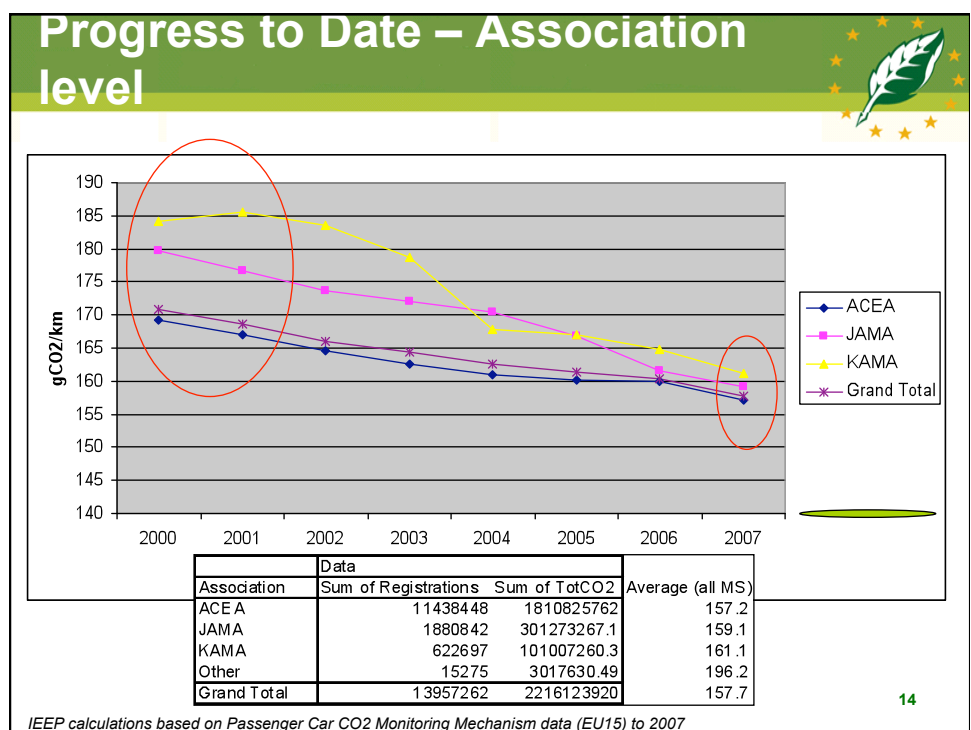
- Very different across MS (eg reg. tax v high DK)
- UK - registration taxes first moved to CO2 rating
- ... others have followed

**London Congestion charge (started Feb 2003)**

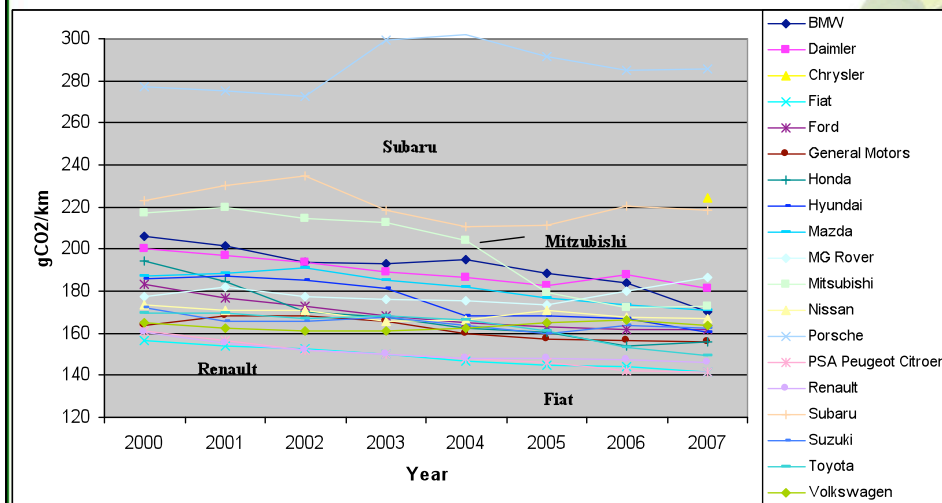
- Covers 21km<sup>2</sup>, 1.3% of greater London
- Being expanded and price has gone up from £5



13



### Manufacturers and CO2 emissions Progress at different rates at different times from different starting points



IEEP calculations based on Passenger Car CO2 Monitoring Mechanism data (EU15) to 2007

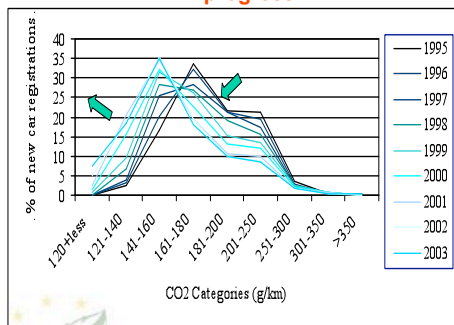
### Who is doing well and badly – depends on how you look at it : emissions or emissions reductions

Group	2000	2006	2007	2000 to 07	2006 to 07
BMW	205.8	183.7	170.3	-17.3%	-7.3%
Daimler	200.2	187.6	180.9	-9.6%	-3.6%
Fiat	156.4	144.2	141.3	-9.6%	-2.0%
Ford	183.1	162.2	161.8	-11.6%	-0.3%
General Motors	163.5	156.8	155.9	-4.7%	-0.6%
Honda	194.4	154.2	155.8	-19.9%	1.1%
Hyundai	186.2	167.0	160.5	-13.8%	-3.9%
Mazda	187.0	173.3	170.9	-8.6%	-1.4%
MG Rover	177.5	179.7	186.3	5.0%	3.6%
Mitsubishi	217.1	172.5	173.0	-20.3%	0.3%
Nissan	173.4	168.0	166.6	-3.9%	-0.8%
Porsche	277.0	285.3	285.3	3.0%	0.0%
PSA Peugeot Citroen	161.1	142.3	141.1	-12.4%	-0.9%
Renault	160.3	147.1	146.4	-8.7%	-0.5%
Subaru	223.2	221.7	218.6	-2.1%	-1.4%
Suzuki	172.2	166.4	164.1	-4.7%	-1.4%
Toyota	169.7	153.0	149.2	-12.1%	-2.5%
Volkswagen	165.3	166.4	163.4	-1.1%	-1.8%
<b>Grand Total</b>	<b>170.9</b>	<b>160.4</b>	<b>157.7</b>	<b>-7.8%</b>	<b>-1.7%</b>

IEEP calculations based on Passenger Car CO2 Monitoring Mechanism data (EU15) to 2007

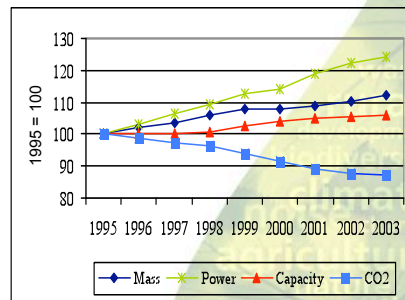
## What has been happening ? Fleet evolution

**ACEA's "wave-effect" of CO<sub>2</sub> categories towards enhanced fuel efficiency (g/km)**  
**>> progress**



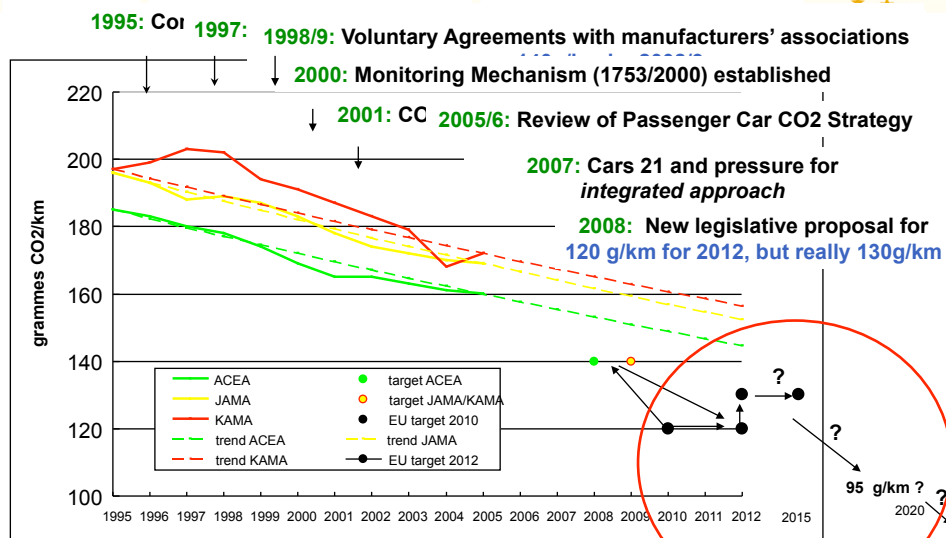
(source: Commission/ACEA joint report on CO<sub>2</sub> and cars, reporting year 2003)  
 From Cars and CO<sub>2</sub> Presentation by DGNEV

Source: DGENV Presentation



**Physical ACEA Fleet Characteristics (1995=100)**  
**Product changes – growth in power, mass and capacity, complicates CO<sub>2</sub> reductions**

## Progress to Date and shifting targets



Source: T&E Presentation by Jos Dings

## Developing Ideas on Legislation



19

## Revised strategy on CO<sub>2</sub> from passenger cars and light commercial vehicles 2007

**Overall objective: 120 g/km CO<sub>2</sub> by 2012 : ave. new vehicle registrations**

**Instrument: legislative framework**

### Specific targets:

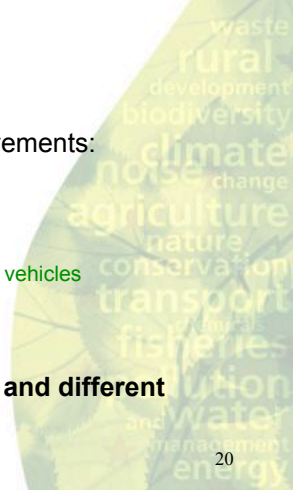
Average new car fleet of 130 g/km CO<sub>2</sub>

Additional 10 g/km by other technological improvements:

- Efficiency requirements for air-conditioning systems
- Tyre pressure monitoring systems
- Low rolling resistance tyres
- Gear shift indicators
- Mandatory fuel efficiency targets for light-commercial vehicles
- increased use of biofuels

>> The “integrated approach”

**Review in 2010 to explore longer term objectives and different approaches beyond 2012**



20

## Principles for future legislation

### Targets and the implementing measures must be:

- Technologically neutral
- Competitively neutral
- Socially equitable and sustainable
- Equitable to the diversity of the European automobile manufacturers
- Avoid unjustified distortion of competition between manufacturers



21

## Targets and Instruments (1)

### Analysis has addressed 3 types of TARGET

- a **percentage reduction** from a reference year
- a **sloped target curve** linked to utility criteria (see below)
- a **fixed emissions target** to be met by all (ie 130g/km)

Flexible



Inflexible



22

## Targets and Instruments (2)

... and at 3 types of **INSTRUMENT**:

- Emission reduction requirements for **individual vehicles**
- a **manufacturer bubble** ie manufacturer as a whole can meet the target on average
- a **trading scheme** between manufacturers

**Inflexible**



**Flexible**



23

## Main Target/Instrument Combinations

### Car-based

- Each car to meet 130g/km
- Each car to meet segment or utility-based limit

### Manufacturer-based

- Each mfr to meet 130g/km
- Each mfr to meet x% reduction from year yyyy
- Each mfr to meet own utility-based target

### Fleet-based

- As for manufacturer-based, but with trading

**Inflexible**



**Flexible**



24

## Limits and Targets

- **Limit values**
  - Set an upper limit above which models are excluded
  - **Pros** easy to understand and operate
  - **Cons** inflexible; can have drastic effects; sensitive
- **Target values**
  - Set an average value for a fleet
  - **Pros** more flexible and 'fair'
  - **Cons** harder to understand or operate
  - **And** needs averaging mechanism



25

## Classes and Utility Functions

- These are useful to *classify* vehicles or *normalise* emissions
- They allow us to recognise that 'big' vehicles tend to emit more CO<sub>2</sub> than 'small' ones

### Market Segments

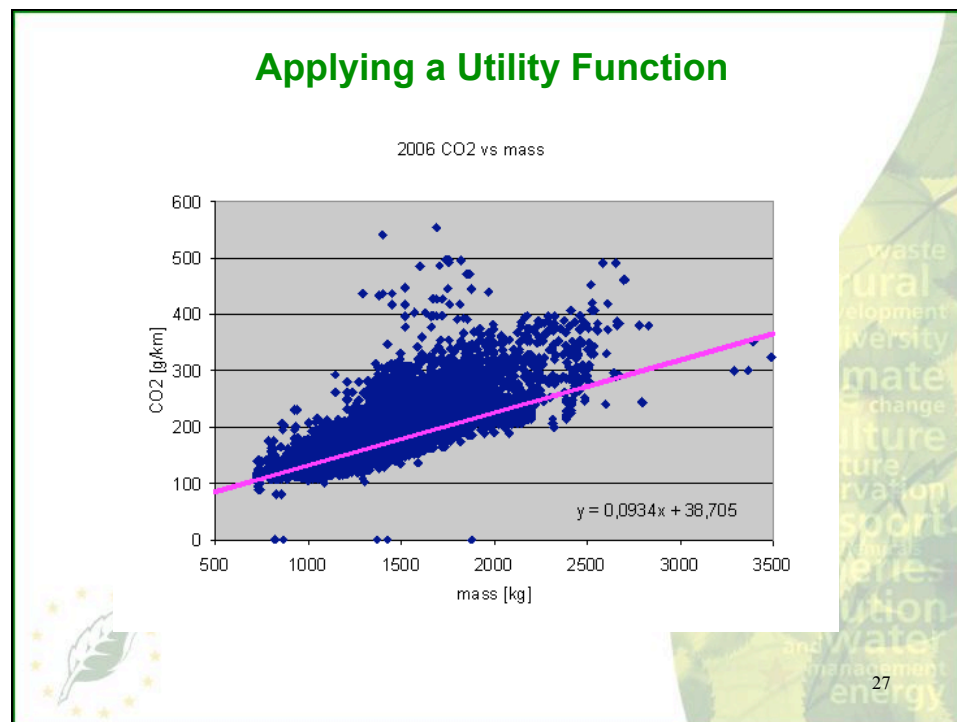
- **Pros** available and easy to understand
- **Cons** probably unworkable!

### Utility Functions

- **Pros** much greater flexibility
- **Cons** harder to understand, no ideal metric available, possibility of perverse effects



26



- ### Legal and Institutional Matters
- **Who should be main Obligated Entities?**
    - Manufacturers' associations?
    - Manufacturer groups?
    - Dealers or importers?
    - Member States?
  - **Should system operate at MS or Community level?**
    - Commission stated preference for EU-level scheme
    - ... though most legislation works through Member States
  - **What Sanctions to apply?**
    - Exclude from market?
    - Fines?
    - Enforced trading between mfrs?
  - **Definitions**
    - What constitutes equal treatment?
    - How can we reflect past efforts?
    - How to reflect diverse positions of mfrs in market?

## The Proposal and Next Steps



29

### The Proposal

- **A Regulation – administered at Community level**
- **Obligations placed on car manufacturer holding companies (ie not individual brands or cars)**
- **A utility function based on weight**
  - With a 'slope' of about 65%
- **Used to calculate a corporate target**
- **To be met by annual sales weighted CO<sub>2</sub> of new cars**
- **Increasing fines for non-attainment**
- **Intended to meet 130g/km on average**



30

## Points at Issue

### Merkel-Sarkozy position

- **Seeks to water down the proposal**
  - 'Substantial phasing in' of compliance
  - Further credit for 'eco-innovations'
  - 2020 target of 95-110g/km
  - Lower fines

### CARS21 MTR

- **The 2020 target**
- **Utility Function – weight or footprint?**
- **The test cycle**
- **Towards a global market for cars?**
- **Substantial decarbonisation of road transport by 2050**



31

## Legislation in Progress – October 2008

### The Parliament

- **Many competing interests in different Committees**
- **Vigorous lobbying from all sides**
- **'Flexibility mechanisms' endorsed by ENVI rapporteur**
- **- but voted down by the Committee**
- **Hence EP now pursues essentially the original proposal in negotiations**

### The Council

- **Only carmaking countries fully engaged**
- **Franco-German 'Merkozy' Pact dominates discussion**
- **Italy (and others) have been less involved but have views**
- **Some countries have constructive views re decarbonisation (eg UK)**

- **Then..**



32

### ...then.....and the result?

It then goes into Conciliation with highly divergent positions on all the key points, so hard to see what comes out.

- Probably eco-innovation will stay in, maybe
- some watering down of the phase-in period ?
- reduced fines?
- Intermediate wording on 2020 target but no number?

Then results to be voted on at First Reading in plenary in both Council and EP,

- and as it is a first-reading conciliation text they can only accept or reject wholesale in their first and only plenary vote.
- both have problems with their own positions & those of the other party, they could vote it down >> no legislation till new Commission end 2009.

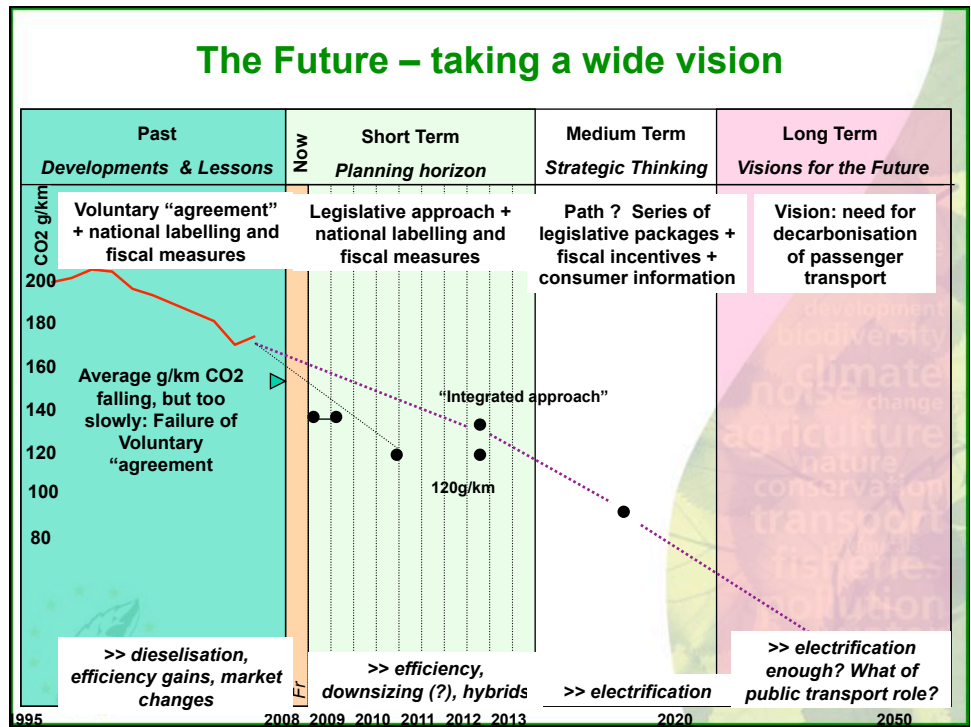
The last is not likely, but a very bad omen for the rest of the climate/energy package were it to happen.

... and the Result??

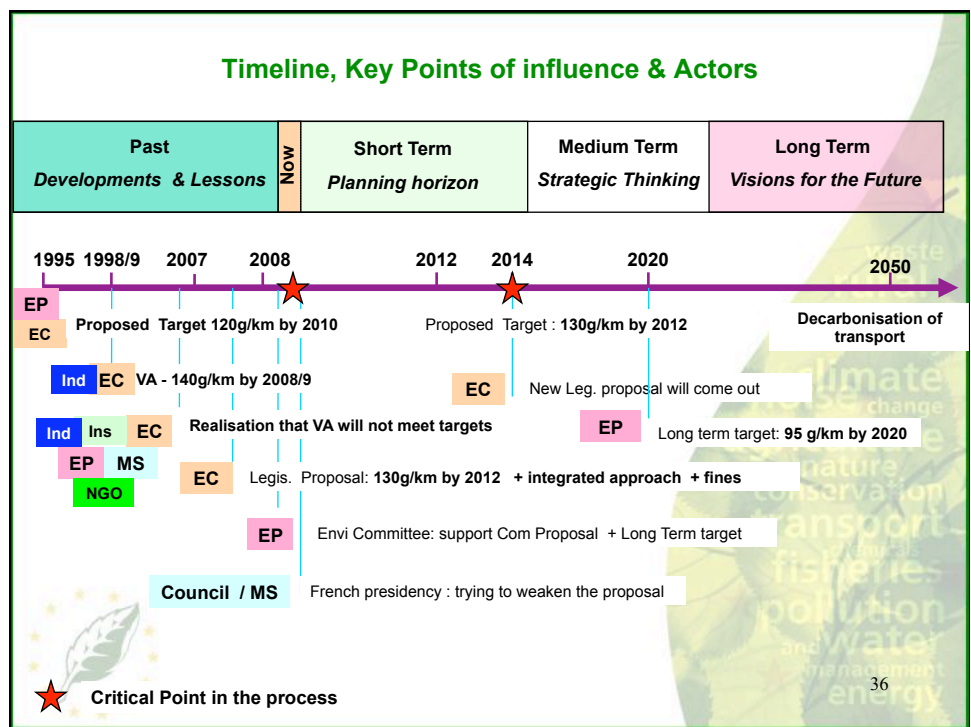
### Future Developments

- Extra legislation on tyres and lubricants
- Eco-innovations and test cycle
- Extending the system to vans
- Action on HGVs?
- More radical measures for cars
  - 95g/km by 2020?
  - towards decarbonisation by 2050?

## The Future – taking a wide vision



## Timeline, Key Points of influence & Actors



<b>Policy Needs &amp; Opportunities</b>	
<b>Development and Lessons</b>	<b>Past</b>
<ul style="list-style-type: none"> <li>• ACEA/KAMA/JAMA CO2/km "voluntary agreements" – failed to deliver; no hope for VA for future</li> <li>• National approaches re Labelling generally poor; Fiscal incentives variable</li> </ul>	
<b>Action Now</b>	<b>Present</b>
<ul style="list-style-type: none"> <li>• Support the appropriate finalisation of the CO2 for passenger cars legislation</li> <li>• Support the appropriate finalisation of the low emissions vehicles and GPP legislation</li> <li>• MS Level: progress of fiscal measures, labelling, green public procurement</li> </ul>	
<b>Planning Horizon</b>	<b>Short term</b>
<ul style="list-style-type: none"> <li>• Planning for 2014: New legislation for Cars               <ul style="list-style-type: none"> <li>• Analysis, Stakeholder discussions etc.</li> <li>• Putting in place more national measures to support – fiscal measures, labelling etc</li> </ul> </li> </ul>	
<b>Strategic Thinking</b>	<b>Medium term</b>
<ul style="list-style-type: none"> <li>• What is the maximum feasible sustainable biofuels contribution?</li> <li>• Where to put research funding for technology developments ?</li> <li>• Infrastructure developments : electrification (yes), hydrogen (?)</li> </ul>	
<b>Planning for the Vision:</b>	<b>Long term</b>
<ul style="list-style-type: none"> <li>• Ensure that key processes – such as CARS 21 HGL accept 2050 as a vision horizon and that decarbonisation is an inevitable need</li> </ul>	

## Passenger Cars and CO2 The Legislative Process and Future Developments

Thank You!  
Any Questions?

**Patrick ten Brink**  
Senior Fellow and Head of Brussels Office  
Institute for European Environmental Policy (IEEP)  
[www.ieep.eu](http://www.ieep.eu)

On behalf of the wider IEEP transport team  
**Malcolm Fergusson, Emma Watkins**



**Institute for  
European  
Environmental  
Policy**

waste  
rural  
development  
biodiversity  
climate  
noise change  
agriculture  
nature  
conservation  
transport  
fisheries  
pollution  
and water  
management  
energy

37