

Reducing CO2 emissions

Briefing by Ivan Hodac
Secretary-General

Brussels, 7 February 2007



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What is ACEA?

The backbone of the European economy

- 13 companies, CEOs member of the Board
- 28 National Associations as associate members
- Supplier of mobility, economic activity and cultural life
- 18 million vehicles produced per year
- 1.9 million direct jobs, more than 10 million indirect
- 19 billion € in R&D investment
- 33.5 billion € of net trade contribution
- 340 billion € of tax revenues

BMW Group



DAIMLERCHRYSLER



PSA PEUGEOT CITROËN



VOLVO

VOLKSWAGEN AG

Commission Communication

- Focuses too much on vehicle technology
- Is not based on sound facts and figures (independent ECCP consultant)
- Is not cost-effective, to the detriment of environment *and* economy
- Denies complexity and global nature of problem
 - Emissions from new cars are going down, traffic is rising
 - Car emissions 11% in the EU, globally 5%, European share: 1,5%

Impact on Competitiveness

- **Loss of employment and manufacturing in EU**
 - “car exports decrease and car imports increase”
 - “some shifting of jobs and production outside the EU is happening especially within the small car segment”
 - Russia “could be an interesting new product location for European volume brands”
 - “at the supplier industry, additional job cuts have to be expected”

(all quotes from Commission's Draft Impact Assessment)

Cost-effectiveness: Integrated Approach

- Vehicle technology
- Alternative Fuels
- Infrastructure adjustments
- Consumer behaviour
- Consumer informatio
- CO2-related taxation

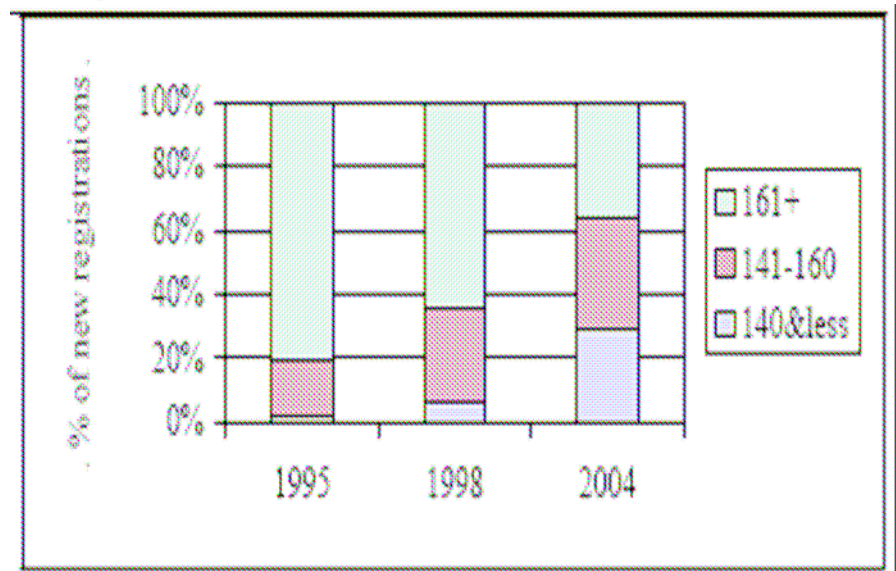


Recommended by CARS 21, ECMT, EEAP...

Why an Integrated Approach?

- Lessons from the 1998 Commitment:
 - 13% reduction through vehicle technology only
 - lack of demand for fuel-efficiency

- Combining efforts is cost-effective for society
- Targets new and existing cars on the roads



- Addresses global and complex nature of reducing CO2 emissions

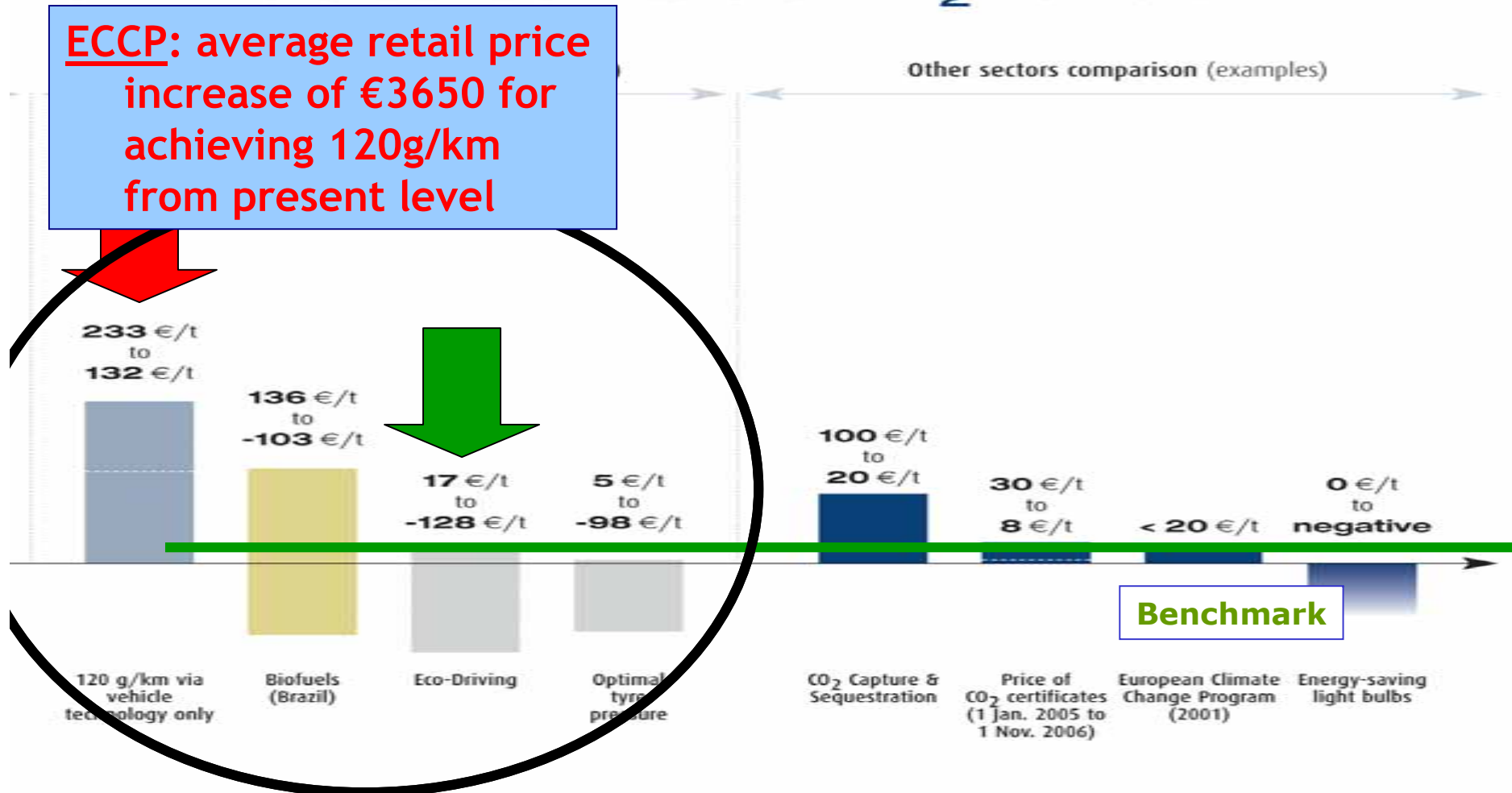
Where do we stand?

- Car industry is committed to reducing CO2
 - 1998 agreement has delivered large CO2 reductions
 - Yearly 20 billion euros in R&D
- Need for full evaluation of results
 - External factors are part of Commitment and have to be taken into account
- Demand – not supply – challenge!
 - Politicians need to do their jobs: taxation, labelling
- Impact Assessment essential
 - Check cost-effectiveness
- Integrated Approach
 - CO2 related taxation

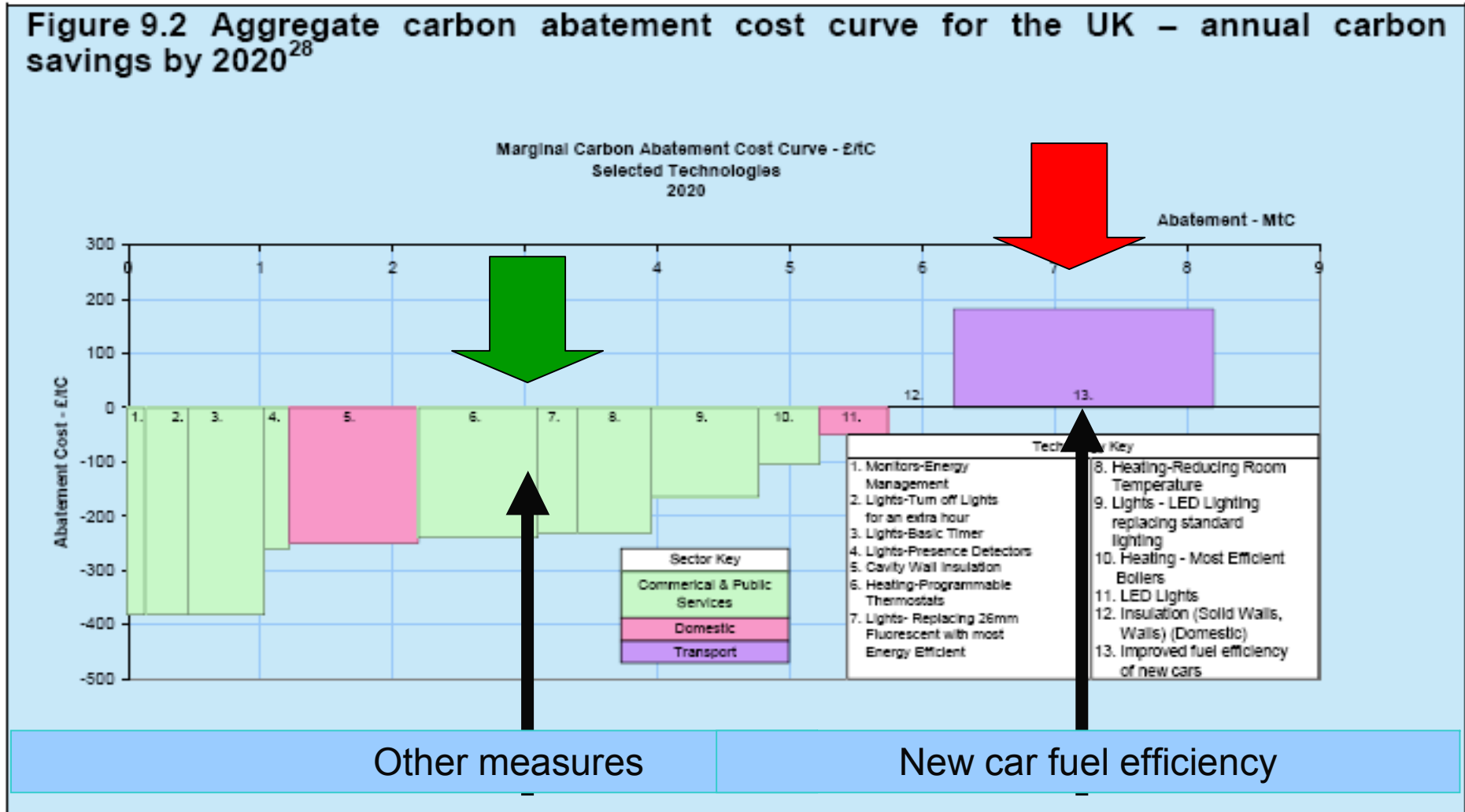
What is best policy for future?

- Independent ECCP2 consultant for Commission (TNO)

Estimates of Societal Costs for CO₂ Reductions

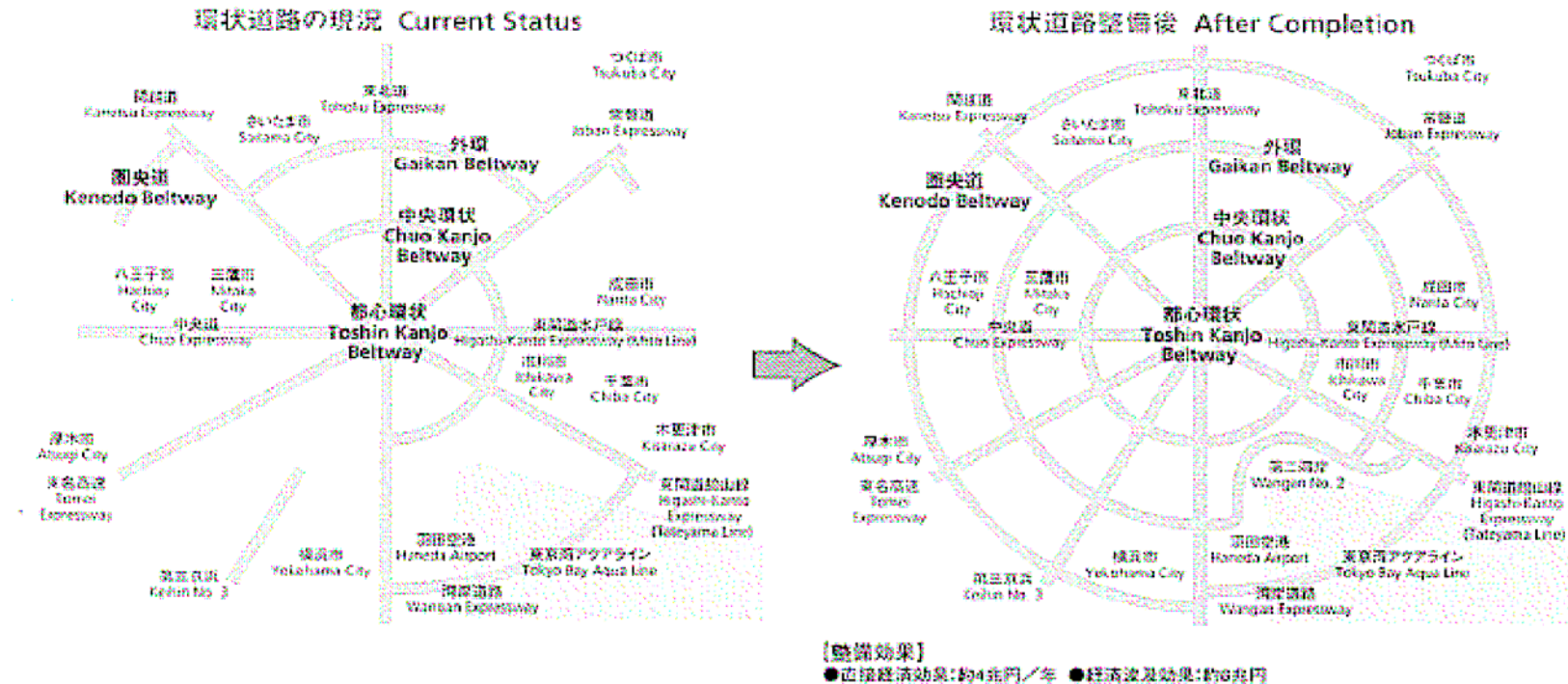


Stern Review confirms high vehicle technology costs



Infrastructure

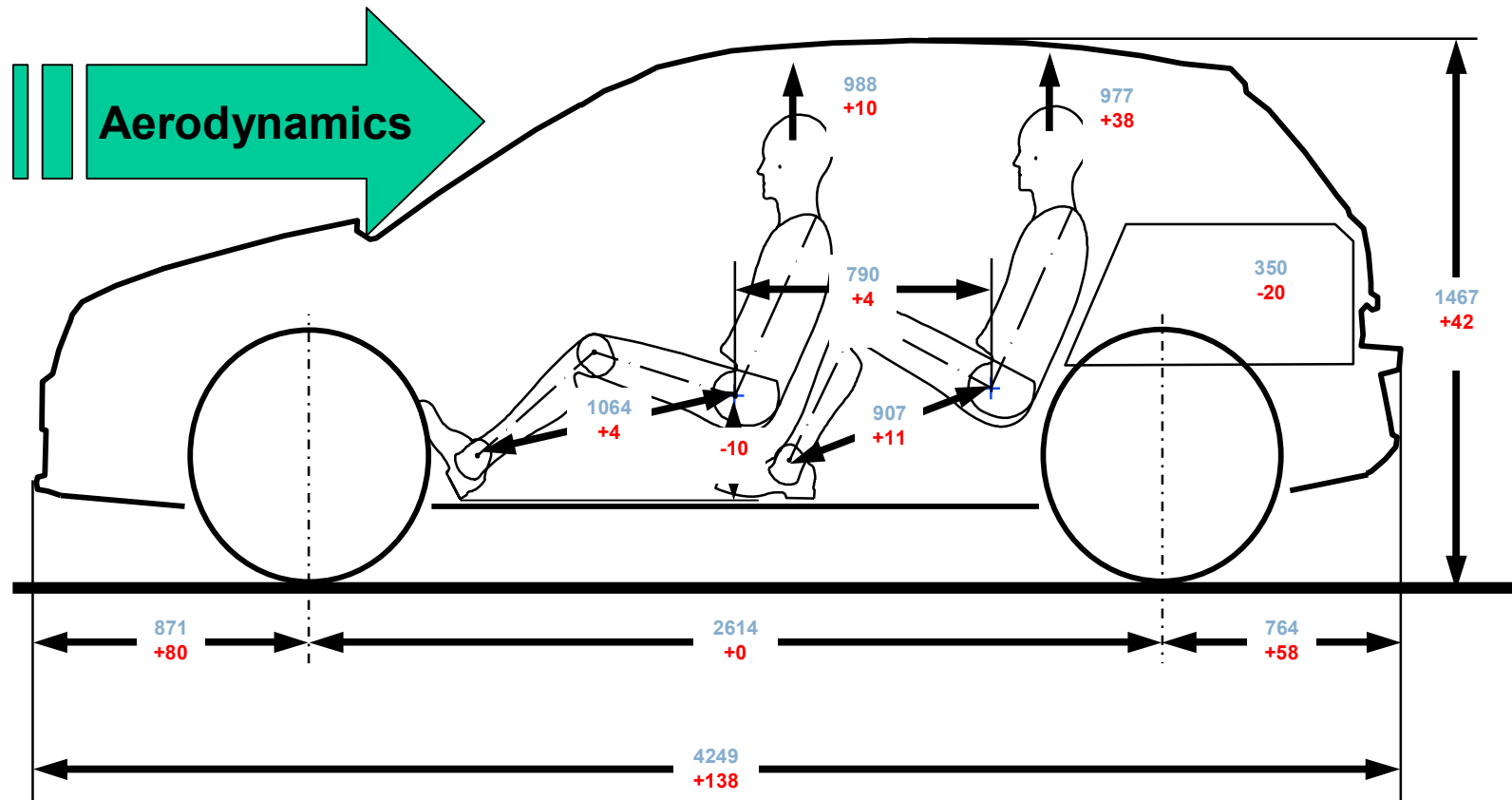
◎ 首都圏の環状道路整備計画と整備効果 ROAD NETWORK IMPROVEMENTS IN THE GREATER TOKYO REGION



- Japanese government counts 28Mt CO2 reductions through infrastructure in Kyoto implementation plan
- 2.4Mt CO2 annual savings through dynamic traffic lights
- 40% reduction of rolling resistance (5% CO2 reduction) by road surface measures
- Works across park!

Size increase

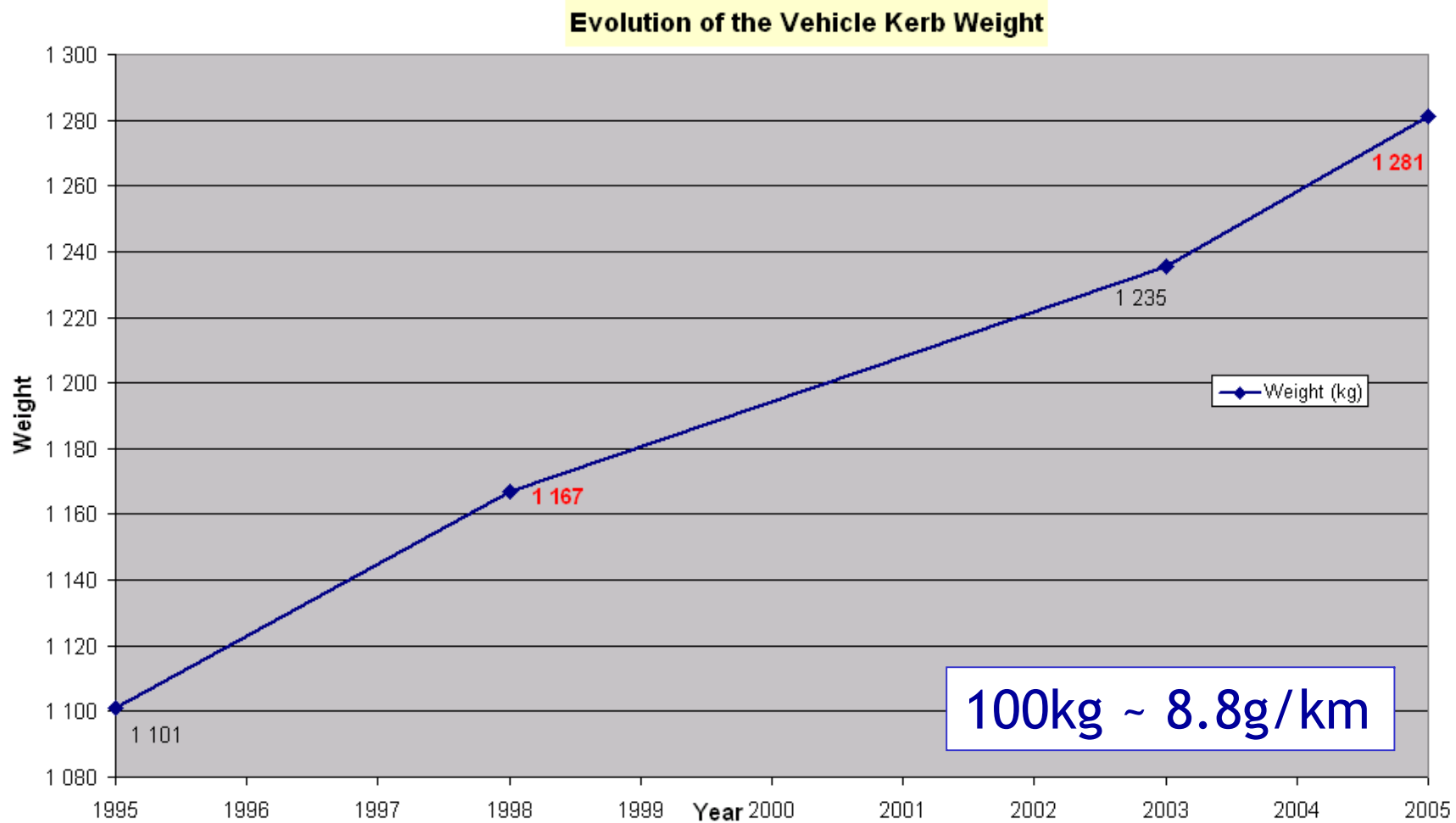
- Population gets taller (and larger)
- Population gets older (-> higher seat position)
- Population commutes longer (-> comfort sought)



Example of typical compact car

Weight increase

- 16.3% or 180kg (1995 – 2005)
- Comfort, size, crash safety, airbags, DPFs, etc.



Car industry takes responsibility seriously

Introduction Year	New CO ₂ Efficient Technology		
<ul style="list-style-type: none"> • 1995-1996 	<ul style="list-style-type: none"> • Direct-injection diesel engines 	<ul style="list-style-type: none"> • 2003 	<ul style="list-style-type: none"> • Double clutch/Direct Shifting gearbox • 7-speed fuel-economy optimised automatic transmissions • Common rail injection system with 1600 bar • Unit injector of 2050 bar • Energy management control systems, including load levelling, to reduce engine idle speed • Electro-hydraulic power assisted steering system • Fully electric power assisted steering
<ul style="list-style-type: none"> • 1997-2000 	<ul style="list-style-type: none"> • New generation of advanced diesels, notably incorporating common rail technology • Automated Manual Transmission • Gasoline direct injection (GDI) engine models launched 		
<ul style="list-style-type: none"> • 2001 	<ul style="list-style-type: none"> • Two-step variable valve timing • Valve train with roller finger followers (lower friction) • Fully variable valve lift & timing • Variable length Intake Manifold • 2nd generation diesel common rail injection (high pressure) • Exhaust gas turbochargers with variable nozzle geometry turbine • Application of advanced diesel technology to smaller engines, and consequently to small cars • 6-speed automatic gearbox • New generation of bio-fuelled vehicles 	<ul style="list-style-type: none"> • 2004 	<ul style="list-style-type: none"> • New generation turbocharged small displacement diesel engines introduced • Variable Twin Turbo technology on diesel engines • Piezo-injection systems on diesel engines • Stop-start with regenerative braking • 2nd generation friction optimised rear-axle gearbox • Torque converter lock-up for 1st gear on automatic transmissions across model-range • High efficiency alternator • Regulated electrical fuel pump
<ul style="list-style-type: none"> • 2002 	<ul style="list-style-type: none"> • Fully variable valve lift & timing technology combined with GDI • Variable length intake manifold on small gasoline engines • Fast warm-up cooling system • Torque converter lock-up for 1st gear on automatic transmissions • Low-viscosity/friction oil across model-range • Friction optimised rear-axle differential • Engine covering/under body panelling for vehicle aerodynamic improvement 	<ul style="list-style-type: none"> • 2005 	<ul style="list-style-type: none"> • 2nd generation Valvetronic (fully variable valve lift & timing system) • Twin-charger technology for gasoline vehicle combined with downsizing of combustion engine • Roll-out of LED technology for high volume segments with benefits concerning electric energy consumption • Hydro-high-pressure forming for high strength structures with weight advantages • Advanced cooling system with electric water pump • Electronically controlled oil pump • 3rd generation common rail injection system

EUCAR projects in area of CO2

Name	Type of Project
• RENEW	• Producing fuels from biomasses
• NICE	• New Integrated Combustion System for Future Passenger Car Engines
• HyICE	• Optimisation of a Hydrogen powered Internal Combustion Engine
• StorHy	• Hydrogen Storage Systems for Automotive Application (gas, liquid, solid state)
• HyTRAN	• Hydrogen and Fuel Cell Technologies for Road Transport
• HyWays	• Development & Detailed Evaluation of a Harmonised EU Hydrogen Energy Roadmap
• Silence	• Quieter Surface Transport in Urban Areas
• GREEN	• Green Heavy Duty Engine
• Roads2HyCom	• Research co-Ordination, Assessment, Deployment & Support to Hydrogen Community
• HySys	• Fuel Cell Hybrid System Component Development
• HyLights	• A Coordination Action to Prepare European Hydrogen and Fuel Cell Demonstration Projects
• Hi-CEPS	• Highly Integrated Combustion Electric Propulsion System
• PAGODE	• Post-treatment for next Generation Of Diesel Engines
• Super Light Car	• Low weight body in white through mixed material use