Public Hearing on CO2/cars

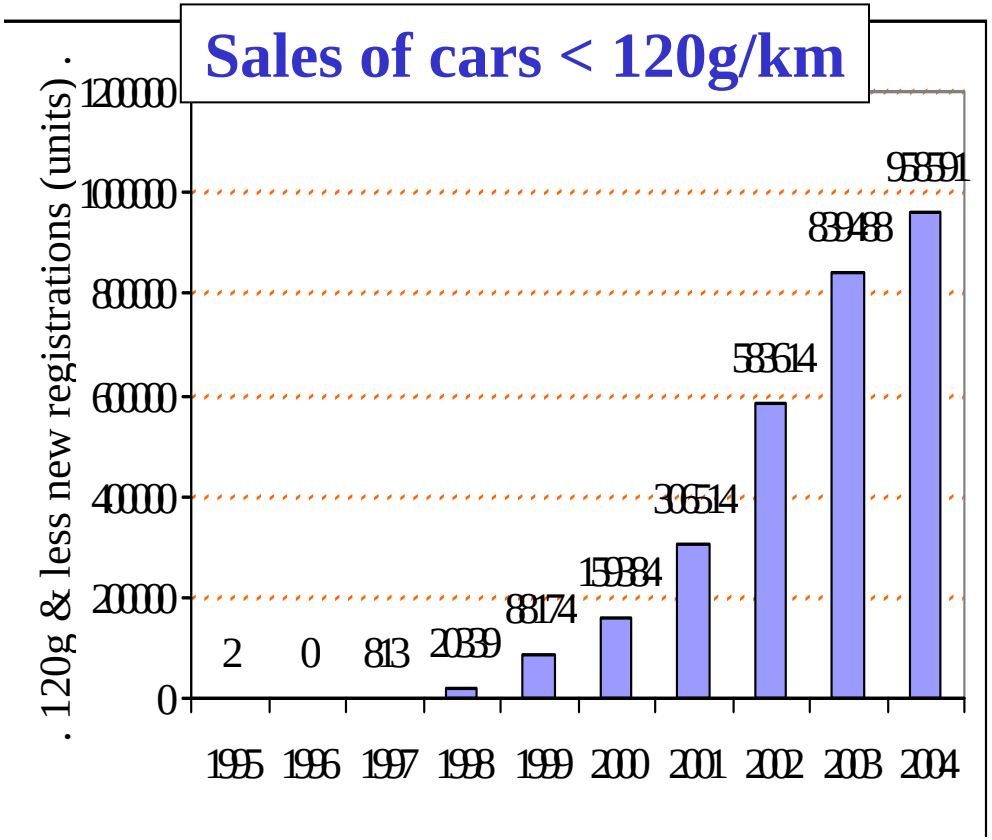
ACEA contribution

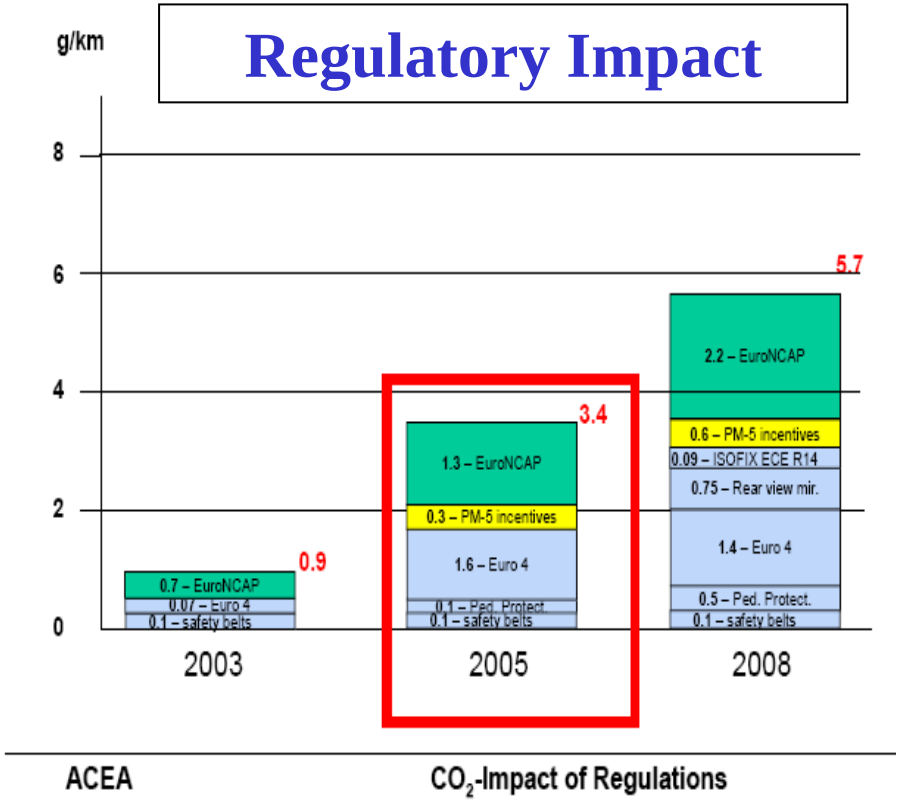
Ivan Hodac, Secretary-General

11 July 2007

Voluntary commitment

- EU 3-pillar strategy: only Commitment delivered
- Unbroken reduction trend: 13% by 2004
- Fleet composition changed towards CO2 efficiency
- External factors (e.g. regulation, market changes) need to be considered





Past progress via technologies

- Increasing marginal abatement costs through technology

Introduction Year	New CO_2 Efficient Technology
• 1995-1996	• Direct-injection diesel engines
• 1997-2000	• New generation of advanced diesels, notably incorporating common rail technology • Automated Manual Transmission • Gasoline direct injection (GDI) engine mode
• 2001	• Two-step variable valve timing • Valve train with roller finger followers (low • Fully variable valve lift & timing • Variable length Intake Manifold • 2nd generation diesel common rail i pressure) • Exhaust gas turbochargers with variable n turbine • Application of advanced diesel technolo engines, and consequently to small cars • 6-speed automatic gearbox • New generation of bio-fuelled vehicles
• 2002	• Fully variable valve lift & timing techno with GDI • Variable length intake manifold on small ga • Fast warm-up cooling system • Torque converter lock-up for 1st gear transmissions • Low-viscosity/friction oil across model-rang • Friction optimised rear-axle differential • Engine covering/under body panelling aerodynamic improvement
• 2003	• 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
• 2004	• 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
• 2005	• 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

Way forward: Integrated Approach

- ACEA supports reaching political target of 120g/km
  - **Significantly more ambitious than EU target of 20% reduction between 1990 and 2020**

- Automotive industry will continue making major efforts

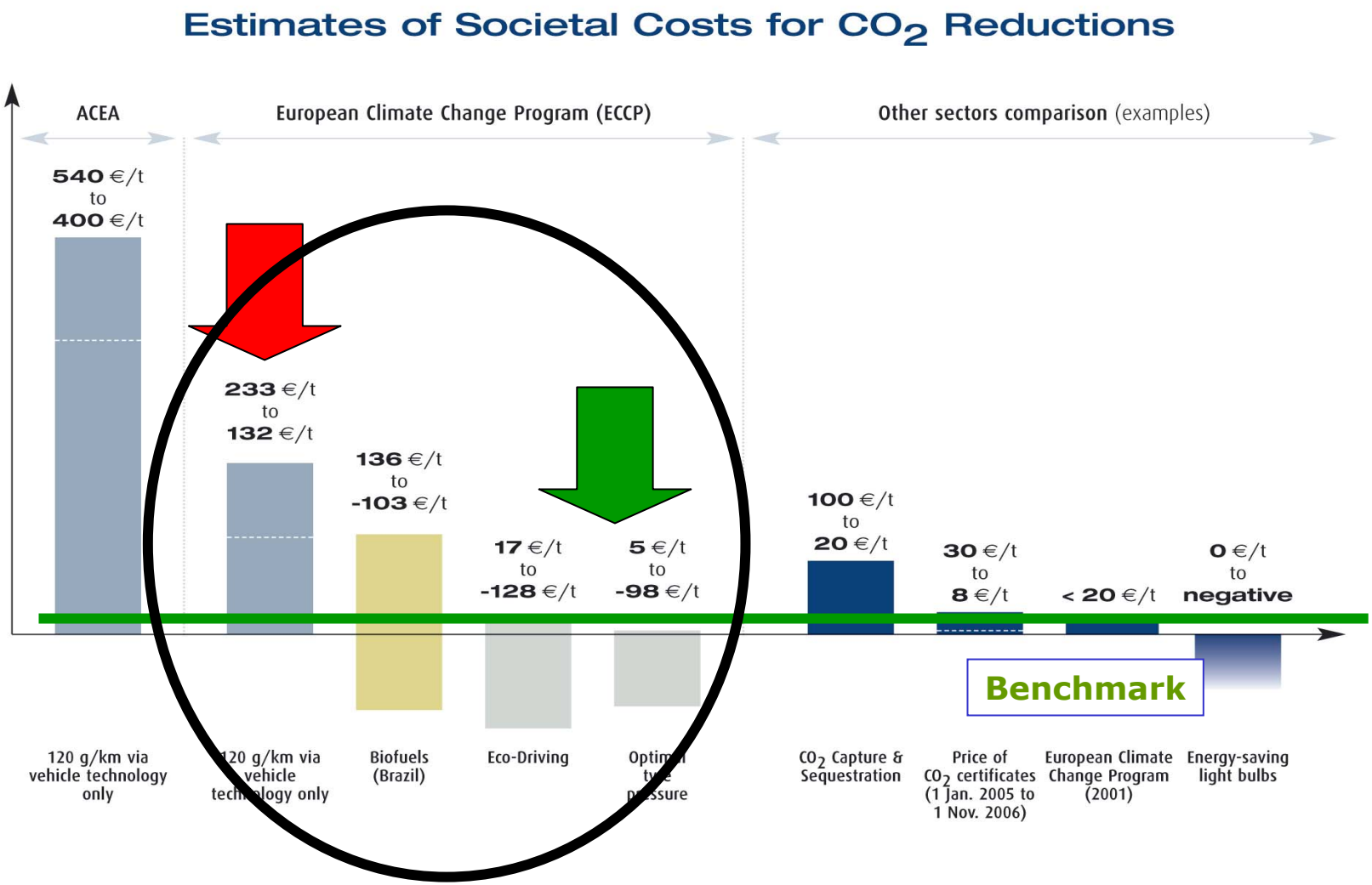
- As part of an **Integrated Approach**
  - Car technologies
  - Alternative fuels
  - Eco-driving
  - Infrastructure measures

- Automotive industry supports CO2-based taxation
  - Harmonised; linear; revenue-neutral

Energy Efficiency Action Plan & CARS 21 endorsed Integrated Approach

Cost-effectiveness

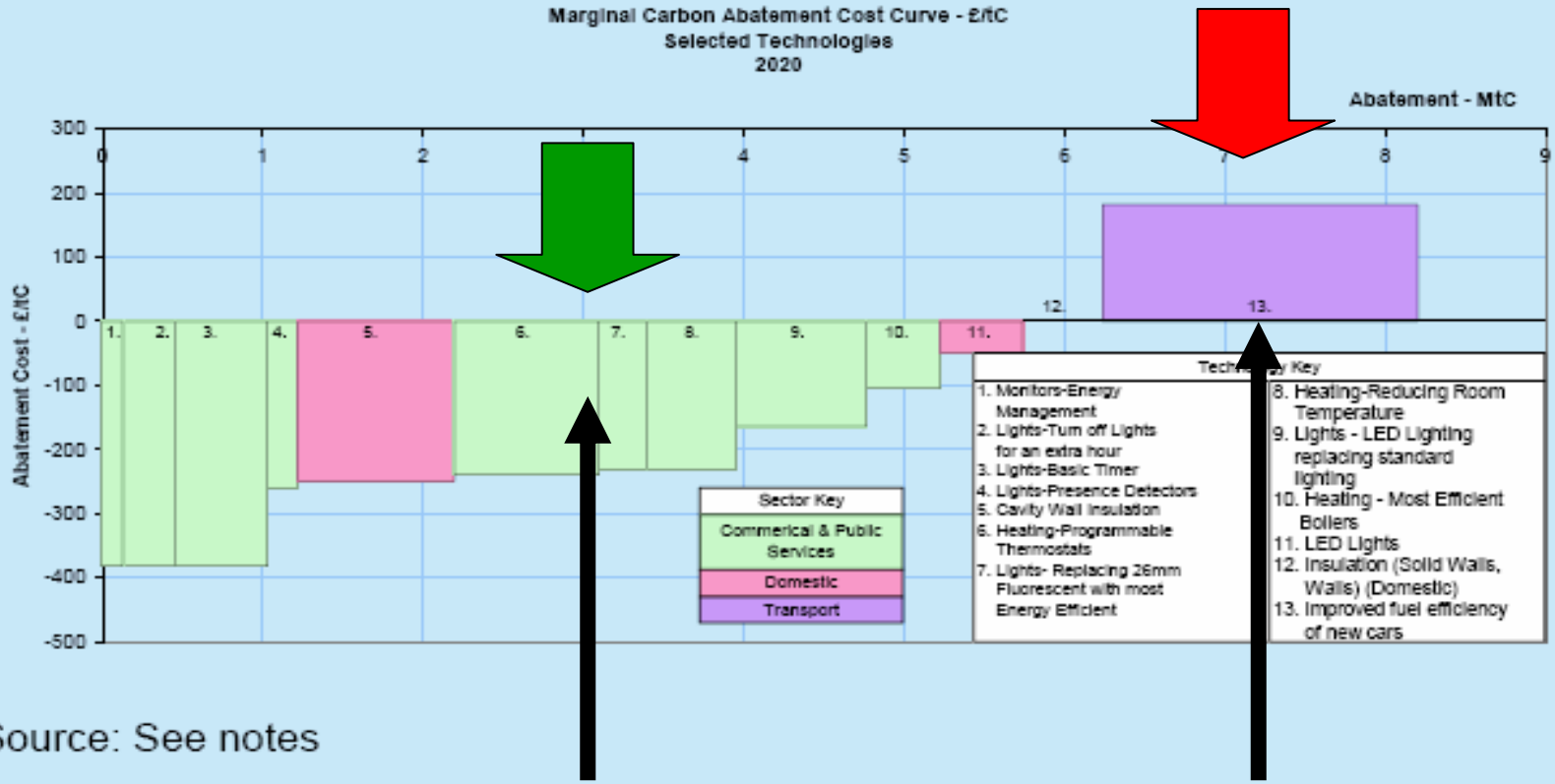
- ECCP: car technology is high-cost measure
- Cost-effectiveness means reaching environmental targets at lowest cost to society



Cost-effectiveness (2)

- Stern Review: car technology is high-cost measure
- Cost-effectiveness means reaching environmental targets at lowest cost to society

Figure 9.2 Aggregate carbon abatement cost curve for the UK – annual carbon savings by 2020[28]

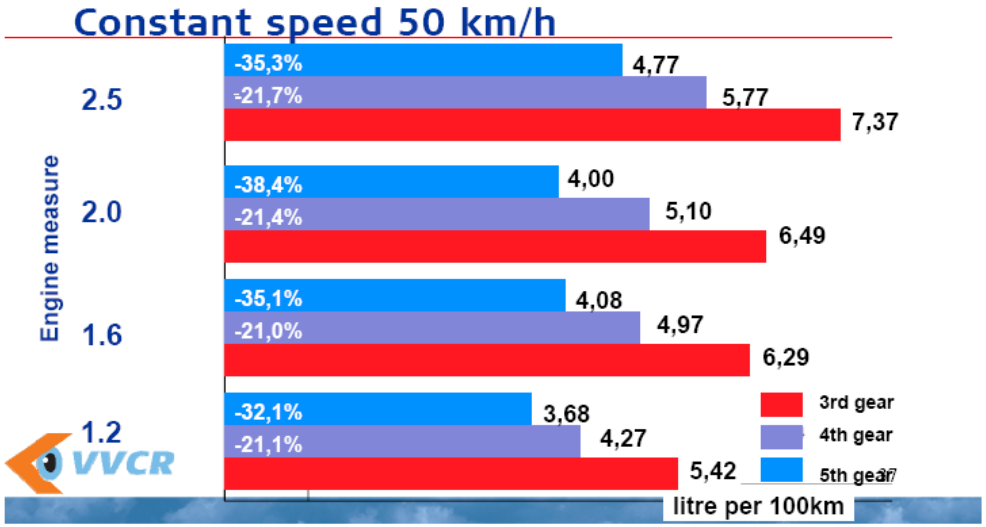


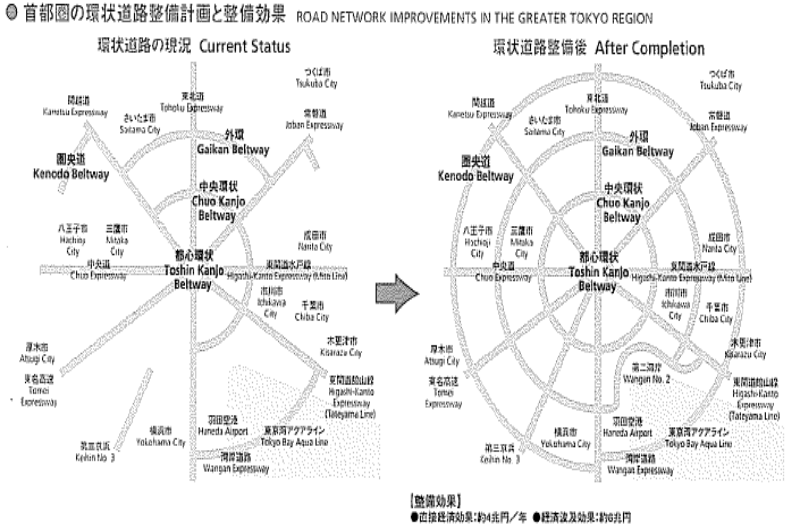
Source: See notes

Illustrating the Integrated Approach

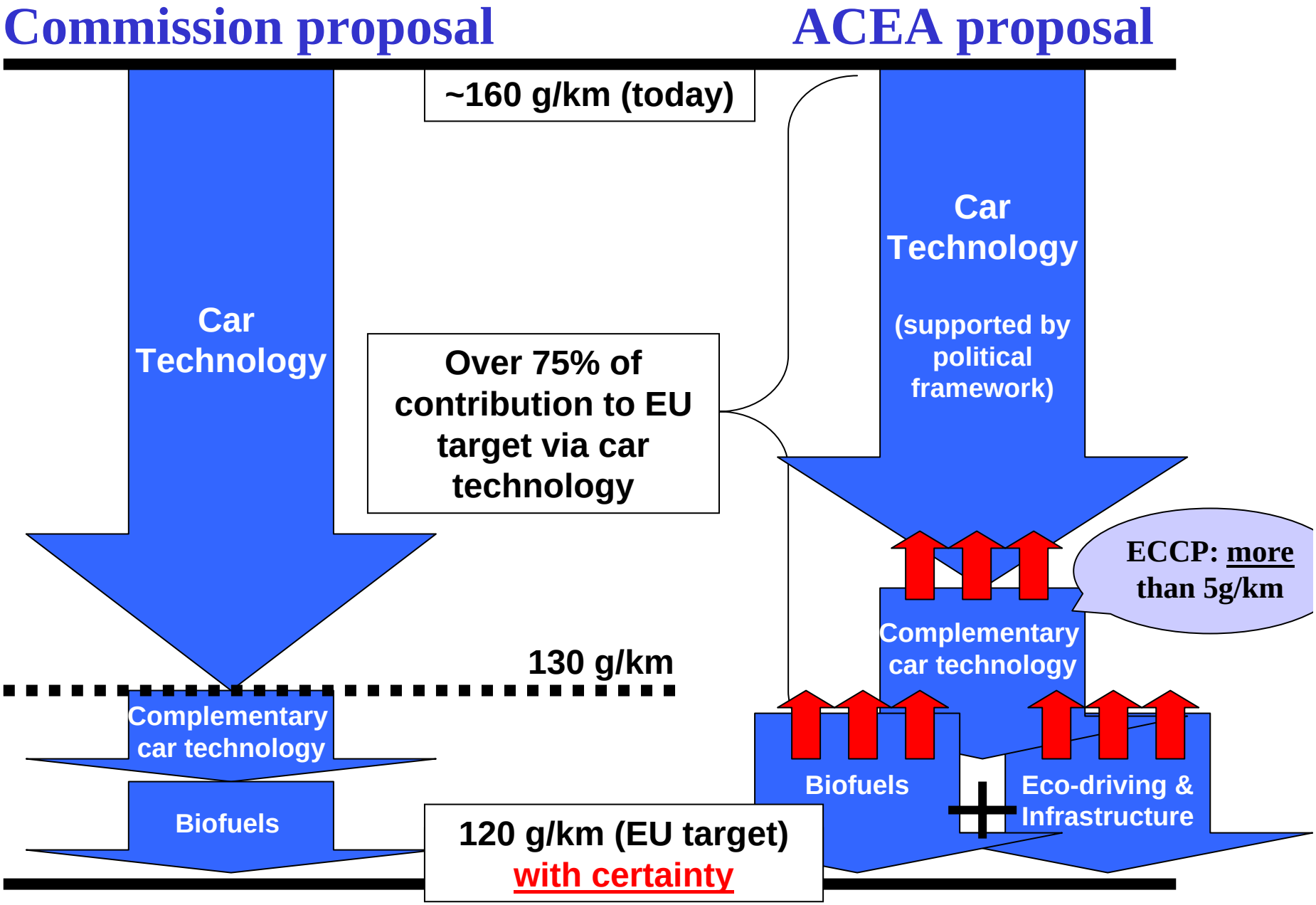
- **Eco-driving**
  - Cost-effective: ECCP calculates cost-savings!
  - Easy to learn & can be applied across park
  - All stakeholders can contribute to EU-wide campaign

- **Infrastructure measures / Japan**
  - Japanese government counts 28Mt reductions through infrastructure in Kyoto plan
  - Dynamic traffic lights, road rolling resistance, etc.
  - Works across park!



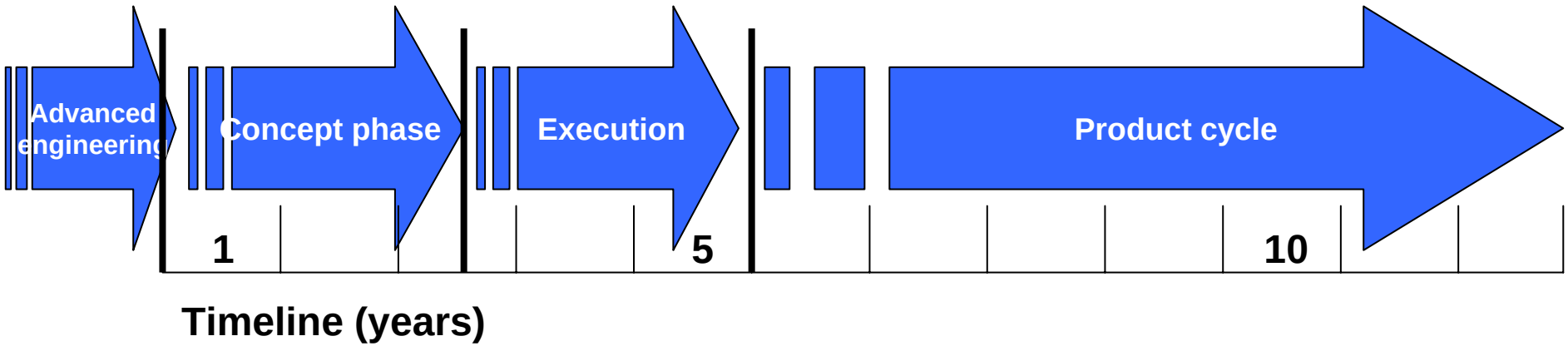


Reaching target in a smarter way



Lead-time: 2015

- 2012 is **unrealistic** date; complex development process
- Different legislative approaches/schemes mean different targets -> **no planning certainty**
- **2015 earliest possible date for CO2 legislation**
  - Larger share of new cars can be changed
  - Japan 2015 target
  - Entry into force Euro 6



Complementary car technologies

- Complementary car technologies have **key role to play** in lowering CO2 emissions **prior to 2015**

- ECCP calculated following CO_2 reductions (in 2012):
  - MAC: 1.0Mt
  - GSI: 1.5Mt (*)
  - TPMS: 2.0Mt
  - LRRT: 2.4Mt

  6.9Mt → **This corresponds to about 10g/km**

  (*) Underestimation according to ACEA: should be closer to 3Mt

  Note: ACEA does not hereby agree to legislation in line with Commission's assumptions

- **ACEA will propose timing / penetration** of complementary car technologies (potentially including others than those proposed by Commission)

Conclusions

- **ACEA members support reaching 120g/km target, and** will continue being **major contributor**
  - Engine improvements & complementary car technology measures
- **Integrated Approach** required for **cost-effectiveness**
  - Impact assessment on cost-effectiveness of legislative target needed, as reaffirmed by Council
- **Appropriate lead-time:** 2015 at the earliest
- Any system must safeguard **diversity & social equity**
- Cars/mobility must remain **affordable**
- **Weight** appears to be most suitable parameter
- **Flexibilities** required
  - Group averaging, banking, credits for renewable fuel vehicles, regulatory impact, etc.