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Fuelling EU Transport

The Dash for Energy Efficiency

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Light Duty Vehicles

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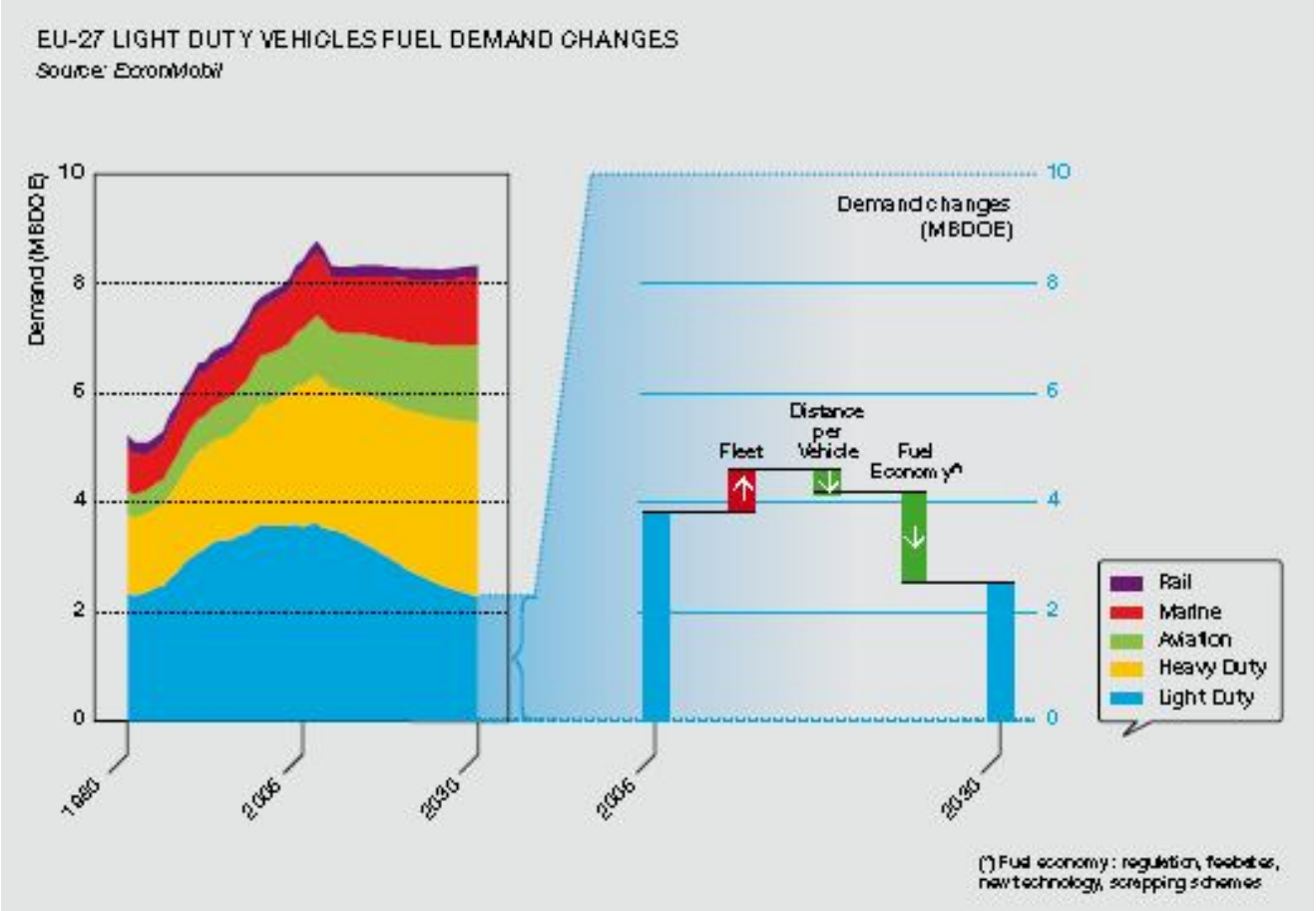
LDV passenger car fleet will continue to grow until 2030 but fuel consumption will decrease sharply due to regulation, fee bates, new technologies, etc….



IEA lowest CO2 abatement cost are to be expected for end-use efficiency improvements

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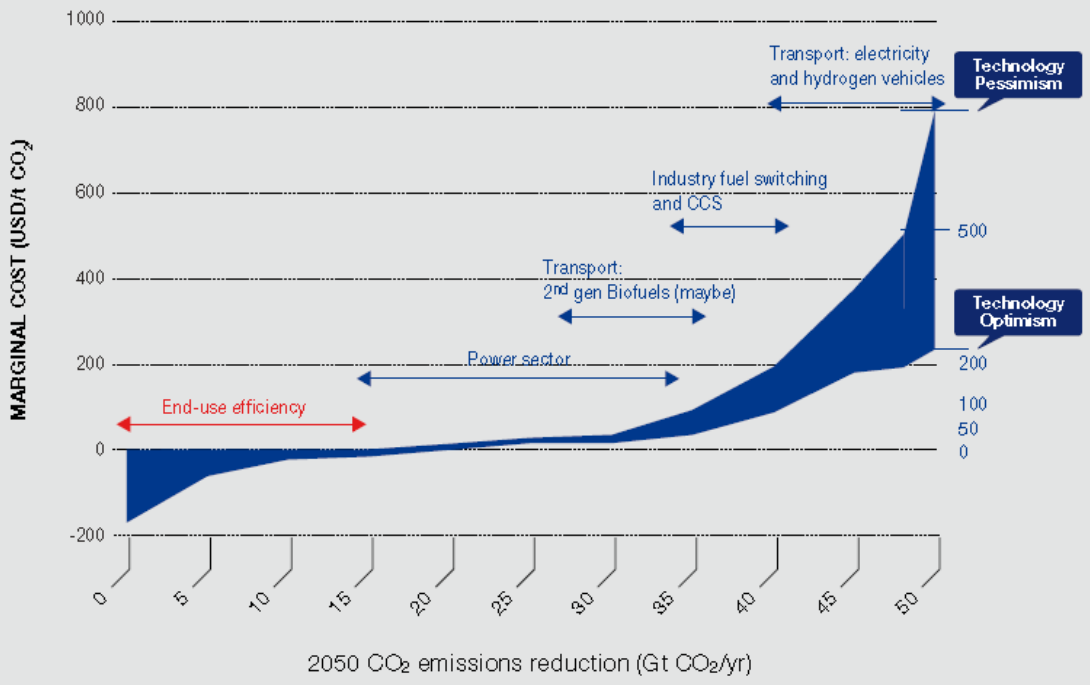
IEA CO_2 ABATEMENT COST CURVE

Source: International Energy Agency (IEA)



4. A 30-50% reduction in new passenger vehicle fuel consumption is considered feasible over the next 20-30 years

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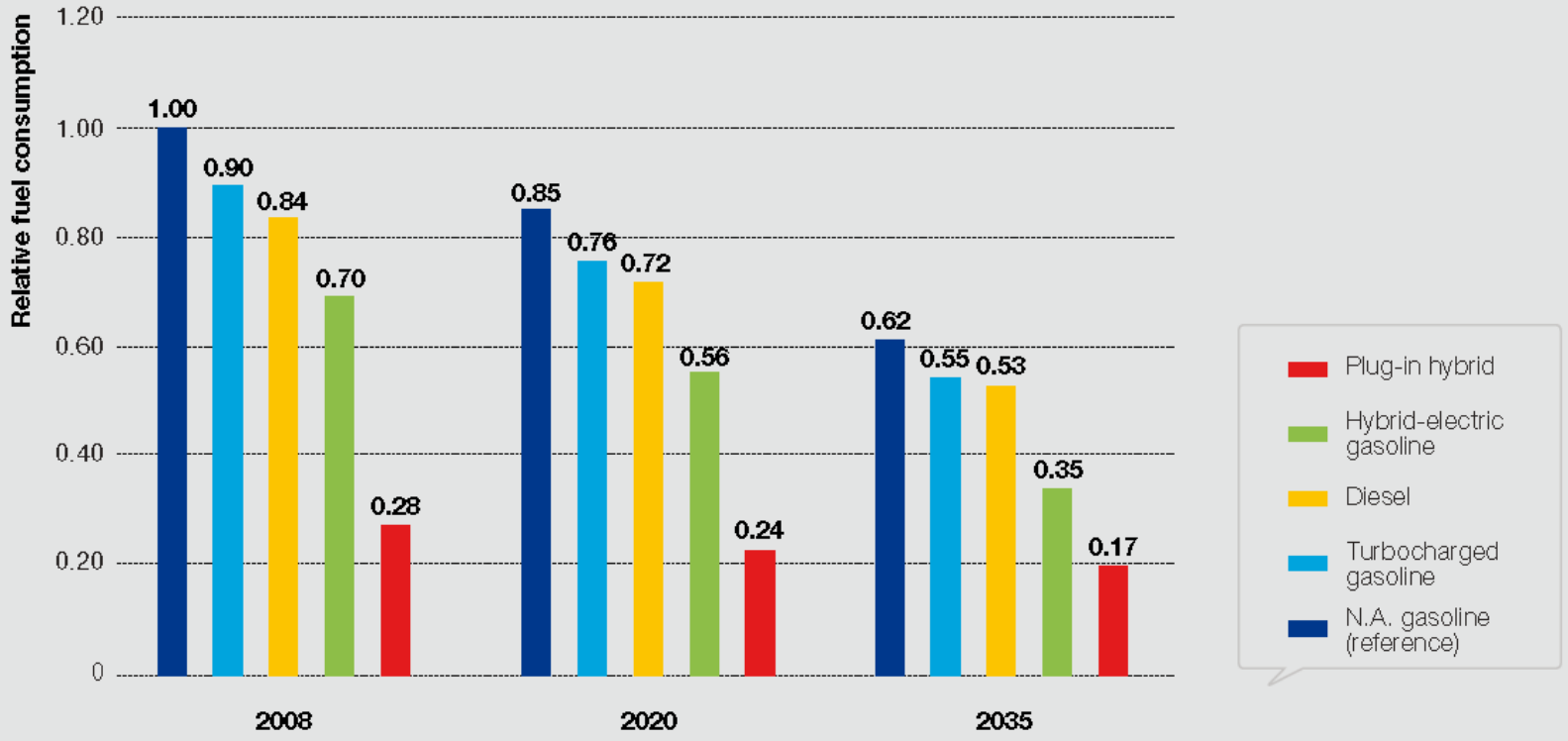
RELATIVE FUEL CONSUMPTION OF FUTURE PASSENGER CARS

Source: J.B.Heywood (2010)



5. Addressing rolling resistance and aerodynamic drag could represent significant fuel efficiency increases….

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5. ….supplemented by drivetrain efficiency improvements

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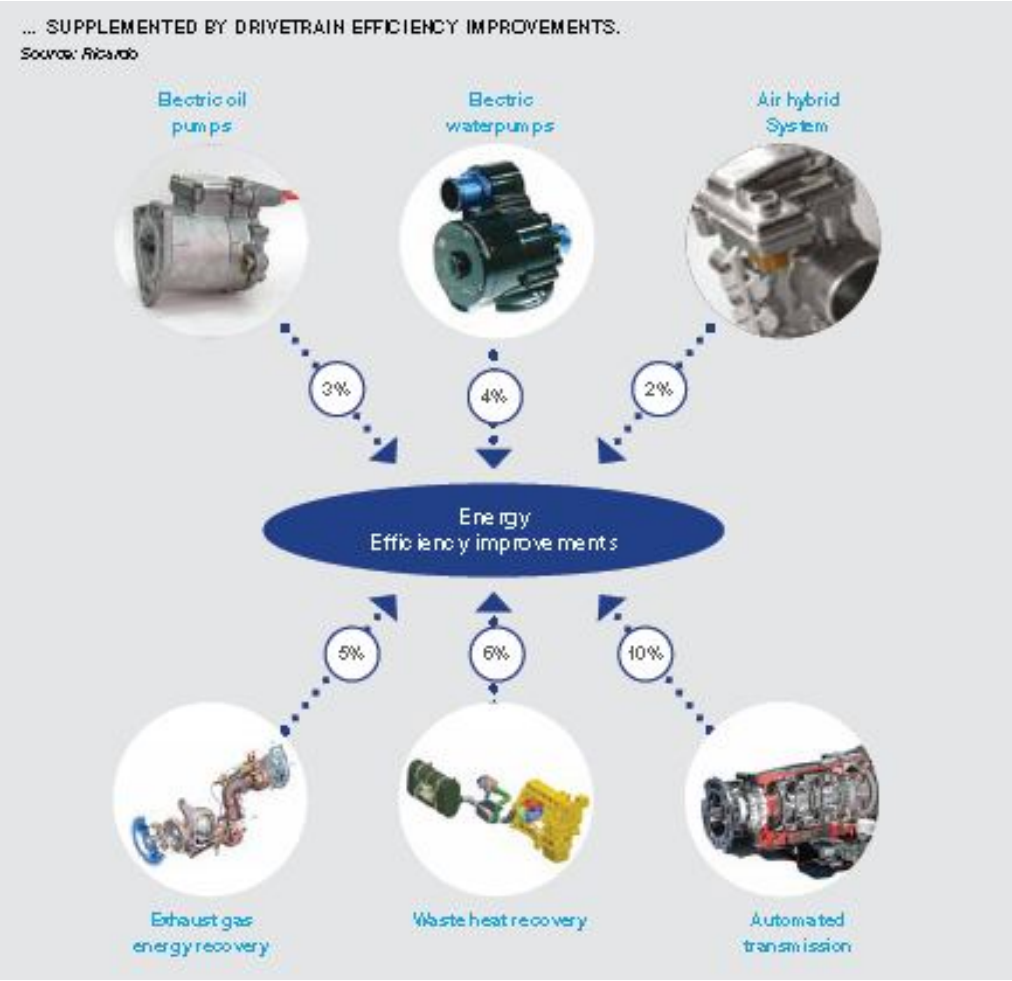

5. More efficient aircraft design has substantial fuel saving potential

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CO_2 REDUCTION OPTIONS IN AVIATION

Source: IATA, A global approach to reducing aviation emissions, November 2009

Timelines and examples of technologies	Impact
Retrofits	7-13%
• Winglets mounted on the wingtips of aircraft improve aerodynamics and reduce fuel burn	
• More advanced engine components for better combustion and airflow	
• Lighter materials for furnishing in the cabin	
• Less energy-consuming lighting and in-flight entertainement	
Production Updates	7-18%
• More airframe structure components made of lightweight composite material instead of aluminium	
• Advanced engines for current aircraft production series	
New aircraft design before 2020	25-35%
• Geared turbofan engine will reduce fuel burn 10-15%	
• Open rotor engine will reduce fuel burn around 25%	
• Counter-rotating fan will reduce fuel burn 10-15%	
• Advanced turbofan will reduce fuel burn around 15%	
• Laminar flow reduces aerodynamic drag by reducing turbulence on aircraft surface, 10-15% less fuel burn	
New aircraft design after 2020	25-50%
• Blended wing body, rather than the classical tube-and-wing architecture	
• Revolutionary engine architectures	
• Fuel cell system for on-board energy	

5. Technology and operations measures could reduce CO2 emissions from shipping by up to 75%

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CO_2 REDUCTION OPTIONS IN MARINE
Source: IMO

		Saving (%) of CO_2 / tonne-mile	Combined	Combined
DESIGN (New ships)	Concept, speed and capability	2-50**		
	Hull and superstructure	2-20		
	Power and propulsion systems	5-15	10-50%**	
	Low-carbon fuels	5-15*		
	Renewable energy	1-10		
	Exhaust gas CO_2 reduction	0		25-75%**
OPERATION (All ships)	Fleet management, logistics and incentives	5-50**		
	Voyage optimization	1-10	10-50%*	
	Energy management	1-10		

* CO_2 equivalent based on the use of LNG
** Reductions at this level would require reductions of speed.

2. In order to maximise CO reduction, policies should focus on technologies with negative or moderate cost

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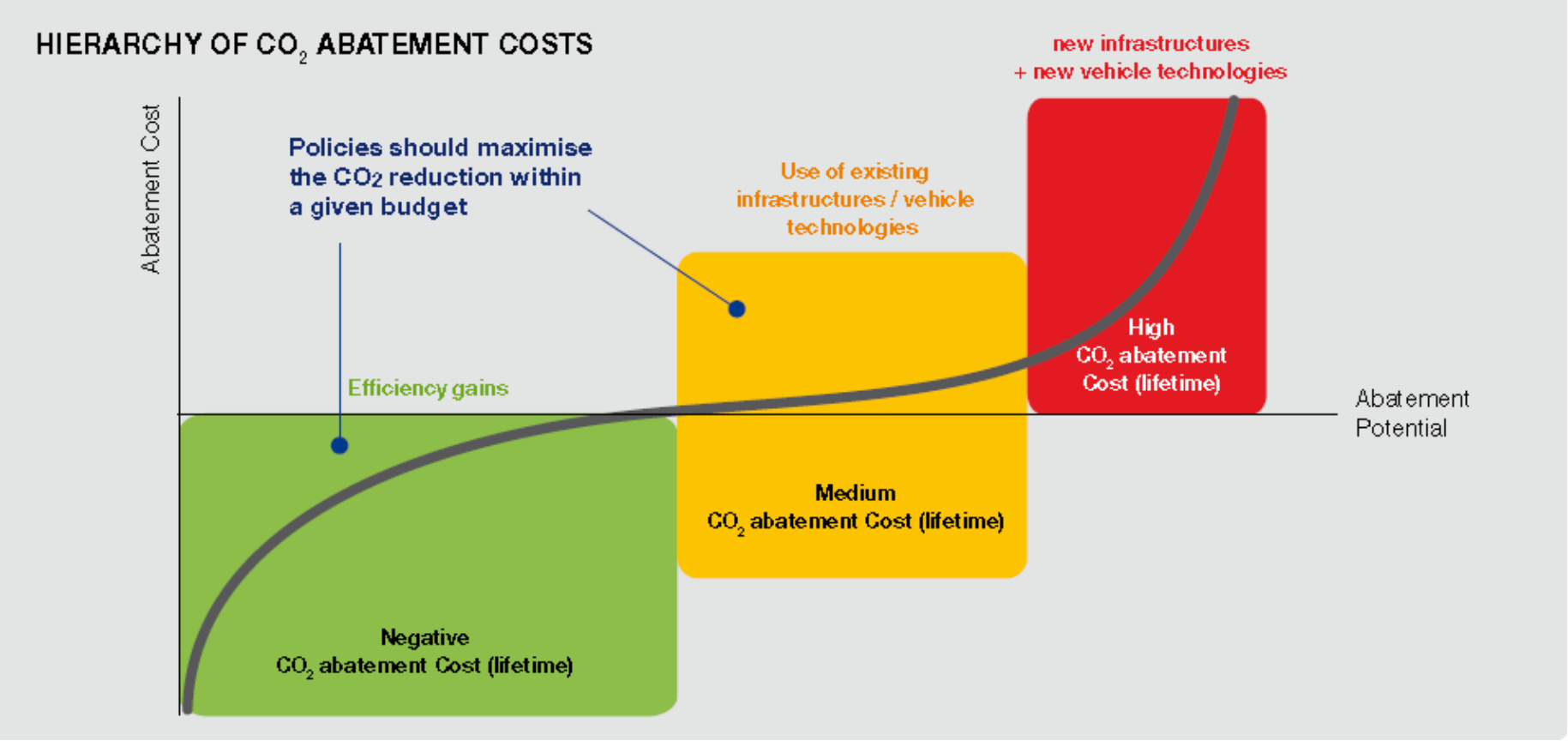

CO2 in Transport: EUROPIA's priorities for policy developments

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POLICY RECOMMENDATIONS

Policy measures focused on reducing CO_2 emissions should be based on realistic and attainable objectives and should be at the lowest cost to society.
A framework for consistent CO_2 abatement cost across the entire economy is essential.

EUROPIA proposes the following key parameters for EU transportation policies and legislation:

1. Maintain the economic and social value of cost-effective mobility through realistic objectives and attainable standards

2. Promote a framework for consistent and predictable CO_2 abatement cost across the entire economy to minimize costs to society, enable proper investment/ divestment planning, facilitate progressive technology introduction

3. Avoid direct or indirect technology mandates or prescriptions, and facilitate research and development of competing technologies

4. Recognise that energy efficiency improvements are the most cost-efficient opportunity to reduce Well-to-Wheel CO_2 emissions for all transportation segments

5. Ensure consistent application of energy taxation levels to all energy products (oil, coal, gas, biomass, electricity) based on the energy content and potentially the CO_2 emitted when the product is consumed at a level consistent with the ETS CO_2 market price (Emission Trading System)

6. Assess thoroughly the continued viability of EU refining and associated distribution and marketing infrastructure as part of EU industrial competitiveness

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Thank you for your attention