

Volvo Trucks

Sustainable transport solutions for the future

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Our challenge

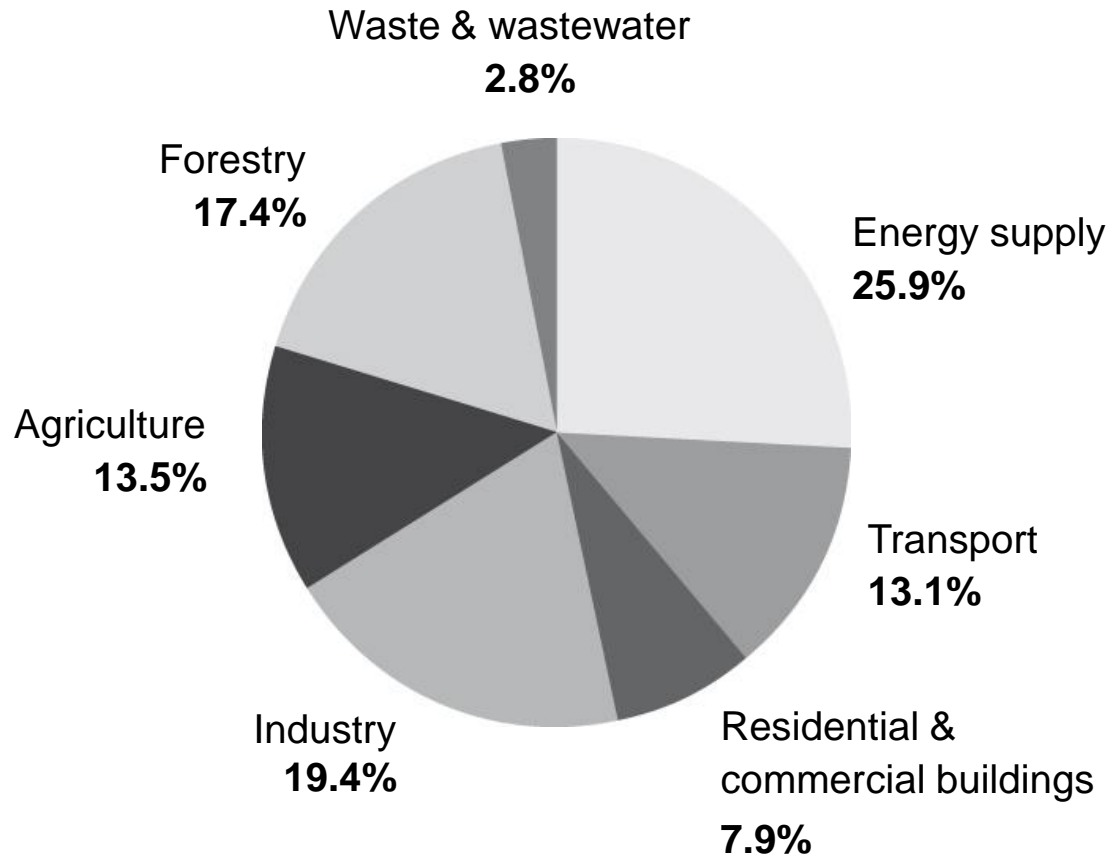




200 ton per second

We are part of the problem

Global anthropogenic CO₂ equivalent emissions



Source: UNEP 2004

Expectations on transports industry

Trends

Effects

Demands

Climate change

**Availability of
affordable fuels**

Air quality

Congestion

**Waste & material
resource depletion**

Increasing cost of ownership

Fuel price increase
CO2 taxation and incentives

Push for emission regulations

Low Emission Zones
Stricter controls

Congestion restrictions

Congestion Charging
Traffic free zones
Parking restrictions
Night bans

Push for material regulations

Recycling demands
Ban for harmful materials

Fuel economy

Transport efficiency

Green brand identity

Lower exhaust emissions

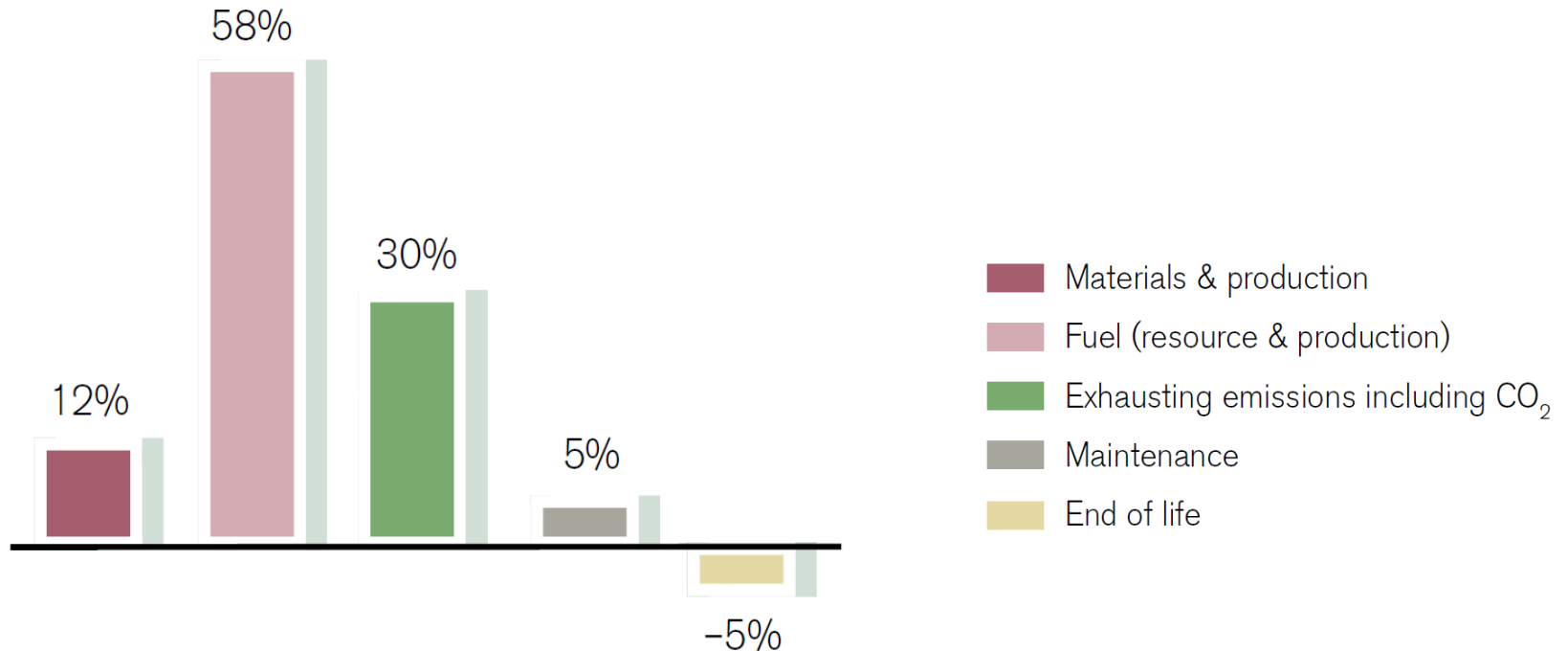
More silent trucks

Health protection

Resource efficiency

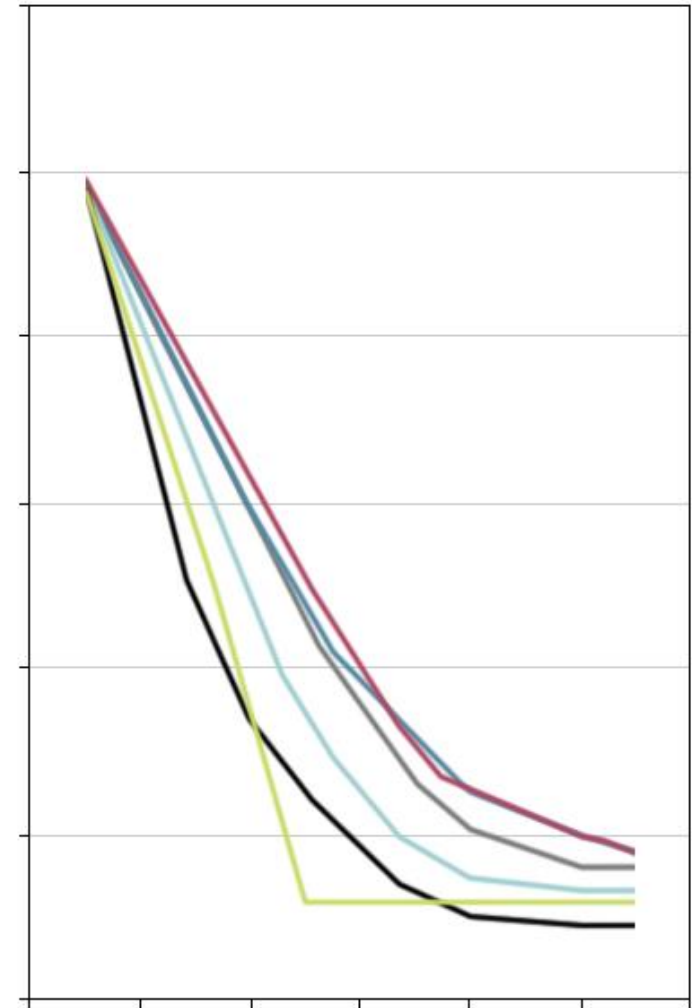
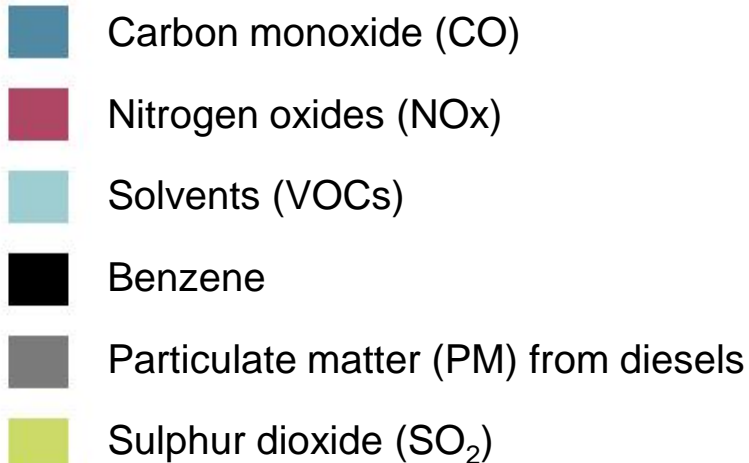
Environmental impact assessment (LCA)

A long-haul truck operation



A clear result for modern engine technology

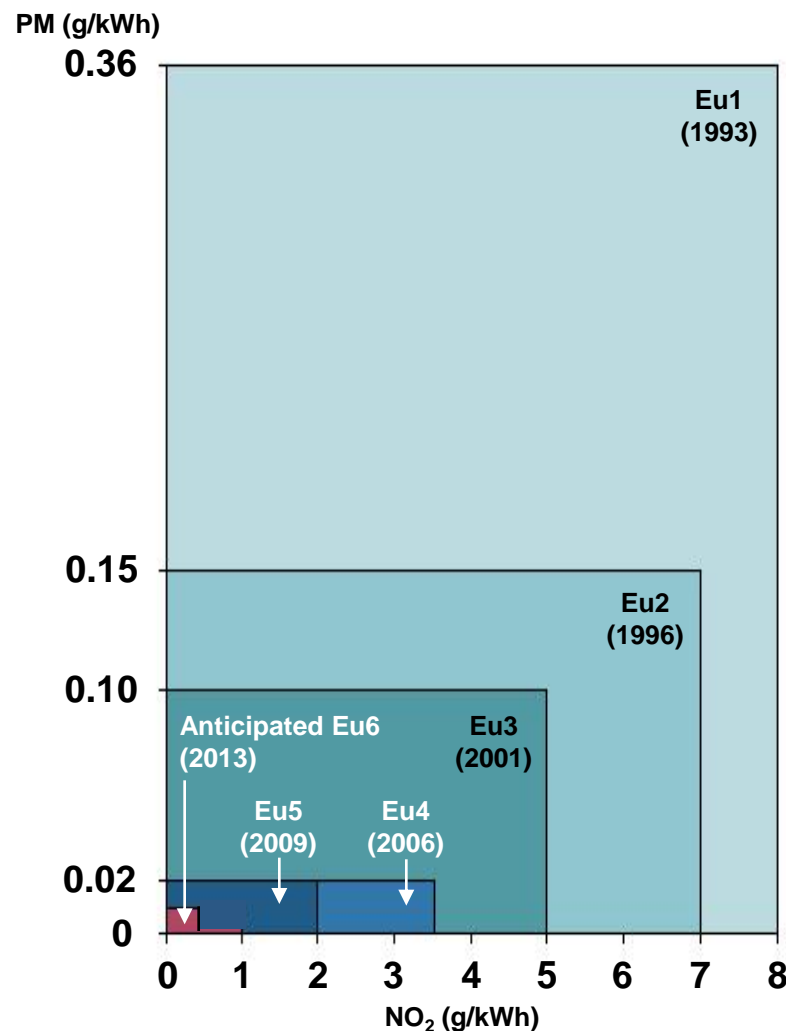
- Very low emission levels
- Reduced by 75-90% last 20 years
- Emissions continue to decrease



Source: Auto Oil2, Transport Base Case, 1999

Legislation, a powerful green resource

- Existing and planned legislation will further reduce emissions
- Sustainable emission levels from new vehicles by 2013
- Hundredfold improvement from Euro 1 to anticipated Euro 6
- Old vehicles remain a problem



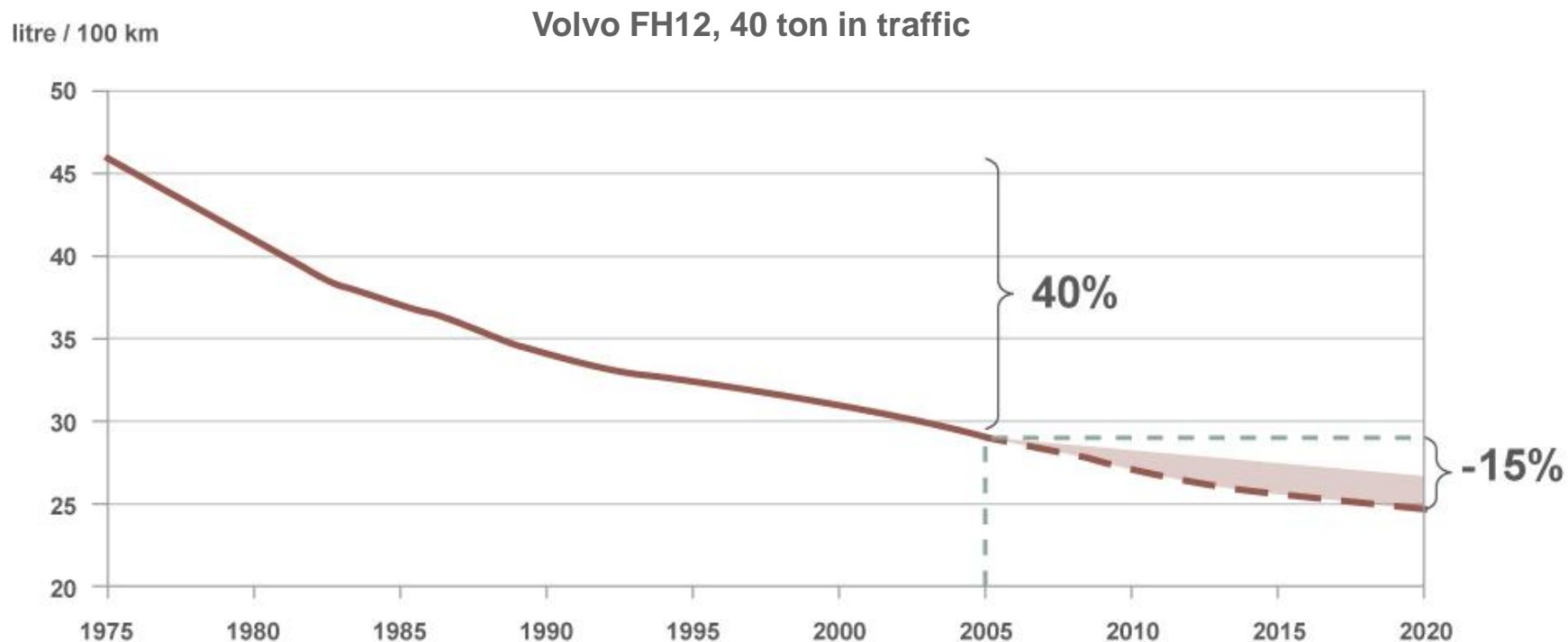
Our strategy to reduce climate impact!



Energy efficiency

Alternative fuels

Reduced fuel consumption



Hybrids - a Volvo Group approach

- Revolutionary fuel savings
- Reducing CO₂ emissions
- Profitable for operators
- Favourable for drivers
- Suitable for all vehicles in the Volvo Group
- Leading in the development of future technology



7 trucks & 7 renewable fuels, we are ready!



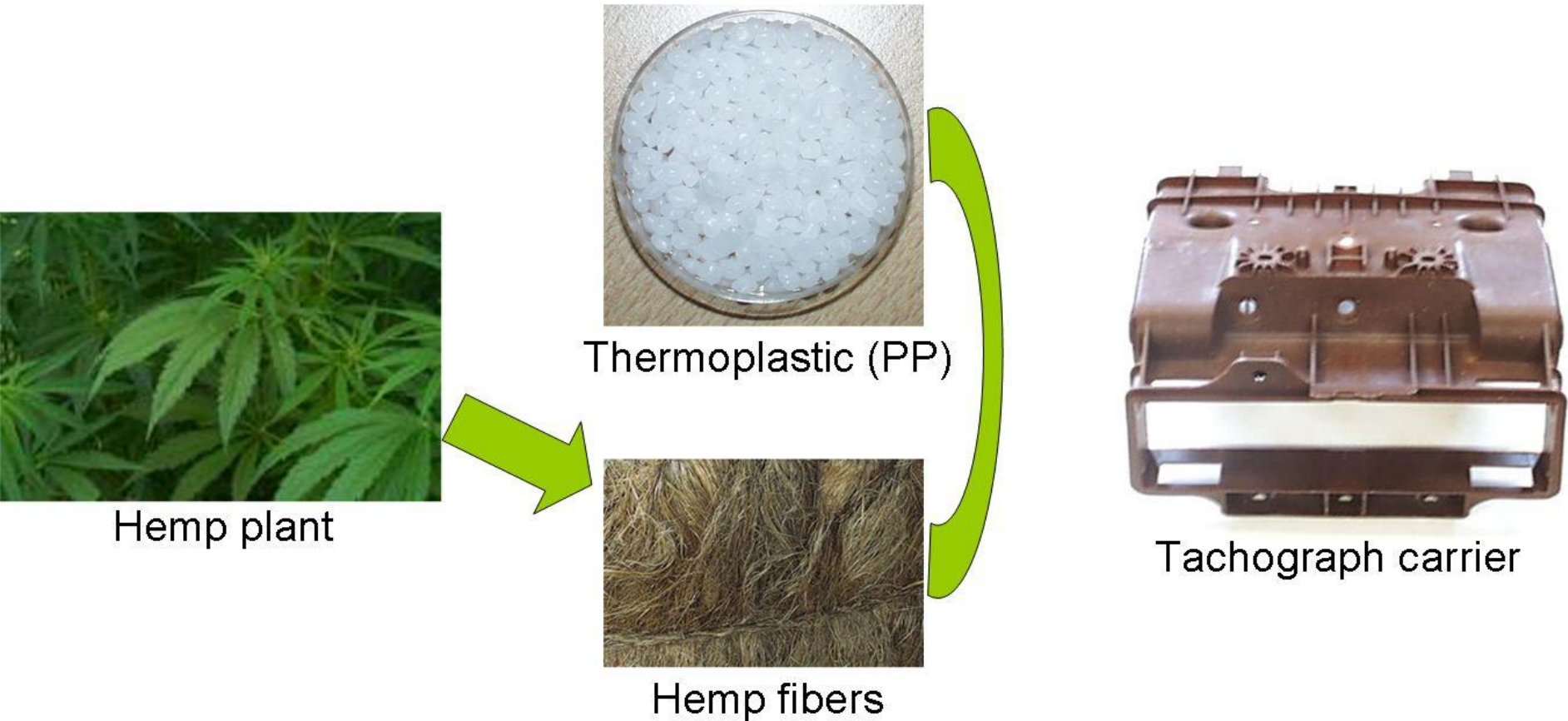
Volvo 3P

PRM, Jonas Jademyr

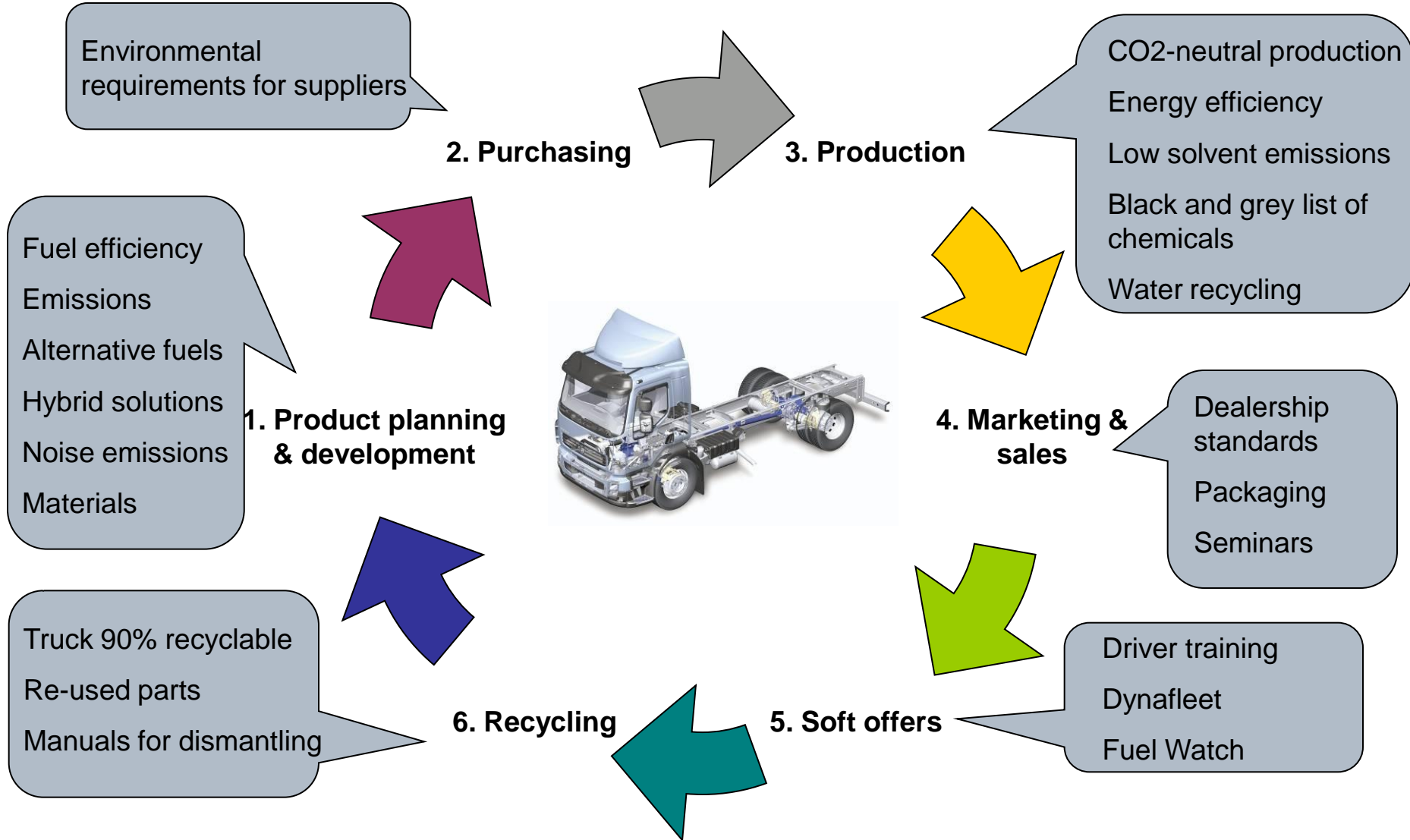
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Alternative composites materials in future?



The path for a sustainable future



Vision: Climate Neutral Transports

Target: Reduce CO₂ emissions by 50% until 2020

A cooperation between Preem, Schenker,
Volvo Trucks, the Swedish Road Administration,
Chalmers and Göteborg University

INFRASTRUCTURE



FUELS



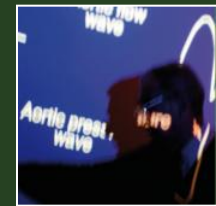
VEHICLES



LOGISTICS



RESEARCH



Thank you



BACK-UP's

Energy needs will double in 30 years

- Increasing population
- Improved standard of living
- Industrialisation
- Globalisation

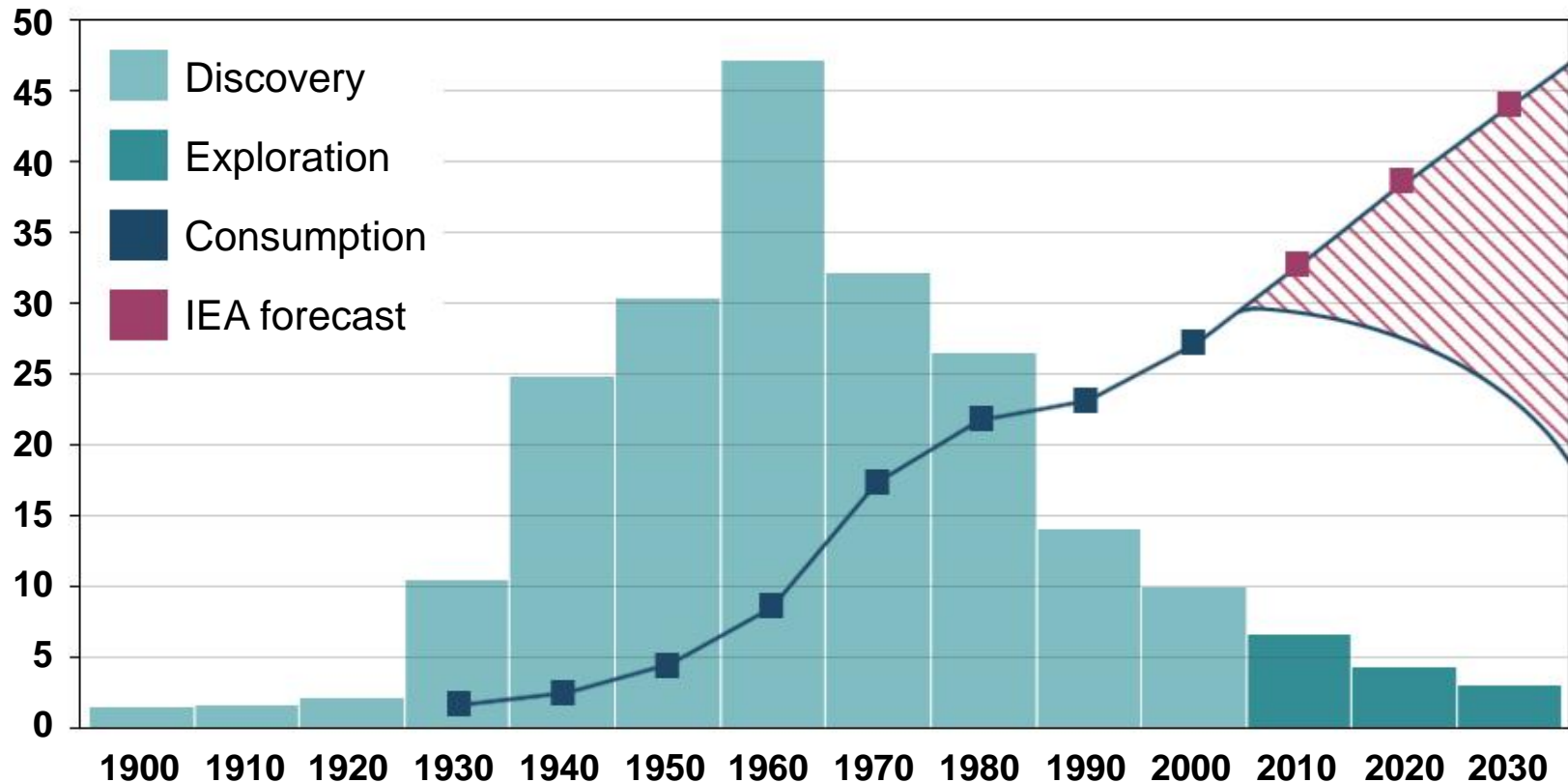


The disputed gap

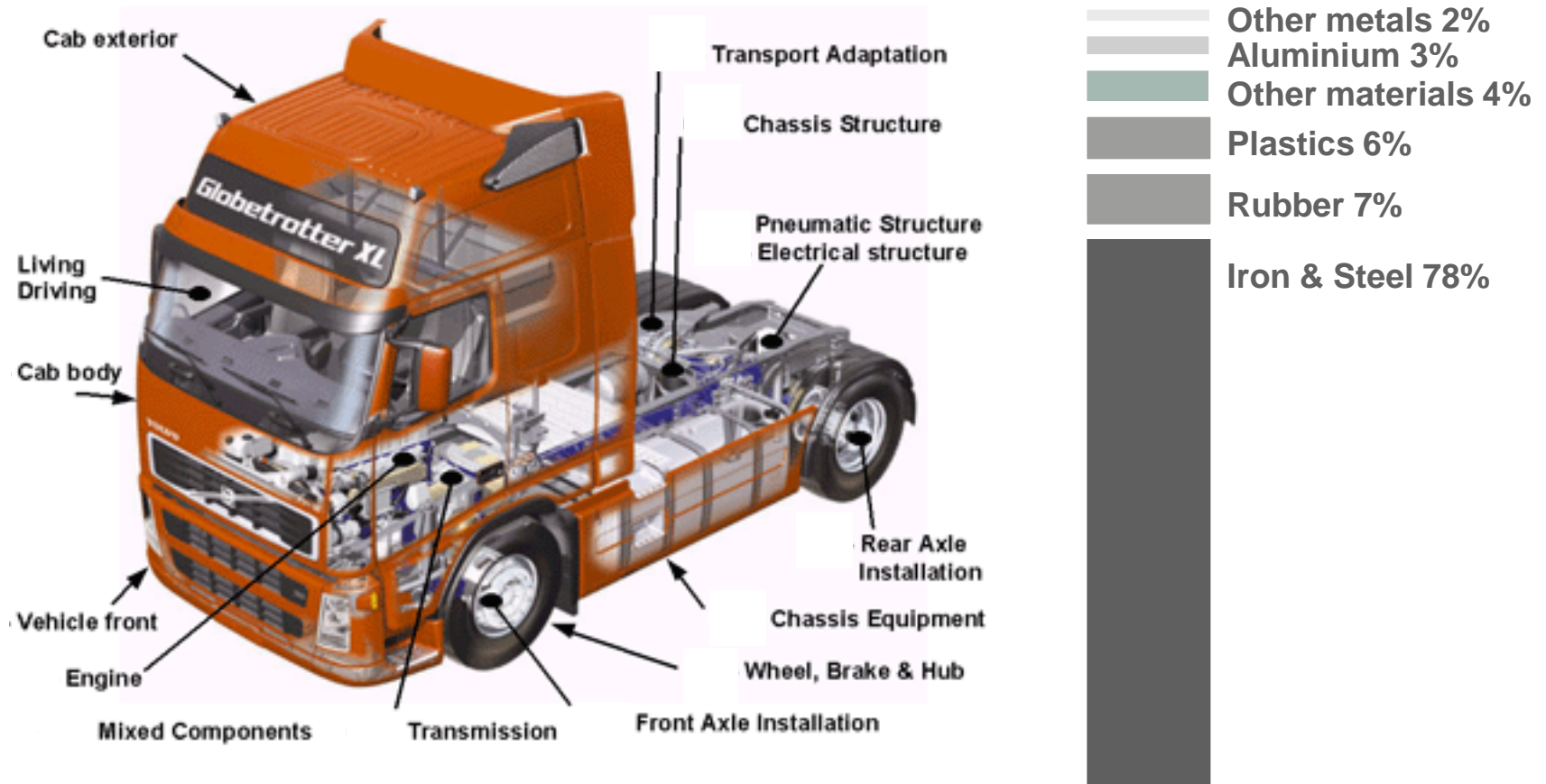
The gap between discovery and consumption

Discovery, gbp (billion barrels/year)

Source: Based on a diagram by Kjell Aleklett, ASPO






Breakdown of materials in different components systems



Evaluated alternative fuels

Liquid

Biodiesel	
Syntetisk diesel	
Metanol/Etanol	

Gas

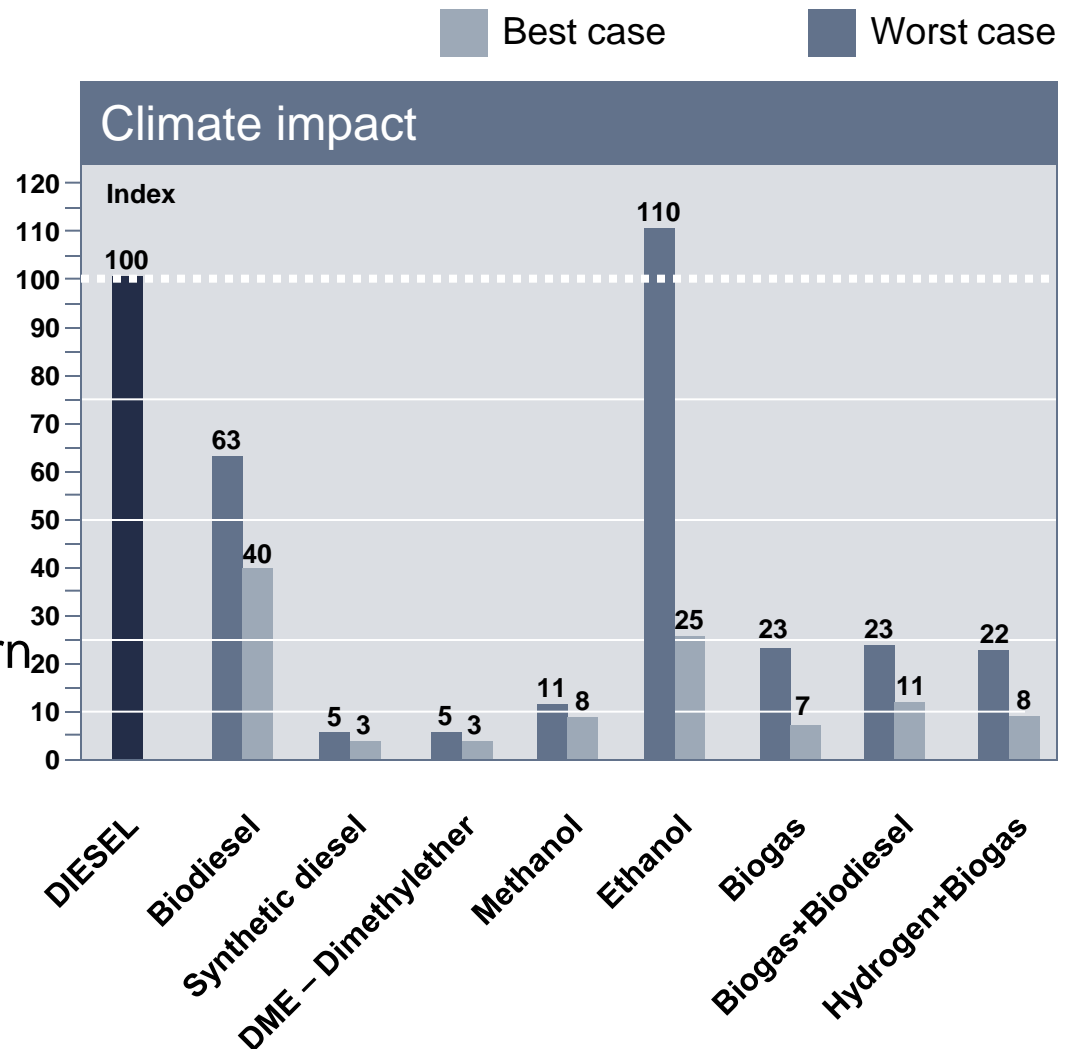
DME – Dimetyleter	
Biogas	
Vätgas + Biogas	

Combination

Biogas + Biodiesel	
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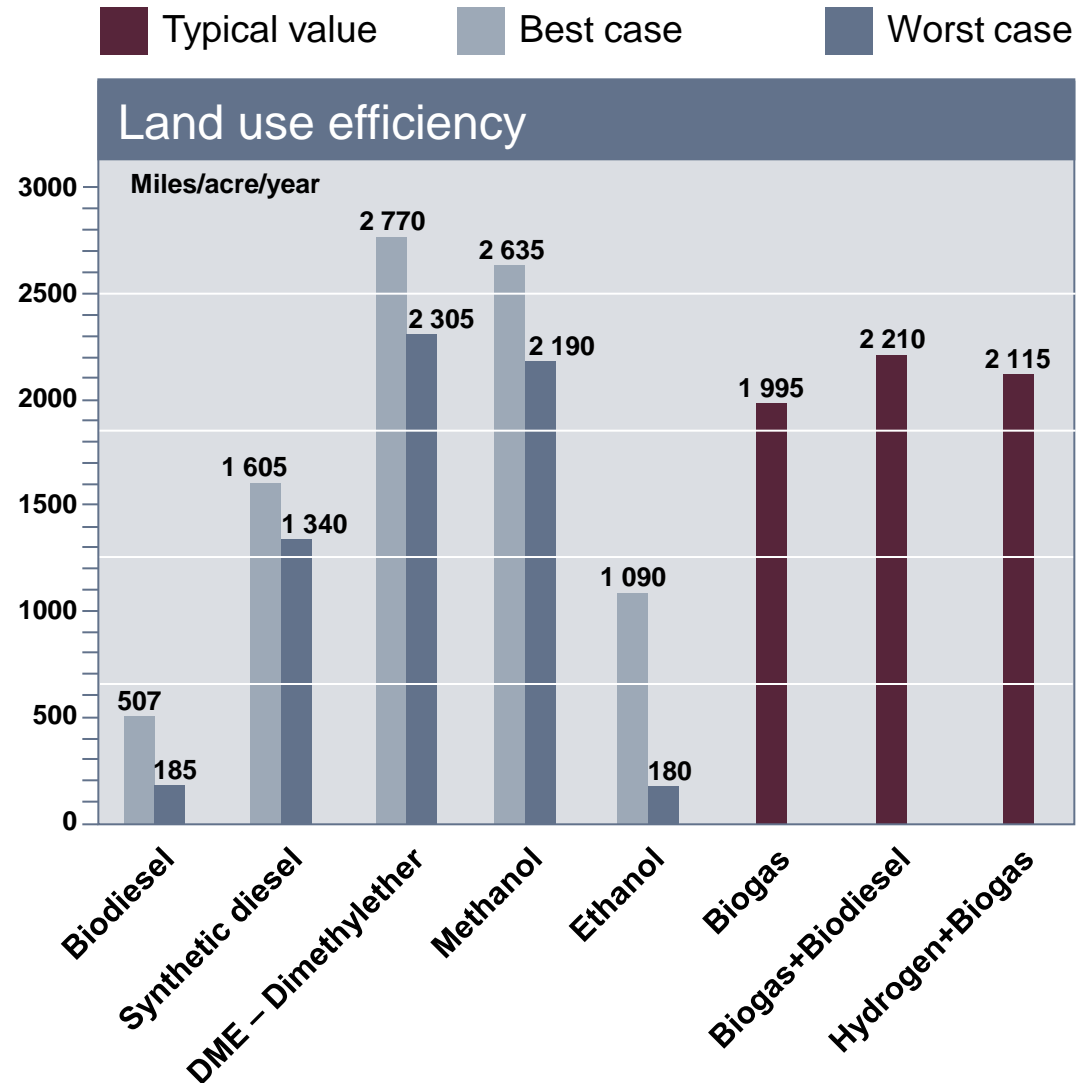
Climate impact from “well-to-wheel” for renewable

- Emissions of CO₂ for the entire chain, “well-to-wheel” principle
- Fuels manufactured via gasification have lowest impact
- Coal burned ethanol from corn or wheat have the highest impact but also biodiesel has relative high impact.



Land use efficiency, bio based fuels

- Land use efficiency:
- The driving distance per cultivated acre and year is a measure of the performance of bio fuels.
- Yields are based on U.S. average figures and Swedish typical conditions.
- DME, methanol and biogas from gasification of biomass give the best results.



BioDME an unique project to drive progress

- Representatives from all actors that are needed for an introduction of a new fuel
- Volvo coordinates the project
- Financed by Volvo, EU and Swedish Energy Authority
- 2008-2012



DELPHI

VOLVO

HALDOR TOPSØE 
CATALYSING YOUR BUSINESS

ETC

CHEMREC



Travel companions needed

- Harmonised international legislation
- Promotion of distribution channels for alternative fuels
- Support for phasing out old vehicles
- Long-term solutions and commitment
- Improved logistics
- Better road infrastructure
- EMS



Being neutral creates headlines

- World's first CO₂-neutral truck factory
- Efficient use of energy
- Windpower and biofuels
- CO₂-neutral production in all main plants



Volvo Trucks Challenge

20% reduction of 2010

We want the CO₂ emissions from transporting goods to and from our factories are reduced now

Fuel saving management

5 - 15%

Efficient logistics

5%

Blending of biofuel in diesel

5 - 30%

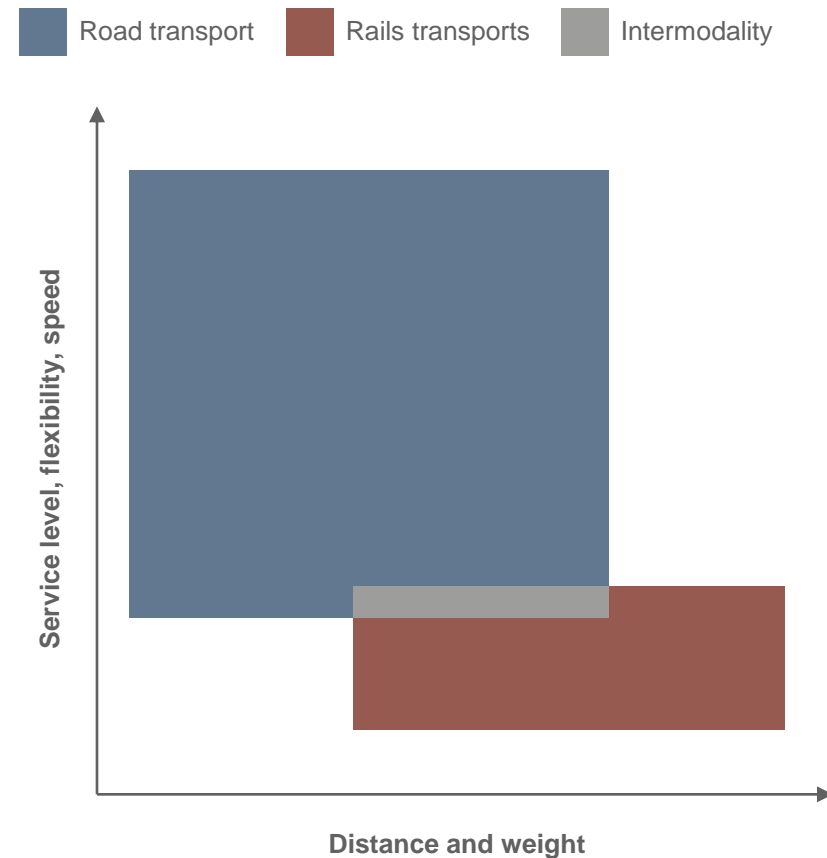
Younger vehicles

5%

20 - 45% potential

Competition or complement?

- Total amount of goods is expected to grow with 50% next ten years
- Rail capacity fully utilized
- Competition only a fraction of the capacity
- The rail has a large market share in Sweden
- All transport modes are needed and should be optimised



Our strategy on global warming

- Focus in 2009
- Energy efficiency in all areas
- Hybrid truck on the market by 2009
- Develop all means of transport to optimise energy efficiency
- Gradual transition to renewable fuels



A unique platform for making impact

- Leadership
- Safety
- Inspiration
- Technology
- Courage
- Teamwork
- Trust
- Determination

