

Mobility for the Future

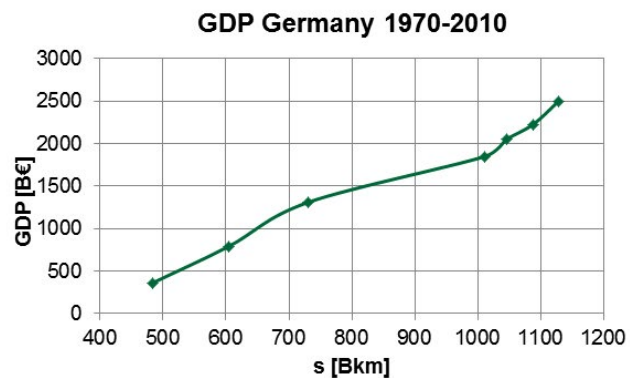
Dr. Ulrich Eichhorn

Verband der Automobilindustrie

Why Mobility?

VDA

- Mobility is a basic requirement and basic right of humans
- Mobility is clearly and strongly correlated to wealth and economic performance



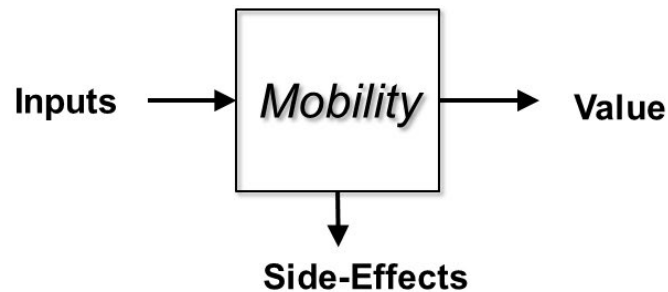
12.10.2012

VDA PowerPoint

Seite 2

Fig. 1: Why Mobility?

Mobility as a System

VDA

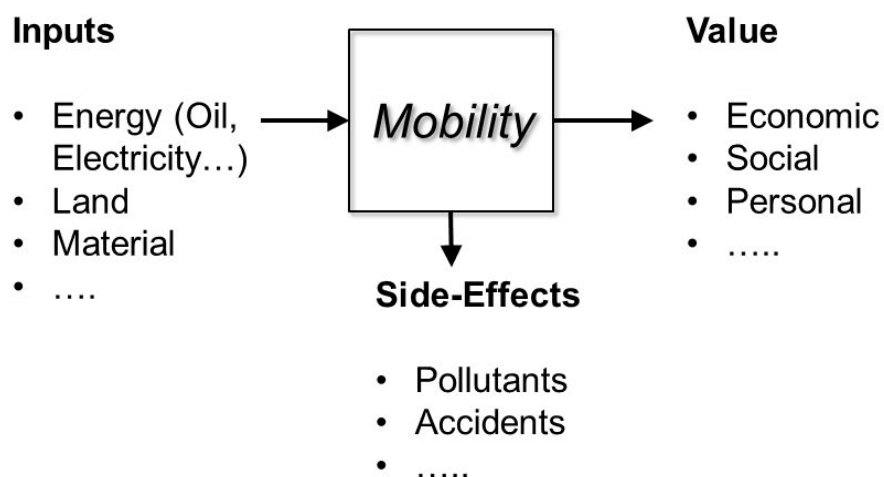
12.10.2012

VDA PowerPoint

Seite 3

Fig. 2: Mobility as a System

Mobility as a System

VDA

12.10.2012

VDA PowerPoint

Seite 4

Fig. 3: Mobility as a System

Passenger and Goods Traffic in Germany

VDA



12.10.2012

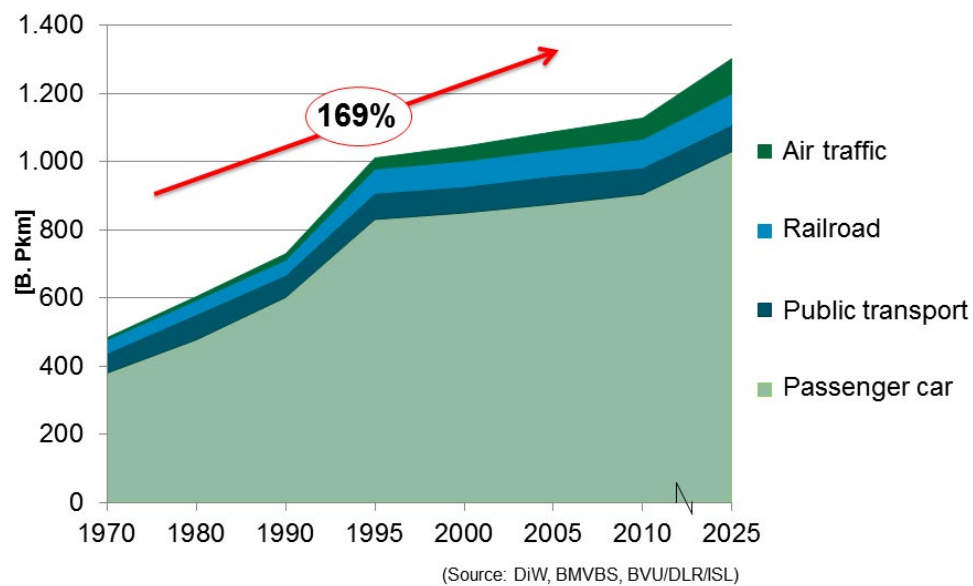
VDA PowerPoint

Seite 5

Fig. 4: Passenger and Goods Traffic in Germany

Traffic in Germany until 2025

VDA



12.10.2012

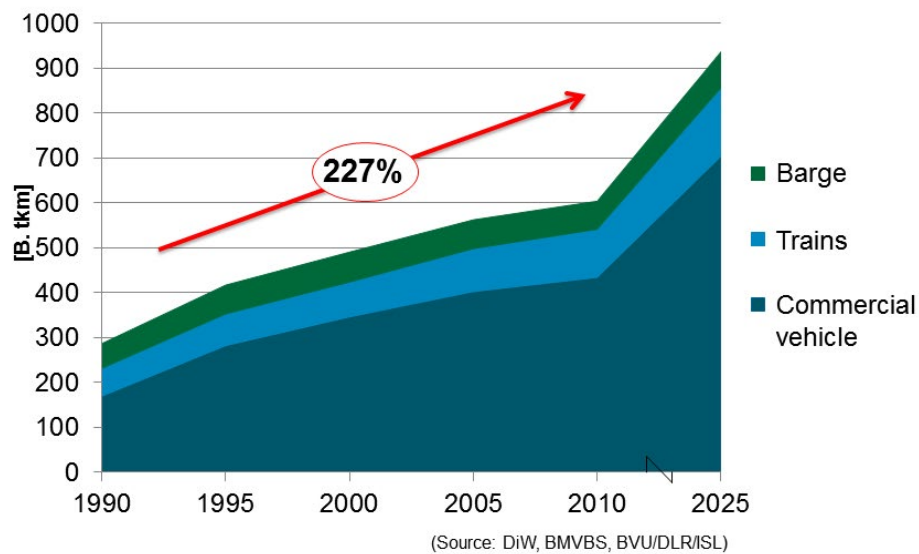
VDA PowerPoint

Seite 6

Fig. 5: Traffic in Germany until 2025

Goods traffic in Germany until 2025

VDA



12.10.2012

VDA PowerPoint

Seite 7

Fig. 6: Goods traffic in Germany until 2025

The story so far

VDA



Then ...

... Now

Particulate matter: old and newer passenger vehicle

12.10.2012

VDA PowerPoint

Seite 8

Fig. 7: The story so far

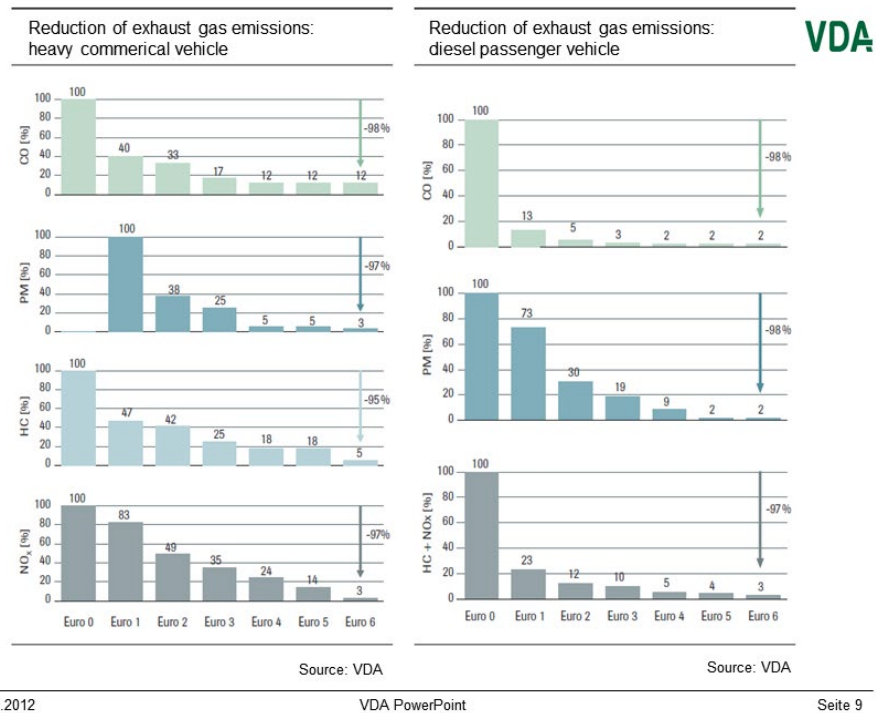


Fig. 8: Reduction of exhaust gas emissions

Development of New Registrations and Fleet of Passenger Cars VDA

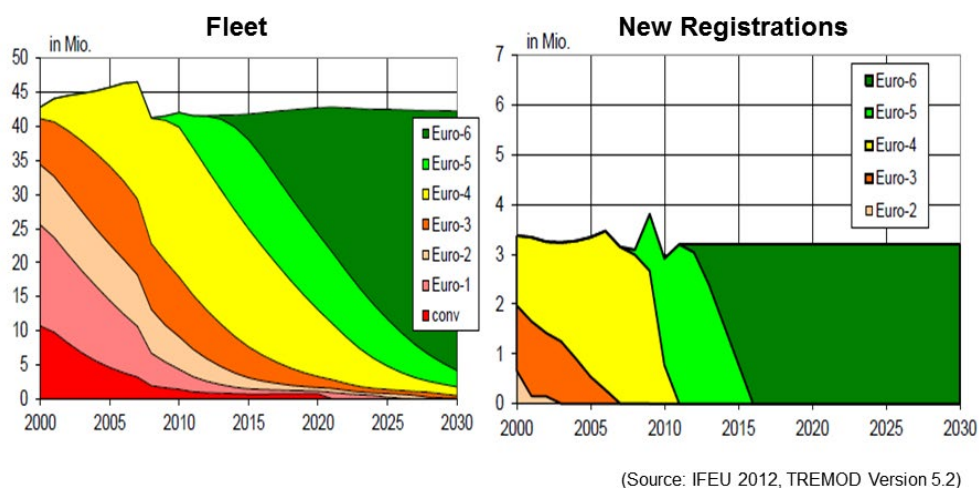


Fig. 9: Development of New Registrations and Fleet of Passenger Cars

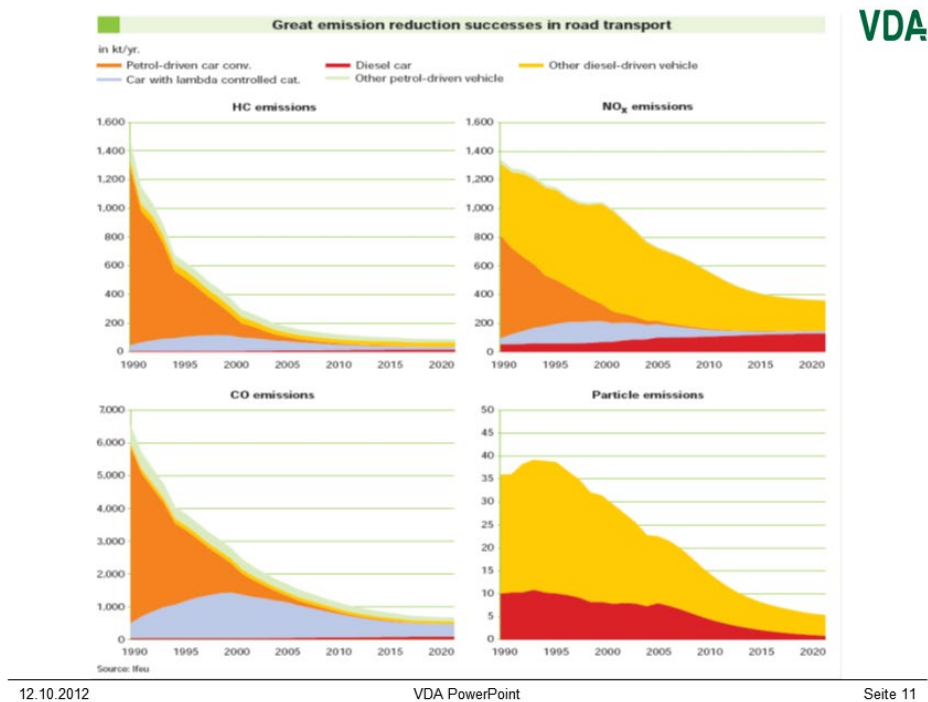


Fig. 10: Great emission reduction successes in road transport

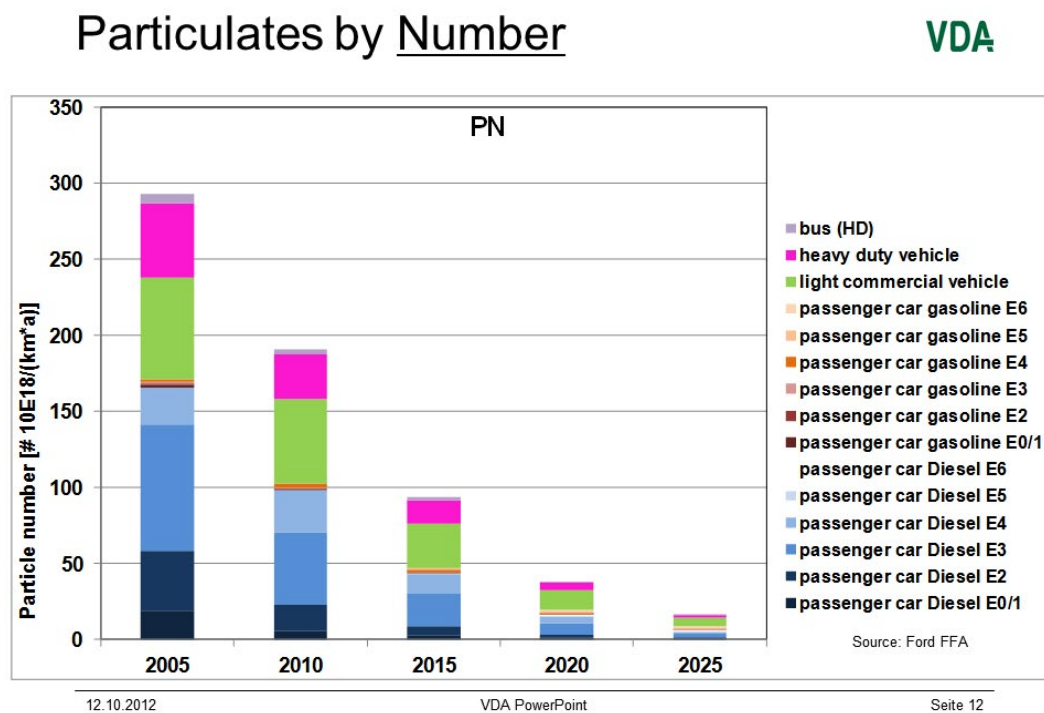
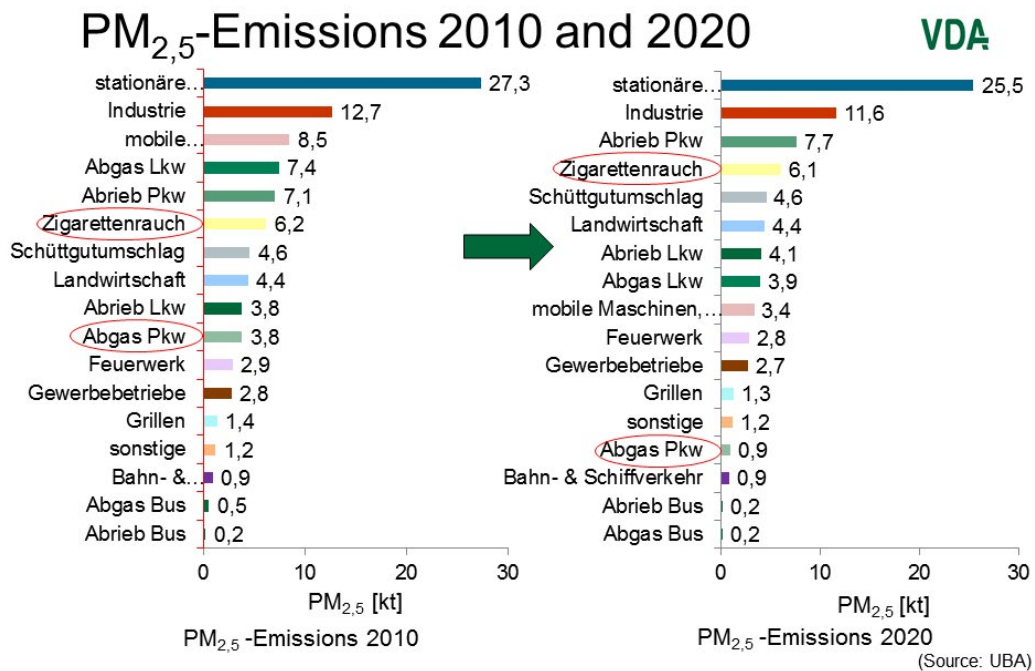


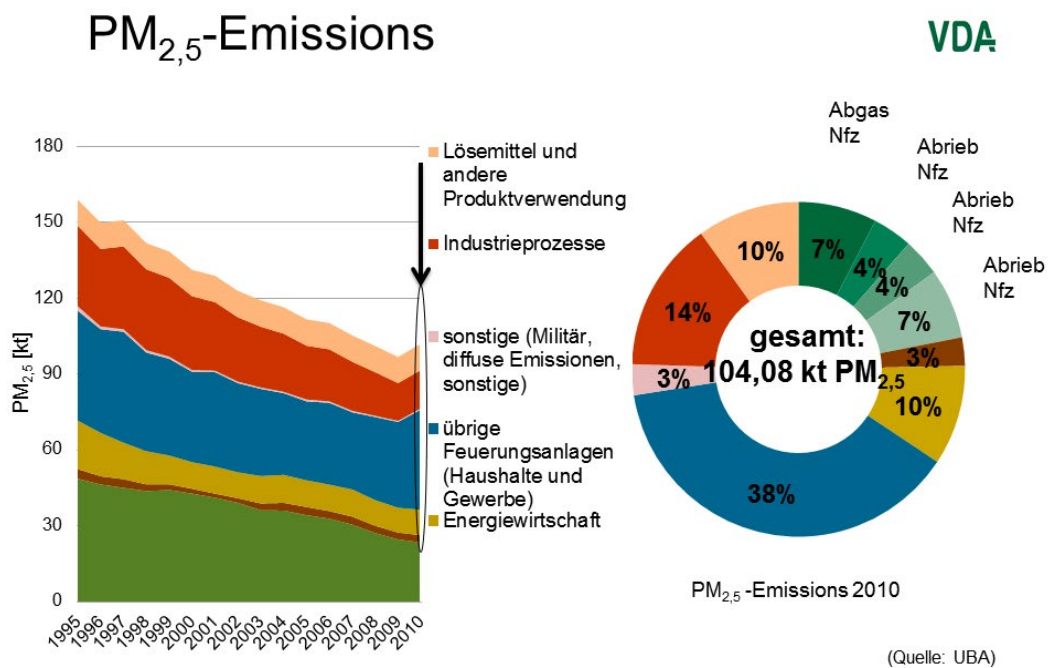
Fig. 11: Particulates by Number



12.10.2012

VDA PowerPoint

Seite 13

Fig. 12: PM_{2,5}-Emissions 2010 and 2020

12.10.2012

VDA PowerPoint

Seite 14

Fig. 13: PM_{2,5}-Emissions

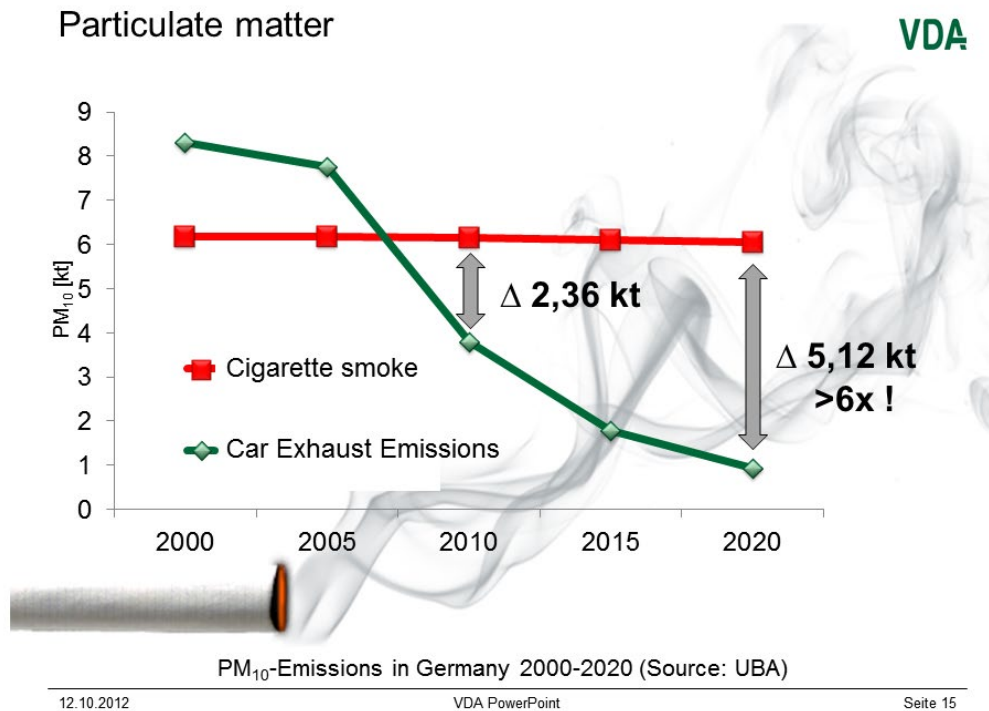


Fig. 14: Particulate matter

Particulate matter:
Logical Conclusion for Low Emission Zones?

VDA



Fig. 15: Particulate matter

"Smog"- Catastrophe in London 1952 VDA



Nelson-column in London 1952

Nelson-column in London 2012

Fig. 16: "Smog"-Catastrophe in London 1952

"Smog" in Los Angeles 1956 VDA



Smog in Los Angeles 1956

Los Angeles Skyline 2009

Fig. 17: "Smog" in Los Angeles 1956

"Smog" in Peking 2005

VDA



Beijing

12.10.2012

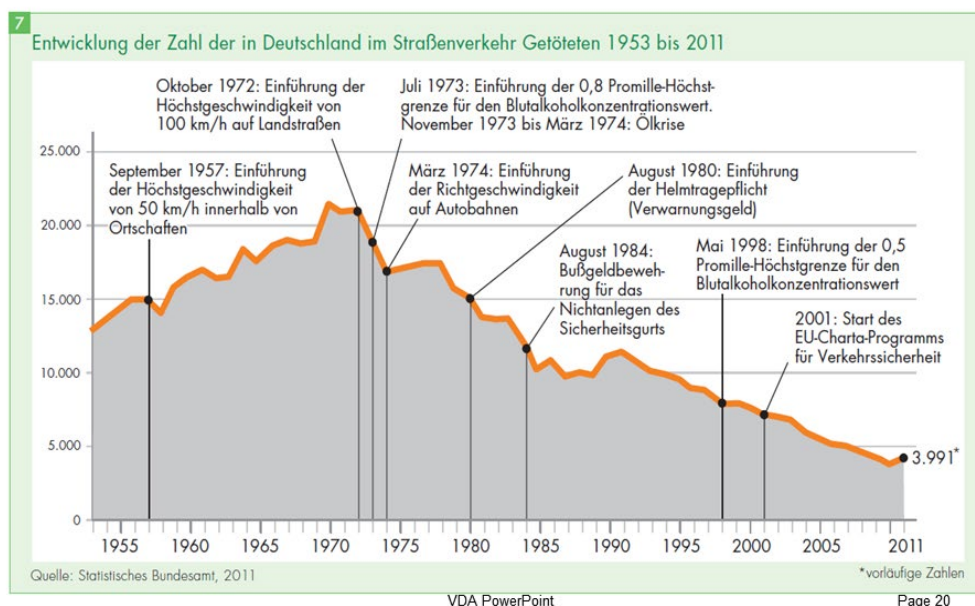
VDA PowerPoint

Seite 19

Fig. 18: "Smog" in Peking 2005

Traffic Fatalities in Germany

VDA



VDA PowerPoint

Page 20

Fig. 19: Traffic Fatalities in Germany

Achievements in Summary

VDA

Fuel **Consumption** reduced by **more than 40%**

Vehicle **Thefts** reduced by **more than 70%**

Fatalities reduced by **more than 80%**

Pollutants reduced by **more than 96%**

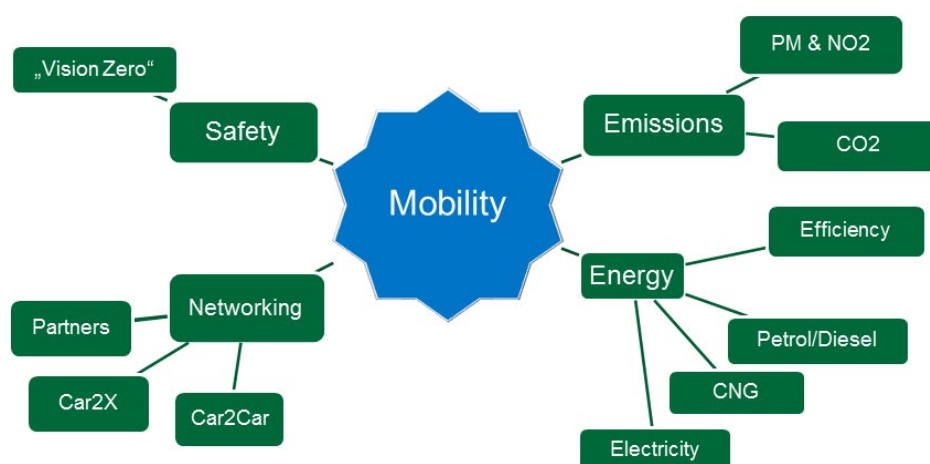
12.10.2012

VDA PowerPoint

Seite 21

Fig. 20: Achievements in Summary

Challenges & Chances

VDA

12.10.2012

VDA PowerPoint

Seite 22

Fig. 21: Challenges & Chances

Which is the right way?

VDA



12.10.2012

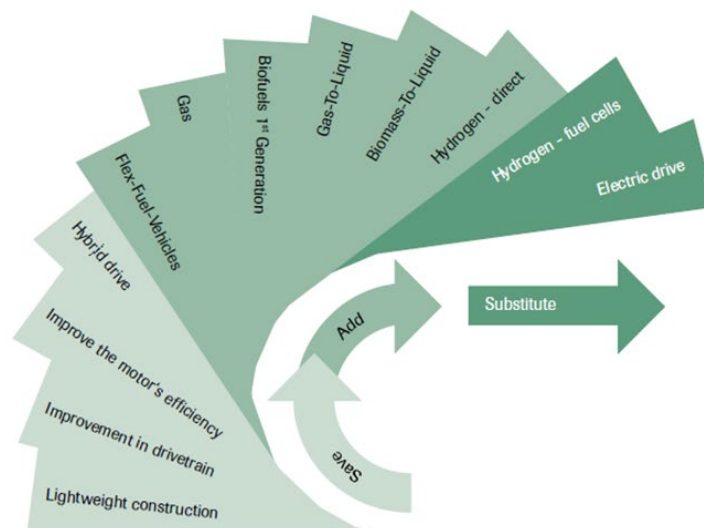
VDA PowerPoint

Seite 23

Fig. 22: Which is the right way?

The fan-strategy of the German automotive industry

VDA



Source: VDA

12.10.2012

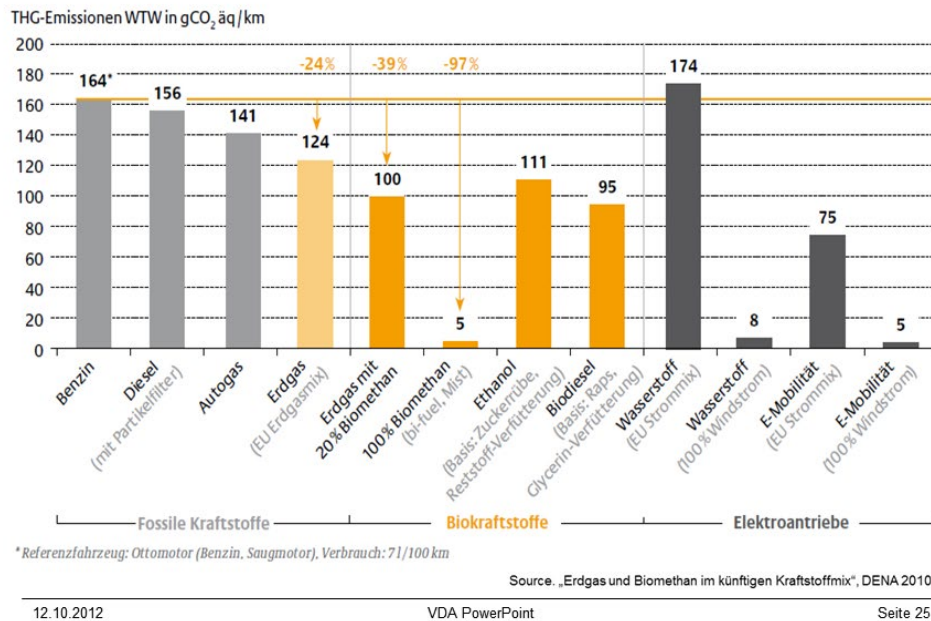
VDA PowerPoint

Seite 24

Fig. 23: The fan-strategy of the German automotive industry

Potentials for CO₂-Savings:

VDA

Fig. 24: Potentials for CO₂-Savings

Electric Mobility – What is that?

VDA

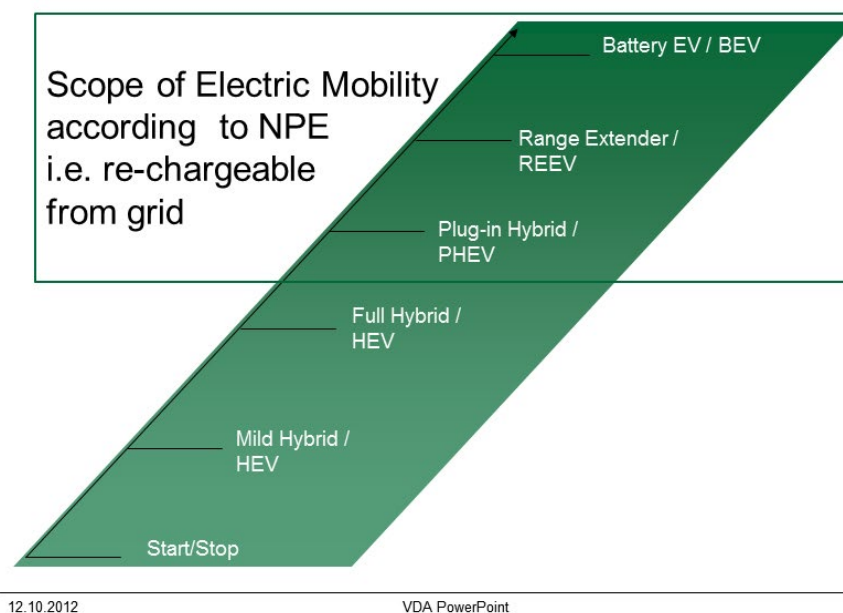
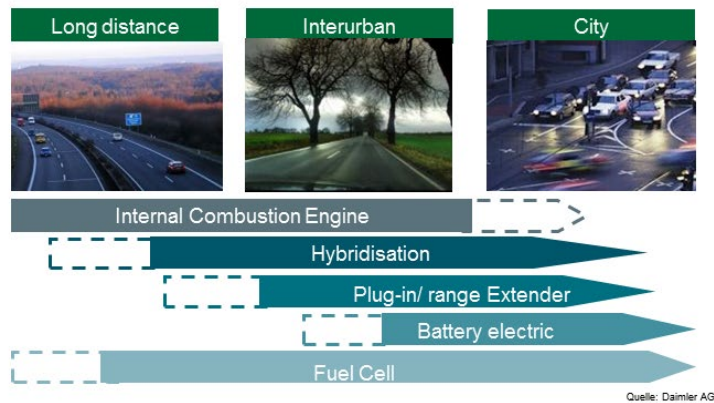


Fig. 25: Electric Mobility – What is that?

Future Drive Trains

VDA

Tailored solutions on the market:



12.10.2012

VDA PowerPoint

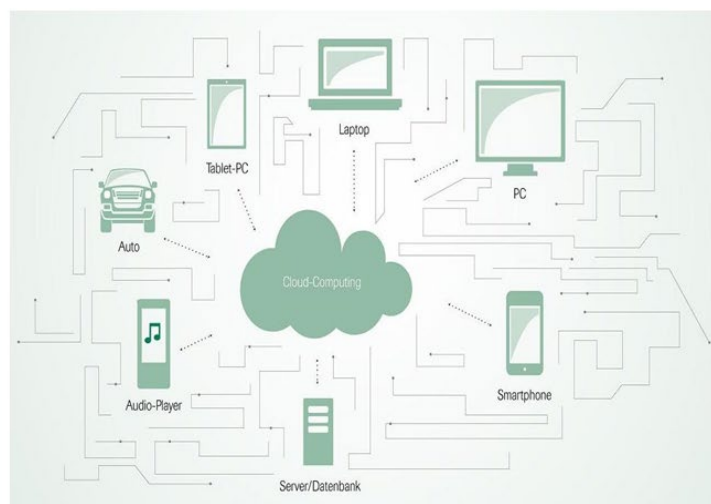
Seite 27

Fig. 26: Future Drive Trains

Networking & Communication

VDA

Smartphone
on Wheels?



12.10.2012

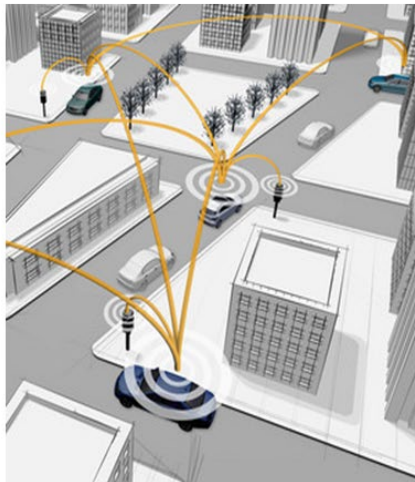
VDA PowerPoint

Seite 28

Fig. 27: Networking & Communication

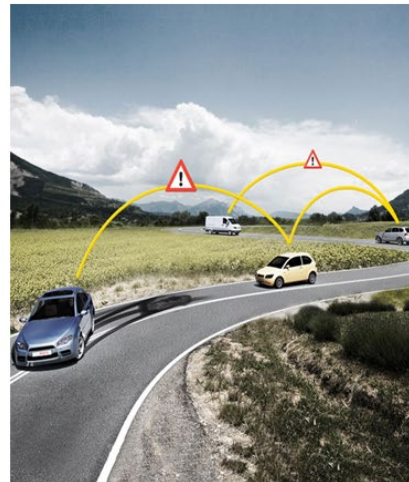
Car2X-Communication

VDA



Car2X- Communication between traffic lights, Roadside-Units and vehicles

Source: Vogel Business Media



Danger Warning Message warn all vehicles for upcoming obstacles on the road

Source: simTD

12.10.2012

VDA PowerPoint

Page 29

Fig. 28: Car2X-Communication

Digitale Vernetzung als Revolution rund um das Automobil

VDA

ZEITGEWINN

- > Zugriff auf Verkehrsinformationen in Echtzeit vermeiden Staus und ermöglichen den günstigsten Weg

SICHERHEIT

- > 1,2 Millionen Verkehrstote weltweit im Jahr können reduziert werden
- > Fahrzeuge bremsen automatisch

WIRTSCHAFTLICHKEIT

- > Deutschland 2011: 21 Jahre Stau, 450.000 km Stillstand, 100 Millionen Euro Kosten
- > staubildende Faktoren in Echtzeit können bis zu 25% Kraftstoff sparen

KLIMASCHUTZ

- > Fahrzeuge weltweit: Heute: 900 Mio. 2020: 1,1 Mrd.
- > Güter mit besten Verkehrsmittel verladen, intelligent zusammenführen, ausliefern
- > Planung von Mitfahrern

INFOTAINMENT

- > mobiles Internet, neue Unterhaltungsangebote
- > zahlreiche Apps machen das Fahrzeug zum wertvollen Begleiter

DIENSTLEISTUNG

- > selbstständige Ferndiagnose
- > Anzeige von freien Parkplätzen, Hotels, Restaurants oder Ladestationen
- > Fahrerassistenzsysteme entlasten den Fahrer

12.10.2012

VDA PowerPoint

Seite 30

Fig. 29: Digitale Vernetzung als Revolution rund um das Automobil

sim^{TD} – Sichere Intelligente Mobilität Testfeld Deutschland

VDA

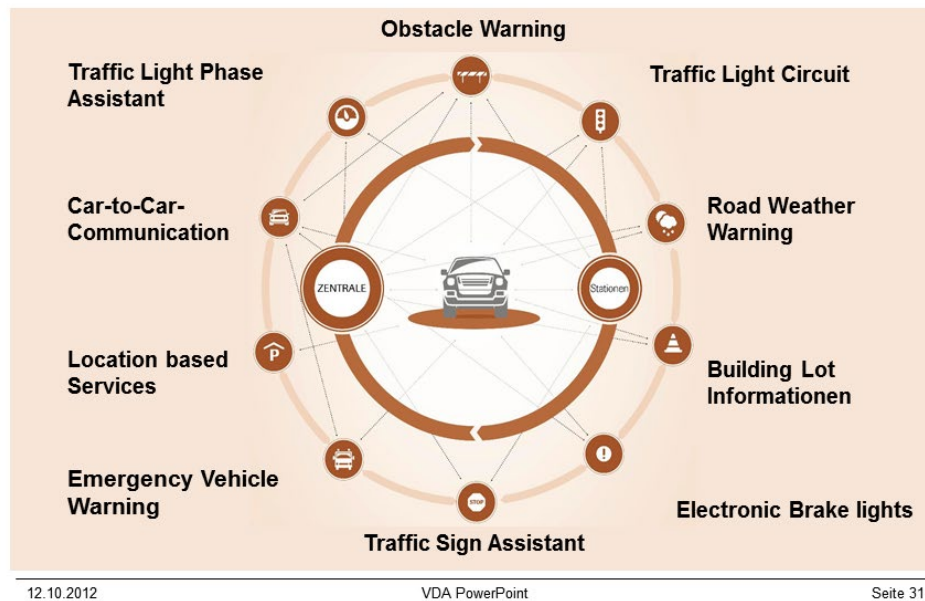


Fig. 30: sim^{TD} – Sichere Intelligente Mobilität Testfeld Deutschland

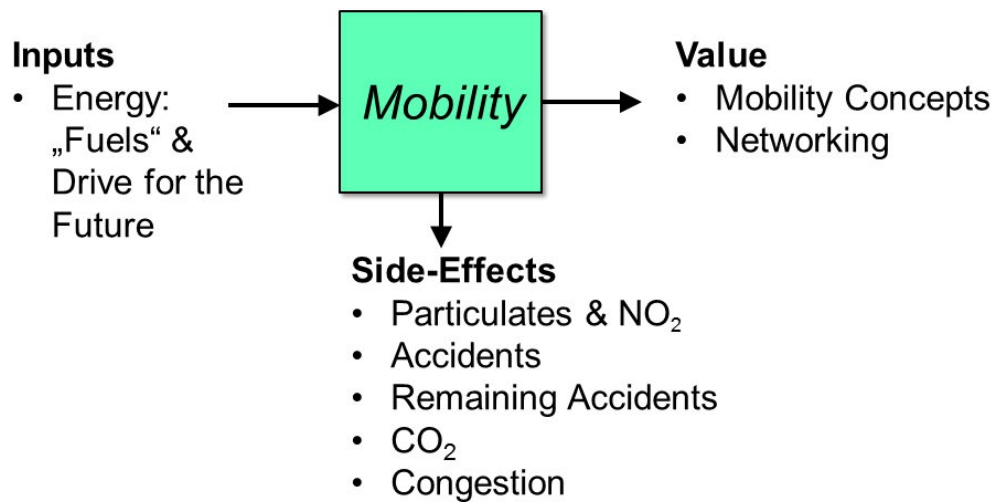
Mobility Concepts: Car-Sharing & Intermodality

VDA



Fig. 31: Mobility Concepts: Car-Sharing & Intermodality

Chances & Remaining Challenges

VDA

12.10.2012

VDA PowerPoint

Seite 33

Fig. 32: Chances & Remaining Challenges

Summary

VDA

- Many former problems are solved with the latest generations of cars
- Areas for further progress are
 - Last remaining pollutants
 - CO₂-Reduction
 - Sustainable Energy-Sources for Transport
 - Networking and Car2X Communication
 - Mobility Concepts

12.10.2012

VDA PowerPoint

Seite 34

Fig. 33: Summary

VDA

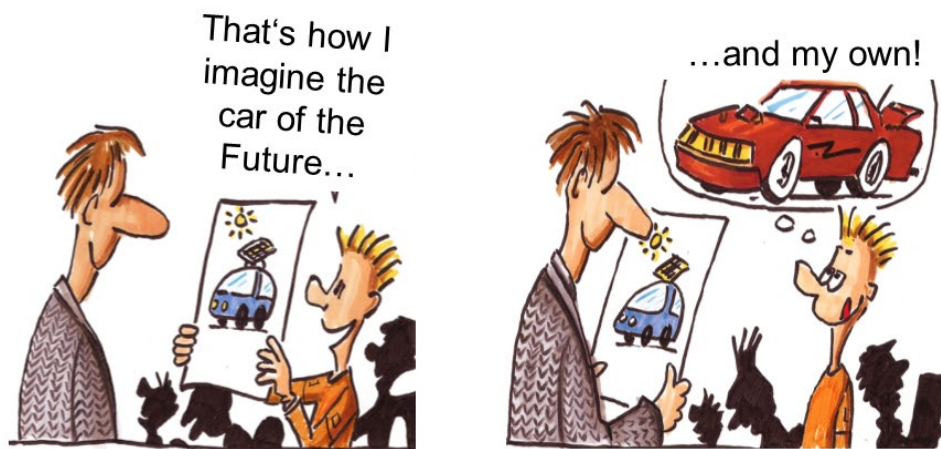


Fig. 34: Summary