



**It's all about acceptance,
stupid
The role of co-mobility
for the Verkehrswende in
Germany**

4th World Collaborative Mobility Conference

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UN Paris Agreement on Climate Change The first-ever universal, legally binding global climate deal!



The first-ever universal, legally binding global climate deal.

Ambition: “well below 2° C” (Vision 1,5° C).

Meaning: Extensive decarbonisation of the whole economies! Urgency for drastic emission reductions in the transport sector increases.

Agora Verkehrswende (Transforming Transportation) - Who we are



Independent **Think Tank** and high-level council under the lead of former ED of UNEP Achim Steiner

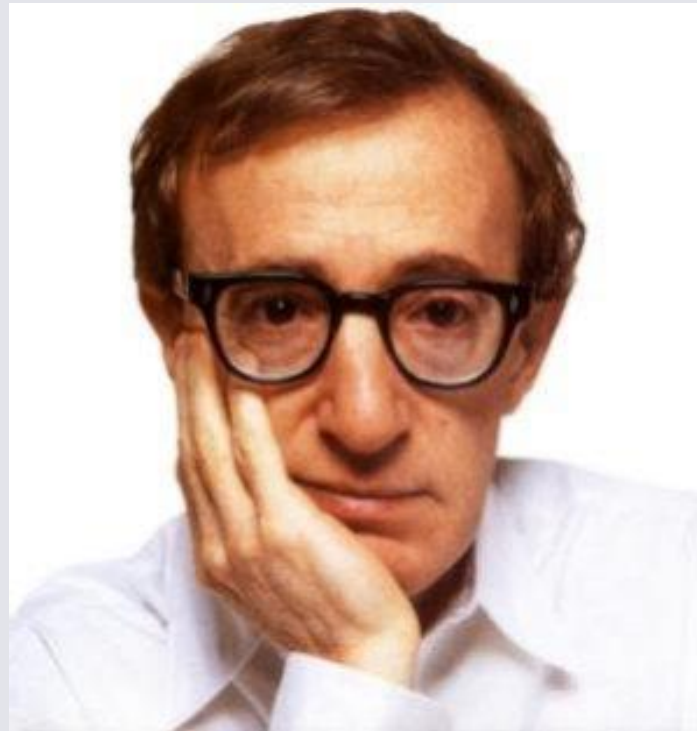
Agora is a joint **philanthropic initiative** of Stiftung Mercator Foundation und European Climate Foundation

Mission: To successfully decarbonize the transport sector in Germany?

Focus: Transport system in Germany in the European and international context

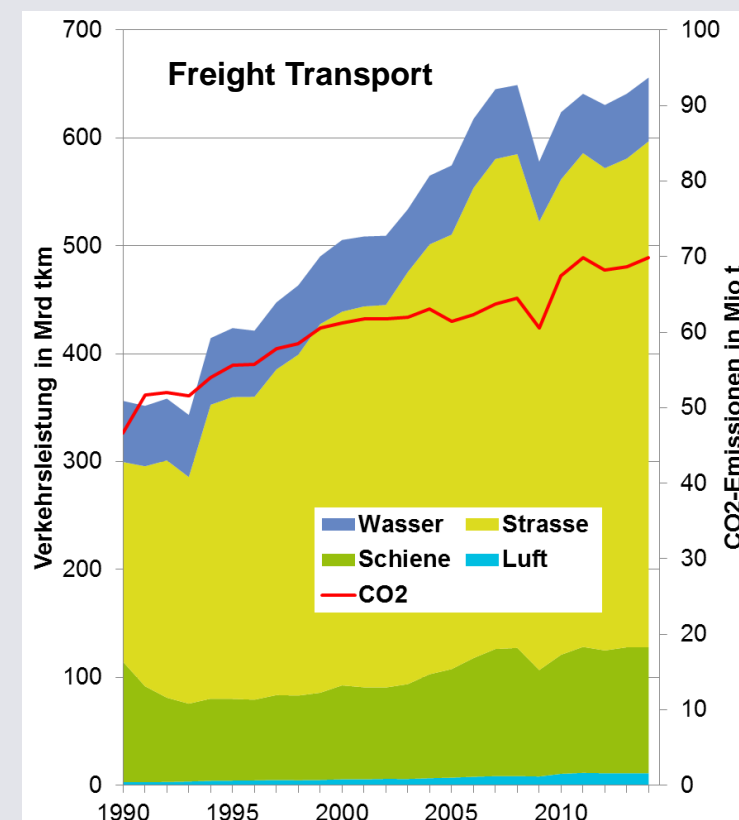
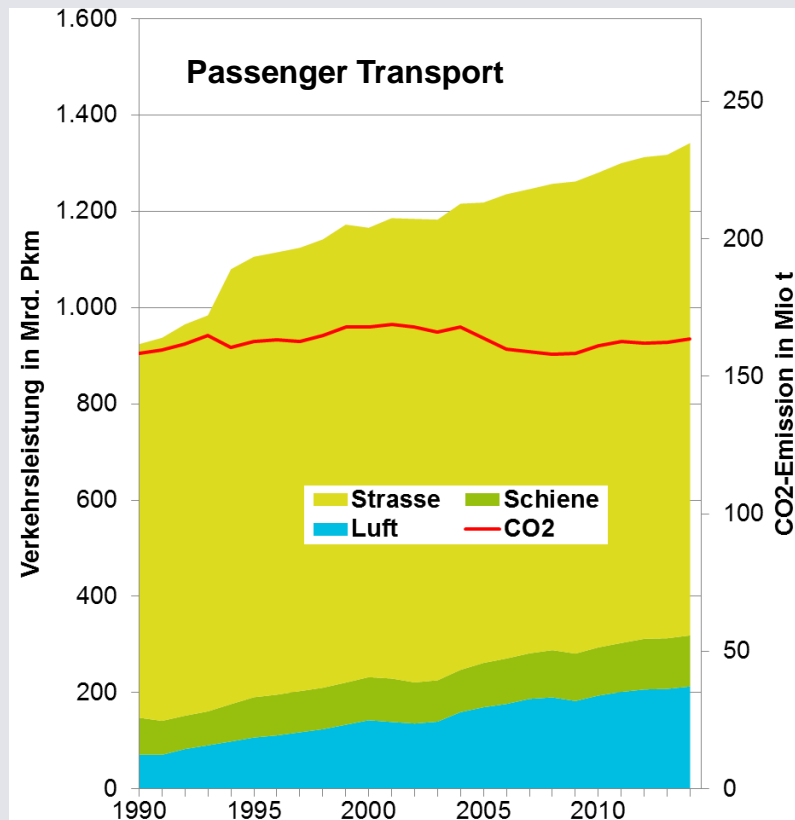
Will Germany's Verkehrswende (Transport Transformation) be as successful as the Energiewende?

From WoCoMoCo to WoLoCaCoMoCo? 😊



“Confidence is what you have before you understand the problem.” – Woody Allen

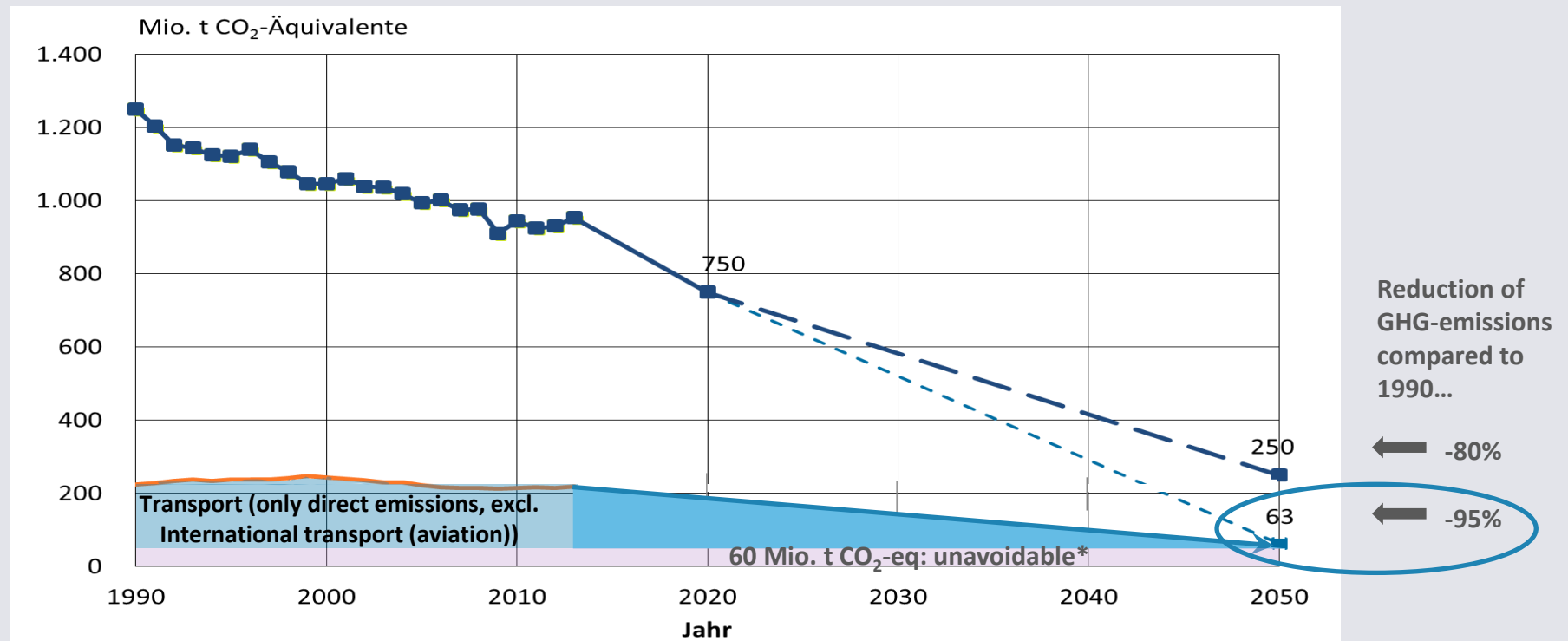
Development of the passenger and freight transport volume in Germany and related CO₂-emissions 1990 - 2014



Source: TREMOD 6, ifeu 2016

How the transport sector has to contribute to the climate protection goals of Germany?

Potential developments of the GHG-emissions in Germany until 2050

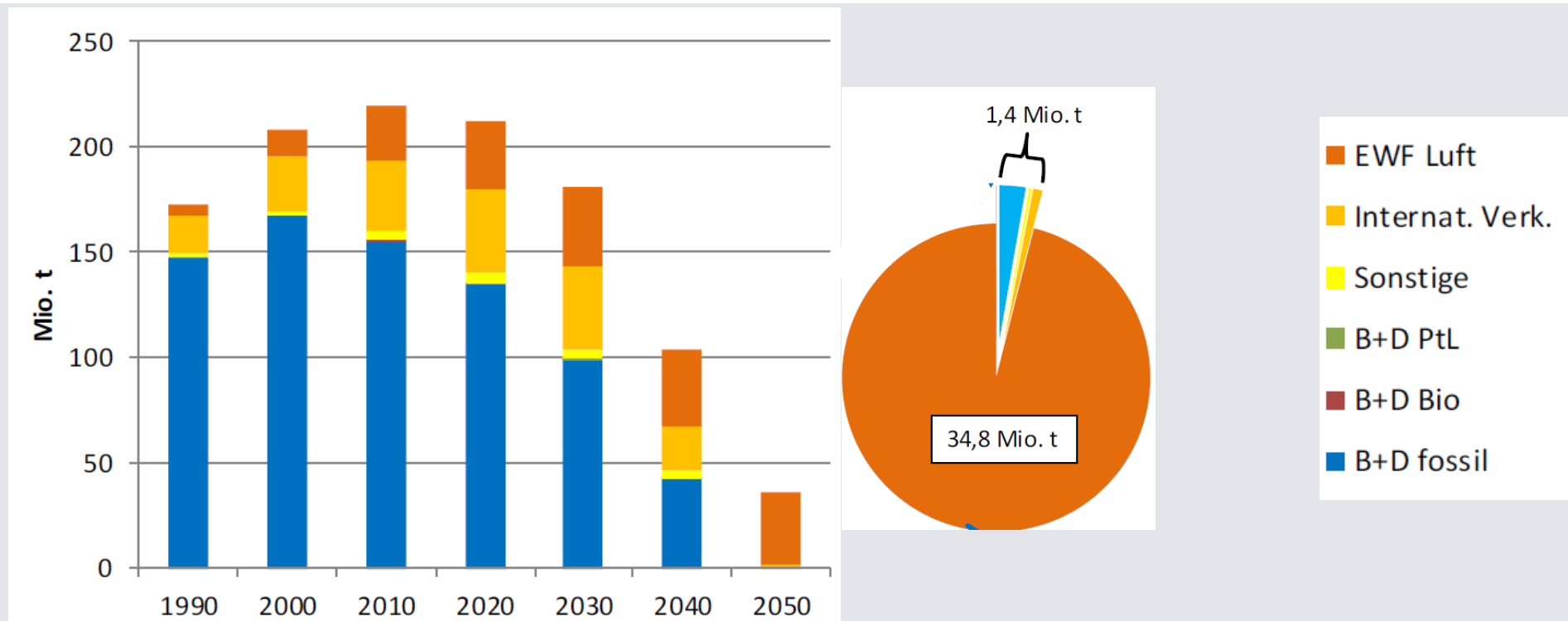


Source: Umweltbundesamt; calculations by INFRAS.

* UBA publication „Treibhausgasneutrales Deutschland im Jahr 2050“

Development of GHG emissions of the whole transport sector in Germany 1990-2050.

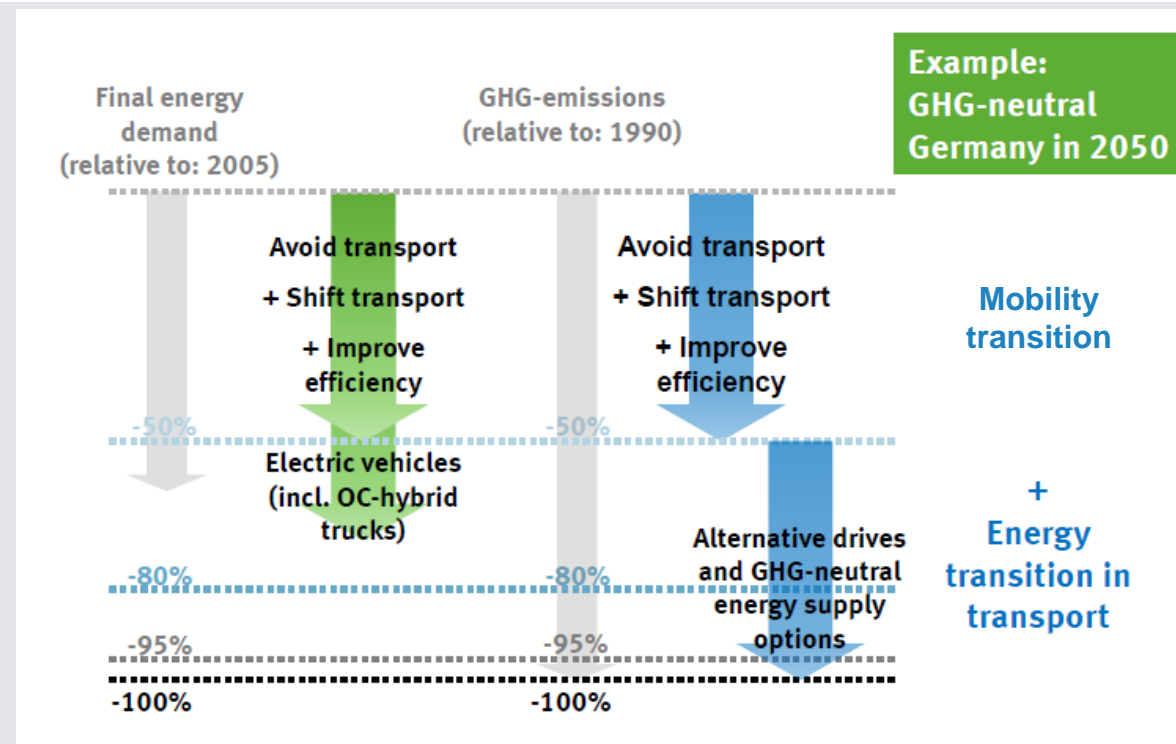
Scenario assuming GHG neutrality of transport in Germany in 2050.



Source: IFEU/INFRAS/LBST 2016.

To reach ambitious climate protection goals transport almost has to be climate neutral by 2050.

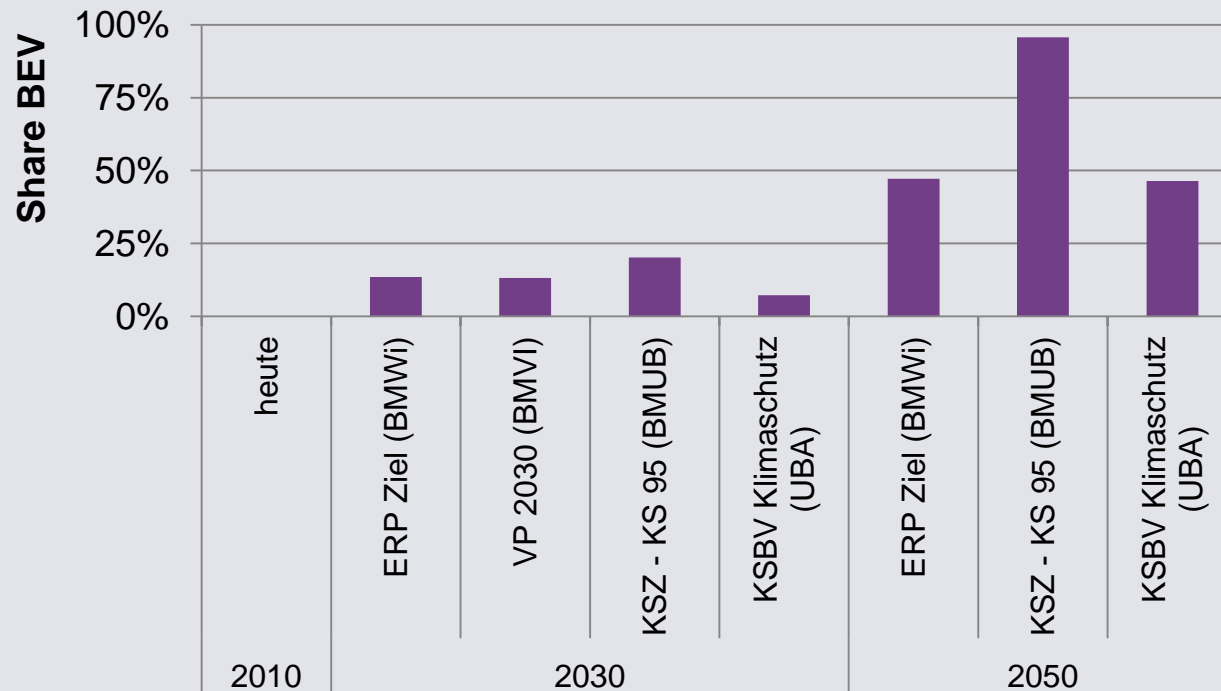
Scenarios of GHG emissions in Germany until 2050



Source: UBA

For Passenger cars electric vehicles are the core option for decarbonising motorised individual transport in Germany.

Share of BEV in different scenarios for the transport in Germany.

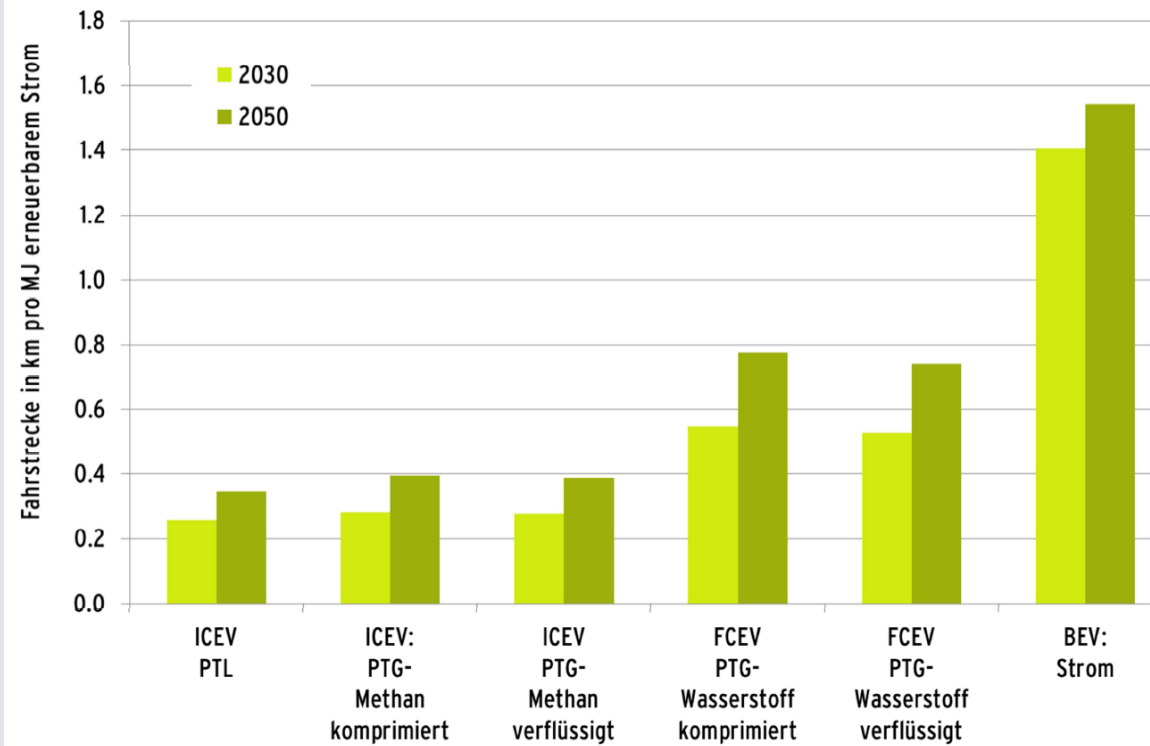


Source: Compilation Öko-Institut

- Objective of 6 Mio. electric vehicles by 2030 can be reached in different scenarios.
- In 2050 the share of electric vehicles in the fleet is between 50 and 100%.
- Electric vehicles are the core option in all future transport scenarios for Germany.

The direct use of electricity in LDV is the most energyefficient option...

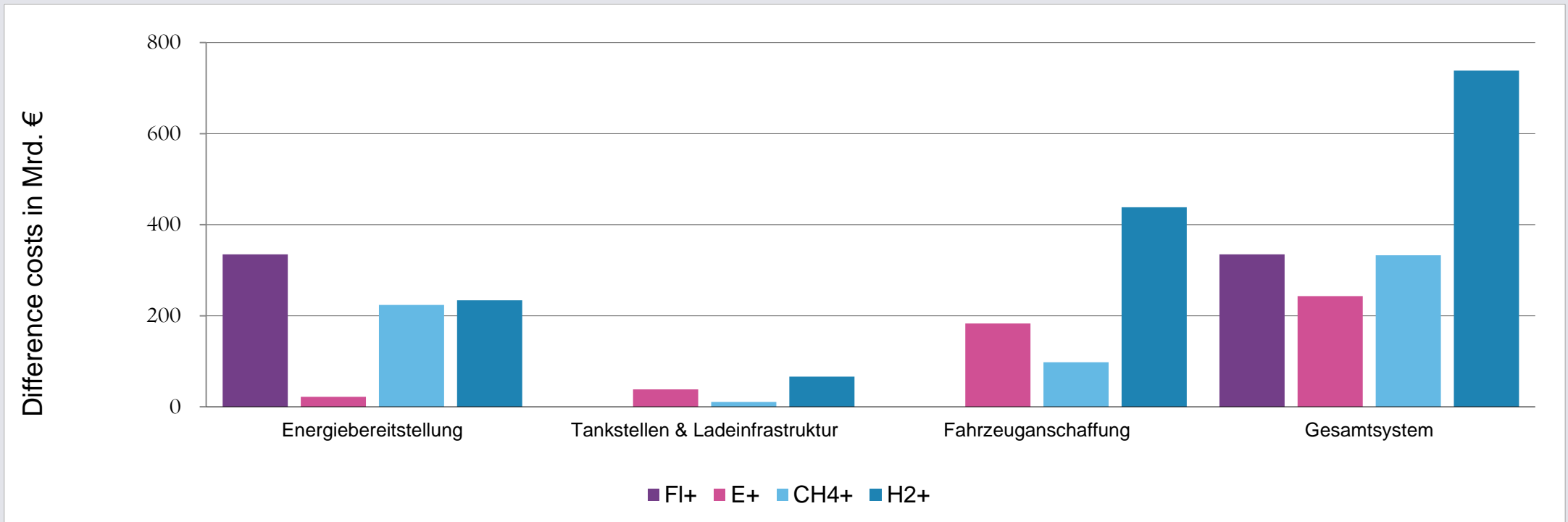
Driving distance per MJ renewable electricity for a midclass LDV 2030/2050



Source: INFRAS/Quantis 2014.

Electric vehicles are economically the most efficient option for the decarbonisation of the transport .

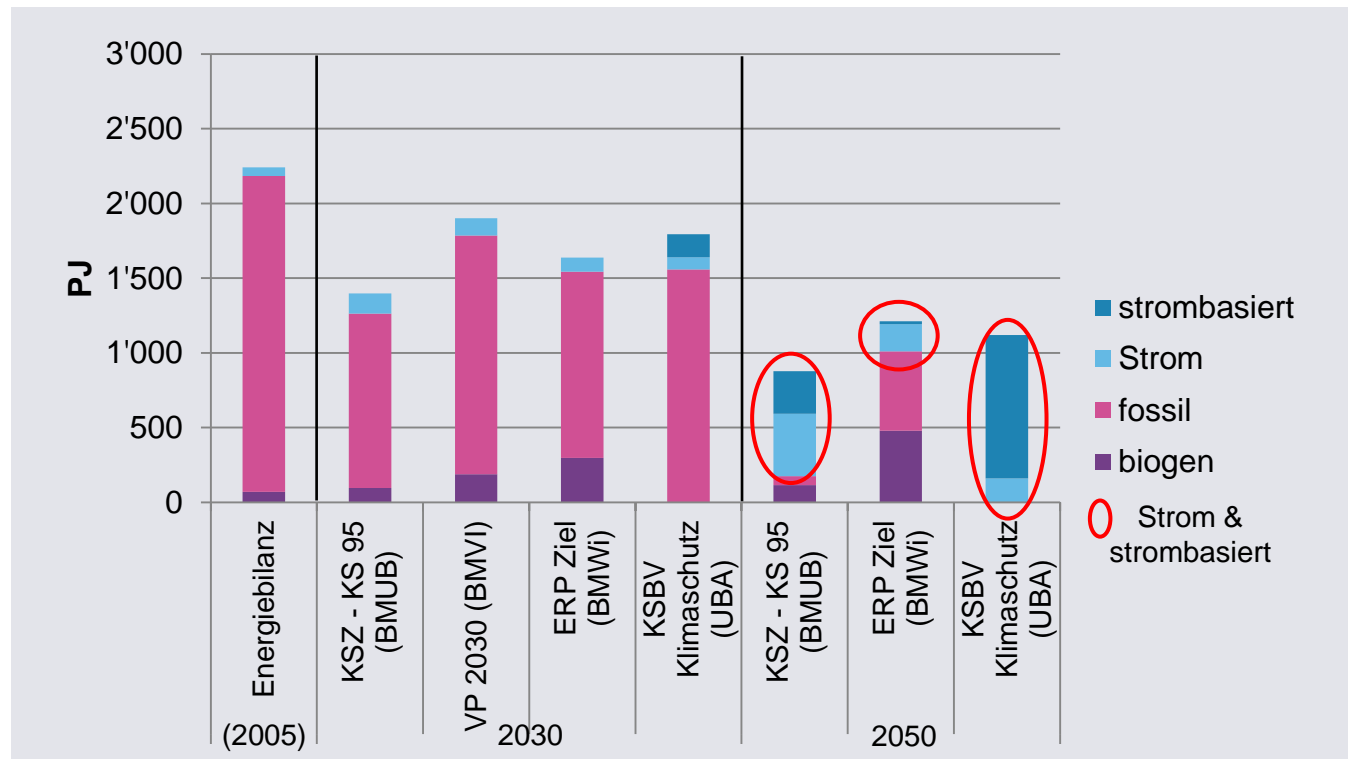
Accumulated difference costs for different technology options until 2050 compared to the reference case.



Source: Öko-Institut, INFRAS, DVGW, im Auftrag UBA, unpublished

Development of the energy demand of the German transport sector in different scenarios

Final energy demand of Germany's transport sector

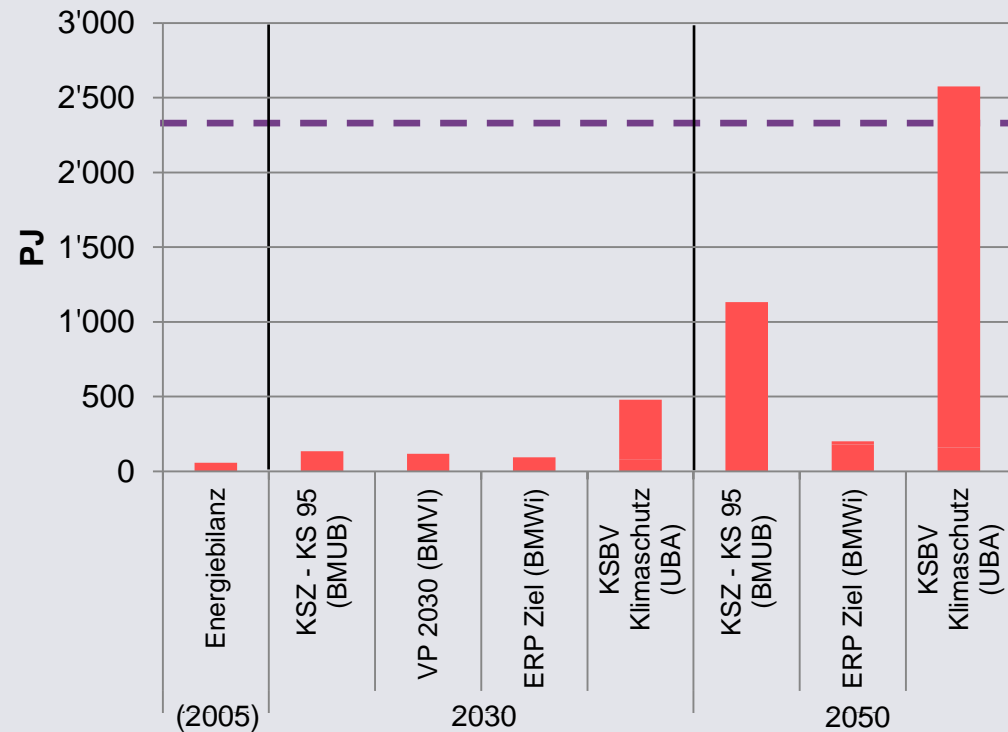


Source: Compilation

- The final energy demand in 2050 can be reduced by 60 % (compared to 2005).
- Energy efficiency remains the most important prerequisite to keep costs increase acceptable.
- In 2030 the main energy source may still be fossil fuels.
- For some segments the total decarbonisation requires the use of PtX (fuels generated from renewable electricity=).

The electrification and decarbonisation of the transport sector .

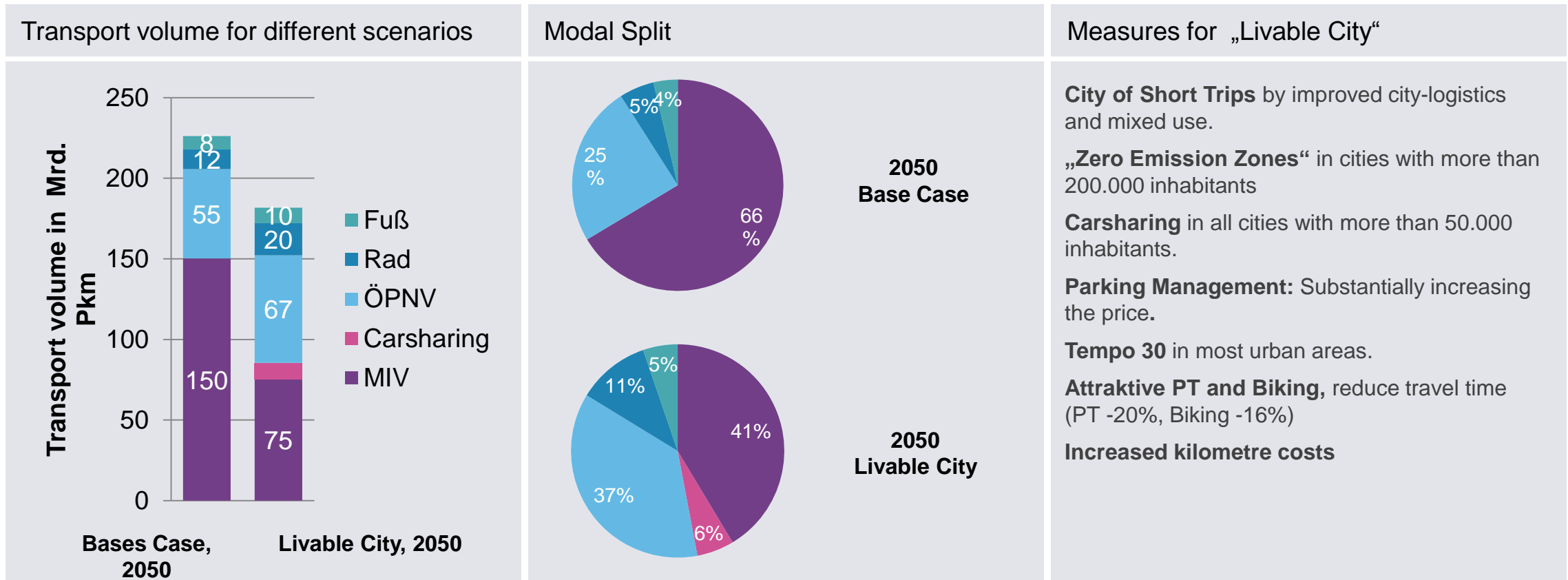
Gross electricity production in Germany 2015: 2.344 PJ - - -



Source: Compilation Öko-Institut

- Coupling the electricity and transport sector will be key for the decarbonisation of the transport sector.
- Important: Powerbased fuels (PtX) should only be used where there is no other option (i.e. aviation).
- It might be necessary to import most of the necessary PtX instead of producing it in Germany.

Improving the quality of Urban Living: Implications for Transport Demand



Source: Renewbility III, Öko-Institut, DLR, INFRAS, ifeu, commissioned by BMUB, unpublished

What will autonomous vehicles mean to carsharing and the transport systems in our cities?

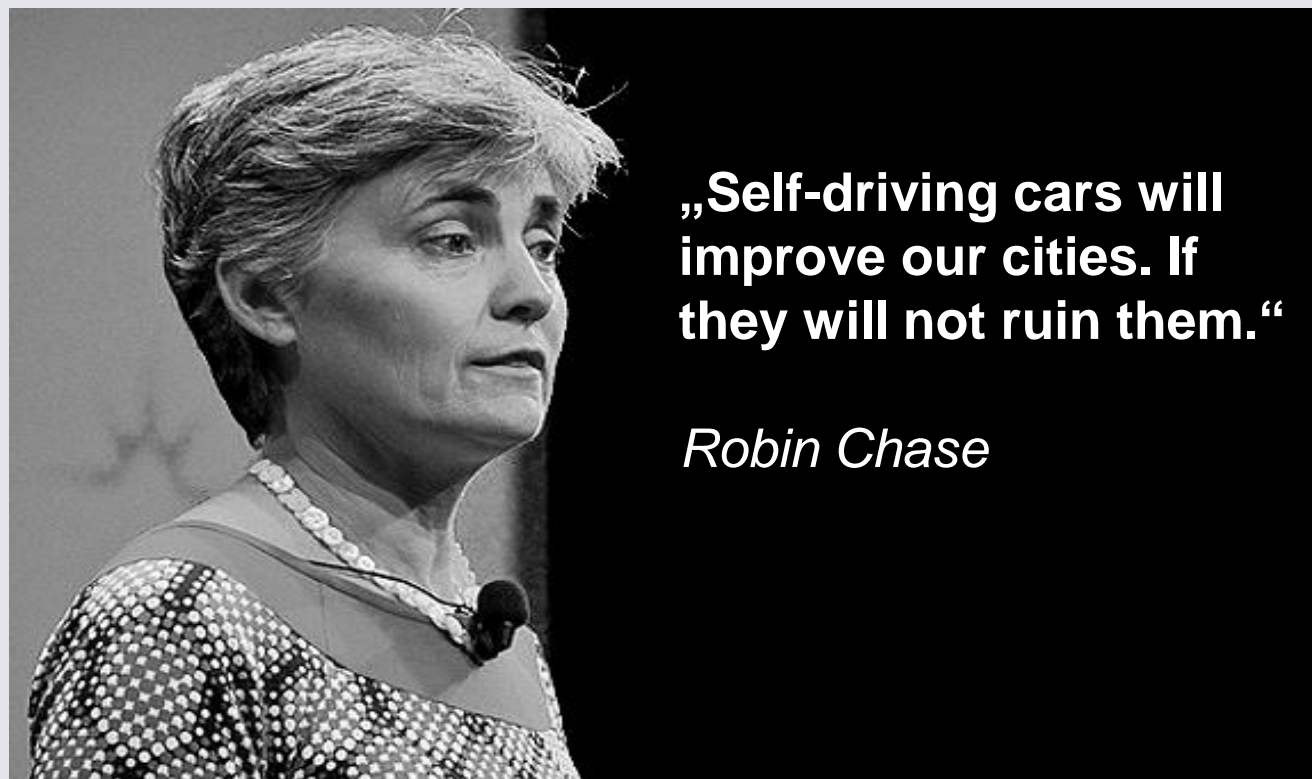
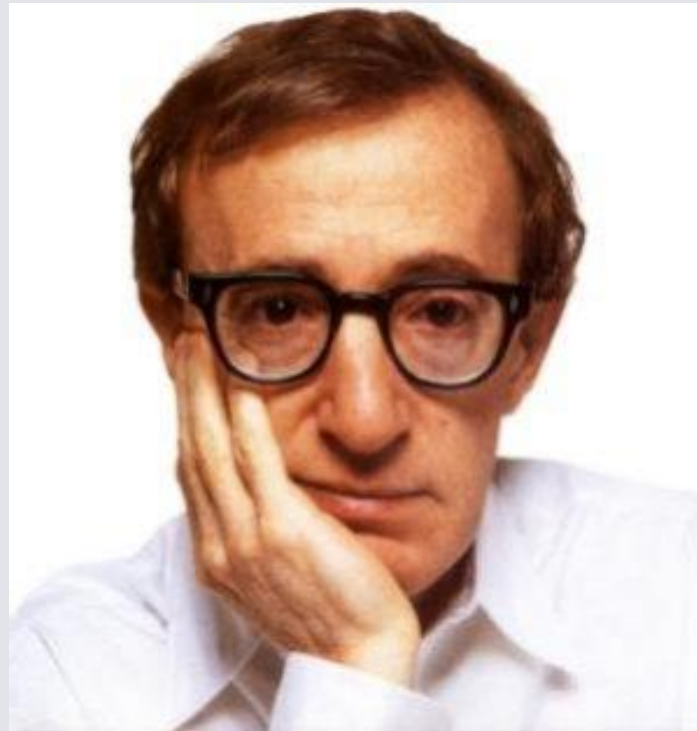


Foto: Robin Chase, Co-founder and former CEO of ZIP car

- Fully autonomous vehicles might contribute to or jeopardise what we are working for.
- Carsharing might play a key role for autonomous vehicles, but...
- ...sharing cars might not be sufficient anymore. Sharing rides might become more and more important
- Cities might have to proceed from a wait to see approach to an active design of the new mobility services.

Will Germany's Verkehrswende (Transport Transition) be as successful as the Energiewende?

From WoCoMoCo to WoLoCaCoMoCo (World Low Carbon Cooperative Mobility Conference)? ☺



*“Confidence is what you have **because** you understand the problem.” – Woody Allen*

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Looking forward to continuing the dialogue in Munich!

Your comments or questions are most welcome!

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Agora Verkehrswende is a joint initiative of Stiftung Mercator Foundation and the European Climate Foundation.