What are the Opportunities in the Transport Sector to help Drive Renewable Energy Uptake? – Renewables Perspective

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The 'Verkehrswende' needs both the Mobility Revolution as well as the Energy Transition in Transport.

Decarbonisation needs a comprehensive approach:

- Amibitious Climate Goals can only be met by both Mobility Revolution and Energy Transition in Transport.
- The Mobility Revolution will reduce the Final Energy Demand of Transport, so the remaining Demand can be covered by Renewables.
- GHG-reductions by more than 60% can only be reached with the Energy Transition in Transport.

Sources: BMUB Klimaschutzbericht 2015; Projektionsbericht der Bundesregierung 2015. UBA 2015
Options for the 'post fossil' Future of Transport

Mainly Electricity from Sun and Wind will replace Fossil Fuels.

Source: Figure by INFRAS
Building Blocks for the Energy Transition in Transportation (until 2050)

- **LDV**
  - BEV as benchmark

- **HDV**
  - Preferential technology *open*

- **Bus**
  - BEV DC-charging most promising

- **Aviation**
  - Power-to-Liquid as alternative to Biokerosene

- **Marine**
  - PtX indispensable

- **Rail**
  - Complete electrification

*Source: INFRAS/Quantis 2015.*
Development of the Final Energy Demand of Transport in Germany in different Scenarios

Final Energy Demand of Transport in Germany.

- Final Energy Demand can be reduced by about 60% until 2050 (compared to 2005).
- Final Energy Demand in 2030 will still mainly be covered by Fossil Fuels.
- In 2050 most Scenarios assume a high share of BEV.
- In some Scenarios PtX or Biofuels will complete the Decarbonisation of Transport.
- Increasing Efficiency is a prerequisite that the remaining Energy Demand can be covered by Renewables at economically feasible costs.

Source: Compilation by Öko-Institut
The limited efficiency of the Production of Power Generated Fuels (PtX) can result in a very high Electricity Demand.

Power generated Fuels can only be produced in Germany to a small extent. The major share will have to be imported.

The systematic coupling of the Electricity and Transport Sector are essential.

**For Discussion:** PtX should only be used where we have no other (more efficient choices).

Source: Compilation by Öko-Institut
Thank you very much for your attention!

Comments or Questions? – Please do not hesitate to contact me:

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