ZERO GHG FREIGHT IN THE EU

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BRUSSELS

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How can we achieve zero emission road freight and buses by 2050? What policy incentives do we need?
WHY?

Evolution of Trucks GHG Emissions

- CO2 equiv (Mt)
- Graph showing the Trend of CO2 emissions from Trucks over the years.
WHY?

• Answer to a question

Need to go to zero!
• What is the EUTRM?

Model EU GHG emission and pollutant scenarios from the transport sector. Developed with Cambridge Econometrics
WHAT?

Business-as-usual

Table 1: Main socio-economic assumptions to the EUTRM

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2010</th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population (millions)</td>
<td>484</td>
<td>500</td>
<td>510</td>
<td>516</td>
<td>521</td>
<td>522</td>
</tr>
<tr>
<td>GDP (billions)</td>
<td>11459</td>
<td>13155</td>
<td>14849</td>
<td>17023</td>
<td>19824</td>
<td>22980</td>
</tr>
<tr>
<td>Freight Activity* (billion tkm)</td>
<td>2274</td>
<td>2157</td>
<td>2388</td>
<td>2855</td>
<td>3390</td>
<td>3928</td>
</tr>
</tbody>
</table>

Figure 1: GHG emissions from heavy goods vehicles, rail freight and buses in the EU and in the Nordics, under a business-as-usual scenario
From more efficiency towards clean freight

Low hanging fruit – efficiency first

- Fuel efficiency improvement for trucks and buses
- Rail freight
- Logistics efficiency

Beyond – towards clean transport

- Battery electric trucks and urban buses
- eHighways
- In addition: Additional fuels or other options
LOW HANGING FRUIT
• Stagnated progress last 20 years
• Still lots of potential
• More efficiency at lower costs for transport sector
• Assumed 40% improvement
ELECTRIFIED RAIL FREIGHT

• Has big potential (Sweden and Finland)
• Many hurdles: cross-border, inflexible, lack of competition etc.
• Modal share can be increased from 18 to 23%
• 20% of trucks run empty
• Low costs of road transport (incl. fuel)
• Not reflecting the damage they cause
• Empty running could be reduced by one quarter and demand by 5%
WHAT?

Low-hanging fruit

Summary

Figure 5: GHG emissions from heavy goods vehicles, rail freight and buses in the EU and in the Nordics. Solid lines show the BAU emissions, dashed lines are the emissions after adoption of all LHF policy options.
BEYOND LOW HANGING FRUIT

PATHWAY TO ZERO
DIFFERENT EFFICIENCIES

Figure 9: Energy efficiency of different technologies
COSTS?

Carbon Neutral Transport in Germany: Scenarios to 2050 and infrastructure requirements

Road: long haul transport (trucks/busses)

(Source: Oeko-Institut/INFRAS/DVGW-EBI 2016)
ELECTRIC BUSES AND LIGHT TRUCKS

• Most efficient low carbon option given the range of the vehicles
• Some OEMs are starting to move (slowly)
• 60% of new truck sales will be electric by 2050
• All urban buses will be zero emission by 2050
HEAVY TRUCKS – E-HIGHWAY

• Tested in DE and SE
• Preferred option because of the energy efficiency compared to hydrogen and PtX
• Too heavy for full electric?
• 90% of all new long-haul registrations would be catenary trucks by 2050
HOW TO CLOSE THE GAP?

![Graph showing EU28 and Nordic Country Emission Pathways](image)
UPDATE: FULLY-ELECTRIC LONG HAUL TRUCKS

- Analysis published today
- Feasibility
- Range
- % of VKM
POLICY RECOMMENDATIONS

- CO2 Standards for Trucks and Trailers
- ZEV Mandate for Buses and Trucks
- Zero-Emission Liquid Fuels
- Road Charging and Fuel Taxes
- Building Right Infrastructure
- Zero-Emission Strategies for Cities