Projected growth in demand & CO₂ emissions

Second meeting of the CEPS Task Force on EU Transport Policy
Innovation, Integration and 21st Century Infrastructure

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Unit A4: Strategy & Economic Assessment

EU27 Reference Scenario

Source: PRIMES modeling for EC’s Impact Assessments
EU27 Reference Scenario
passenger-km

Source: PRIMES modeling for EC’s Impact Assessments

EU27 Reference Scenario
tonne-km

Source: PRIMES modeling for EC’s Impact Assessments
Transport White Paper
change in passenger & freight transport activity
Policy Option 4 relative to 2005

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2030</th>
<th>2050</th>
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</thead>
<tbody>
<tr>
<td><strong>Passenger transport activity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road</td>
<td>17%</td>
<td>24%</td>
<td>27%</td>
</tr>
<tr>
<td>Rail</td>
<td>32%</td>
<td>63%</td>
<td>111%</td>
</tr>
<tr>
<td>Aviation</td>
<td>37%</td>
<td>82%</td>
<td>119%</td>
</tr>
<tr>
<td><strong>Freight transport activity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road</td>
<td>21%</td>
<td>33%</td>
<td>53%</td>
</tr>
<tr>
<td>Rail</td>
<td>36%</td>
<td>60%</td>
<td>87%</td>
</tr>
<tr>
<td>IW W</td>
<td>75%</td>
<td>49%</td>
<td>60%</td>
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<tr>
<td>Maritime</td>
<td>22%</td>
<td>47%</td>
<td>101%</td>
</tr>
</tbody>
</table>

Source: PRIMES modeling for EC’s Impact Assessments

Energy Mix

Source: PRIMES modeling for EC’s Impact Assessments
EU27 transport CO$_2$ emissions

![Graph showing EU27 transport CO$_2$ emissions from 1990 to 2050 for Road and Aviation sectors. The graph includes lines representing different scenarios: Reference (frag. action, ref. fossil f. prices), Effect. Techn. (glob. action, low fossil f. prices), Delay. Electr. (glob. action, low fossil f. prices).](image)

Source: PRIMES modeling for EC’s Impact Assessments

Transport CO$_2$ emissions decomposition

![Bar chart showing average annual percent change in transport CO$_2$ emissions decomposition from 2010 to 2050 for different factors: Activity, Energy Efficiency, Fuel Choice.](image)

Source: PRIMES modeling for EC’s Impact Assessments
**Electricity**

Source: PRIMES modeling for EC's Impact Assessments

![Graphs showing GHG emissions and road transport emissions over time.](image)

**Biofuels**

attaining simultaneously multiple objectives

- eliminating net deforestation by 2030
- reduce (limit increase) in agricultural emissions
- increased biomass use for energy

**Reference** case: biomass production more than doubles by 2050

**Decarbonisation**: the production of biomass more than triples

![Graph showing crop commodity price index over time.](image)
Summary

• Even with decarbonisation, transport activity is expected to grow significantly in next 40 years
• Huge variation of growth between modes
• Road transport’s share might decrease, but still will be by far the most important mode
• Main contributors to CO₂ reductions:
  – Improved efficiency (advanced engines)
  – Fuel choice (shift from oil to electricity & biofuels)
  – Carbon intensity of fuels (electricity, biofuels)

THANK YOU!

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