Infrastructure for alternative road fuels

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Traditional fossil road fuels

• Diesel (available everywhere)
• Gasoline (available everywhere)

• LPG (in some countries)
• CNG (in some countries)
Alternative fuels (fossil and/or renewable)

<table>
<thead>
<tr>
<th></th>
<th>Fossil</th>
<th>Renewable</th>
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</thead>
<tbody>
<tr>
<td>LNG</td>
<td>LNG</td>
<td>LBG</td>
</tr>
<tr>
<td>Ethanol</td>
<td>-</td>
<td>E10, E85, ED95</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>X</td>
<td>X</td>
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<tr>
<td>DME</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Methanol</td>
<td>X</td>
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<tr>
<td>Biodiesel</td>
<td>-</td>
<td>FT, HVO, FAME</td>
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Challenges

- Fuel production capacity and cost
- Vehicle compatibility with fuels
- Customer acceptance
- Infrastructure investment for fuel distribution and facilities at gas stations
- Drastically falling total demand for road fuels due to improved fuel economy and electrification
- Taxation of new fuels compared to traditional
Different kind of fuel markets

1. Niche markets based on local fleets of dedicated vehicles – predominantly in large cities

2. Major freight corridors (TEN-T) – a pump every 300 km may be sufficient

3. Towns and rural areas – low density of population and demand – commercially not room for many parallel alternatives
Proposed EU directive COM(2013) 18 final

- Making it mandatory for Member States to make LNG and hydrogen available by 2020 at fuelling points no further than respectively 400 and 300 km apart

- Demanding every Member State to provide a minimum number of electric vehicle recharging points of which 10% must be publicly accessible
Critical issues that need to be addressed

• How many fuels can different markets support?
• Who should pay? Distributors or the State?
• Grounds for European harmonisation (beyond technical standards)? Top-down or bottom-up?
• Drop-in (E20 and HVO 50) versus pure fuels?
• Electricity versus liquid and gaseous fuels?
• How should hydrogen be taxed?