1. Better balanced mobility

   Is mobility policy also energy/climate change policy?

2. Transport taxes and public finance

   Tax base erosion for greener transport?

3. Low carbon vehicles - Electric vehicles

   Subsidies well-spent?
1. Better balanced mobility

- Mobility systems are surprisingly homogenous. **Modal and technological diversification.**

- Diversification is compatible with greening. **But it is not automatic.**

- The potential is not large enough to attain ambitious decarbonisation targets. **Changing energy technology is key.**
How much could mobility policy contribute to saving energy?

No general answer: starting points and possibilities differ strongly.

Transport Outlook 2012

Mobility policy can slow down emission growth (compare “high and low car ownership scenarios”) but not stop it.

It can do so without strongly reducing mobility.
Index of total passenger mobility (passenger-km, all modes) and CO2-emissions

non-OECD, 2010–2050

high and low car ownership (index 2010=100)
2. Transport taxes and public finance

Taxes are on fossil fuels. Effect on CBA of better fuel economy?

e.g. improve fuel economy to go from 160gCO2/km to 130g, rebound effect of 20%, technology cost of ~1,000€

<table>
<thead>
<tr>
<th>Change in consumer WTP:</th>
<th>462€ to 1,852€</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in value of tax revenue:</td>
<td>-1,150€ to -885€</td>
</tr>
</tbody>
</table>

Combine with “revenue neutral” km tax

<table>
<thead>
<tr>
<th>Change in consumer WTP:</th>
<th>184€ to 736€</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in value of tax revenue:</td>
<td>91€ to 139€</td>
</tr>
</tbody>
</table>
2. Transport taxes and public finance

better fuel economy is fiscally expensive

shifting to non-transport tax base may increase economic costs of revenue-raising

km-taxes improve the balance, but reduce the appeal of better fuel economy to drivers
3. Low carbon vehicles – Electric vehicles

Why?
Greenhouse gas emissions, energy security, innovation and growth - congestion, local pollution

Lower carbon

More efficient conventional vehicles
Hybrids

- slow down depletion of fossil fuel stocks (buys time)
- slow down accumulation of CO2 in atmosphere (buys time)
- toughens competition for alternative fuels (need more time)

Alternative technologies – EV
Like-for-like comparison

Renault EV models have nearly identical fuel counterparts –
We looked at advertised prices, applied French taxes and energy costs
and assessed consumer and societal (ex-tax, incl. €5k subsidy) costs
over 15 year vehicle lifetime over typical travel distances.

Excess cost,
Electric vs. Fuel:
Consumer  = 4.4k€
Societal   = 12.2k€
(35 km/day)

Excess cost,
Electric vs. Fuel:
Consumer  = 4.8k€
Societal   = 12.0k€
(30 km/day)

Excess cost,
Electric vs. Fuel:
Consumer  = -4.3k€
Societal   =  7.0k€
(90 km/day)
Electric vehicles make sense for high travel scenarios
  But a real tension exists between higher travel, useable battery range and costs limiting the potential for cost-effective EV deployment (with current batteries)

A business case already exists for fleets and owners who have elevated daily travel
  Fleet operators have capital to cover upfront investment, especially since they can recoup costs rapidly - subsidising these EVs diverts limited resources

Electric cars are not “zero emission” vehicles but rather “displaced emission vehicles”
  Efficient EV, even with high-carbon electricity, emit less lifecycle CO2 than fuel vehs, not the case with less efficient EVs
1. Better balanced mobility
   Better mobility can be greener, greener mobility may or may not be better mobility

2. Transport taxes and public finance
   Fiscal impacts important, higher investment in green mobility means less €€ for other worthwhile investments

3. Low carbon vehicles - Electric vehicles
   Targeting of assistance important, outcomes uncertain and CO2 impacts are linked to investments in low-carbon electricity
Thank you

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<table>
<thead>
<tr>
<th>Index 2050 2010=100</th>
<th><strong>Passenger Kms</strong></th>
<th><strong>Tonne Kms</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OECD</td>
<td>Non-OECD</td>
</tr>
<tr>
<td>GDP</td>
<td>210-230</td>
<td>440-520</td>
</tr>
<tr>
<td>GDP/cap</td>
<td>185-210</td>
<td>320-370</td>
</tr>
<tr>
<td>Transport</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pkm or tkm</td>
<td><strong>110-150</strong></td>
<td><strong>240-360</strong></td>
</tr>
<tr>
<td>CO2</td>
<td>80-110</td>
<td>240-450</td>
</tr>
</tbody>
</table>