Low Emission Strategies
Using Public Procurement to Reduce Road Transport Emissions
Liverpool City Region, April 2011

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Low Emission Procurement Strategies

• Focus on public sector procurement of vehicles, utilities and services
• 16 to 20% GDP of EU
• Aim is:
  - Secure deployment of LEV
  - Achieve cost efficiencies
  - Enable economies of scale
  - Promote innovation
  - Clarify legal framework
  - Create evaluation & monitoring systems
  - Secure political buy-in
• Newsnight review of public sector cuts in Liverpool
Procurement Guidance

• Best Practice Guidance on the use of public sector procurement to reduce road transport emissions

• Working Group includes: 
  YPO, Leeds CC, Sheffield CC, Greenwich, Sefton, City, York, TfL & GLA

• Procurement Frameworks, Green Procurement Policies, Sustainable Tender Evaluation, Leasing Innovation, Forward Commitment, Full Life Cycle Costs, Demos etc

• EU Cleaner Vehicle Directive & Lifetime Costs
  - Cleaner Road Transport Vehicle Regs 200?

• Draft Guidance April 2011 & full consultation later in 2011
Aspects of the Guidance

• Whole Life Costs
<table>
<thead>
<tr>
<th>Type of Fuel</th>
<th>Fuel consumption</th>
<th>CO2 Emissions (g/km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diesel, petrol, LPG, emulsion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural gas or hydrogen gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquid hydrogen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity</td>
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</table>

<table>
<thead>
<tr>
<th>Fuel Consumption</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2 Emissions (g/km)</td>
<td></td>
</tr>
<tr>
<td>Pollutant emissions (g/km or g/kWh)</td>
<td></td>
</tr>
</tbody>
</table>

| NOx (Nitrous oxides)              |                   |
| PM (Particulate matter)           |                   |
| NMHC (Non-methane hydrocarbons)   |                   |

| Reference Fuel                    |                   |
| Cost of Reference Fuel (€/l)      |                   |
| Cost of CO2 (€/t)                 |                   |

| Cost of Vehicle (€)               |                   |

| Lifetime Withdraw (€/l)           |                   |

Results of Lifetime Costs

<table>
<thead>
<tr>
<th>Energy consumption</th>
<th>€/LU/Lt</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2 emissions</td>
<td>€/LU/Lt</td>
</tr>
<tr>
<td>Pollutant emissions</td>
<td>€/LU/Lt</td>
</tr>
</tbody>
</table>

Total Operational Lifetime Costs: €/LU/Lt

Total Lifetime Costs: + Cost of Vehicle €/LU/Lt
Aspects of the Guidance

• Whole Life Costs
• Procurement Frameworks
London Electric Vehicle & Infrastructure Procurement Framework

Target – 1000 vehicles in service by 2015
£60 - £80m Procurement Framework
Open to Boroughs
Aspects of the Guidance

• Whole Life Costs
• Procurement Frameworks
• Sustainable Tender Specification & Evaluation
  - EU Vehicle Procurement Standards
  - Government Buying Standards
  - Westminster RCV Procurement
• Innovation of Procurement
  - Leasing
  - Forward Commitment
• eAuctions
• Eco-labelling
• Green Procurement Policies
• Evaluated Demonstration
Camden Green Vehicle Policy Development

**Current Clean Vehicle Fleet**

- 150 Bi-Fuel LPG vans (Ford)
- 7 Electric (cars, scooter, van) (Peugeot, Modec)
- 7 – Hybrid cars (Toyota)
- 1 – Bi-fuel biomethane van (Iveco)
- ULSDiesel - 95% Euro 4, 5% Euro 5

**Future Clean Vehicles**

- Bi-fuel compressed biomethane gas (Iveco, Mercedes, Dennis Eagle)
- Hybrid Assist (Ashwoods, Connaughts)
- Electric – (Smiths Electric, Modec)
- Hydrogen fuel cell bicycles (Horizon)
Key Results From Two Studies

- Electric vehicles largest emissions reductions when using renewable electricity
- Vehicle size influences emissions
- Bio-methane cleanest burning fuel and lowest life cycle environmental impact
- Bio-diesel produced from waste oil second best performing biofuel
- Bio-diesel reduces PM emissions but slightly increases in NOx
- Bio-ethanol from cereals - increase in aldehyde emissions, life cycle CO₂ can be high depending on cultivation & production method
Camden Green Vehicle Policy Development

1) Electric  
2) Plug-in hybrid  
3) Bio-methane fitted with hybrid assist  
4) Bio-methane  
5) Compressed Natural Gas/Liquid Natural Gas fitted with hybrid assist  
6) Bi-fuel Liquid Petroleum Gas fitted with hybrid assist  
7) Compressed Natural Gas/Liquid Natural Gas  
8) Bi-fuel Liquid Petroleum Gas  
9) Petrol Hybrid  
10) Diesel Hybrid  
11) Bio-diesel produced from used cooking oil  
12) Bio-diesel produced from virgin plant oil  
13) Bio-ethanol  
14) Ultra low sulphur petrol  
15) Ultra low sulphur diesel

**Clean Vehicles & Target Dates**

<table>
<thead>
<tr>
<th></th>
<th>2009/10</th>
<th>2010/11</th>
<th>2011/12</th>
<th>2012/13</th>
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</thead>
<tbody>
<tr>
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<td>15% from</td>
<td>20% from</td>
<td>25% from</td>
<td>30% from</td>
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<tr>
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<td>options 1-4</td>
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<tr>
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<td>60% from</td>
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<td>options 5-10</td>
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</tr>
<tr>
<td>15% from</td>
<td>15% from</td>
<td>10% from</td>
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<tr>
<td>options 11-15</td>
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**Example European Emission Standards**

<table>
<thead>
<tr>
<th></th>
<th>2009/10</th>
<th>2010/11</th>
<th>2011/12</th>
<th>2012/13</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Passenger cars/light commercial (&lt;3.5T)</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Euro 4</strong></td>
<td>100%</td>
<td>75%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Euro 5</strong></td>
<td></td>
<td>25%</td>
<td>75%</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Euro 6</strong></td>
<td></td>
<td></td>
<td>25%</td>
<td>50%</td>
</tr>
</tbody>
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Next Steps:

• Public consultation & Workshops

• Establish best practice & case studies database

• LA Decision Making Tool
  - Public Private Partnerships
  - Defra Flexible Framework
  - Look at process from need to purchase onwards
  - Provide clarity to legal process
  - Knowledge for informed decision making
  - Outline options that can be tailored to LA
  - Evaluation of effectiveness
Thank you!

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