Public engagement on Electric Vehicles

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Presentation to the Energy Research Partnership, Friday 10th May 2013
• Introduction
• The climate change and transport choices segmentation study
• Public engagement on EVs
  – Who?
  – What?
  – How?
• Priority areas for research
• Q & A
INTRODUCTION
What is transport?

- The movement of goods and people and, increasingly, information

As we get richer… …we travel further and faster… …and use more energy and produce more CO$_2$…

- Transportation systems are the backbone of social and economic development and are a determinant of the quality of urban life
### Key global transport issues

<table>
<thead>
<tr>
<th>Issues</th>
<th>Context</th>
<th>Solutions</th>
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</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>Rising wealth</td>
<td>Technology</td>
</tr>
<tr>
<td>Capacity</td>
<td>urbanisation</td>
<td>Policy</td>
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<tr>
<td>Demand</td>
<td>Ageing population</td>
<td>Society</td>
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</tbody>
</table>
- Team aims to increase the use of behavioural evidence by DfT, key work includes:
  - Research on the role of the Plug-in Car Grant and Plugged-in Places scheme in Electric Vehicle uptake
  - The DfT Behavioural Insights Action Plan
  - Developing resources on behaviour change:
    - Behavioural Insights Toolkit
    - Segmentation study
The challenges of public engagement – understanding attitudes

- The attitude-behaviour gap
- Cognitive polyphasia – we may have more than one view on a subject depending on which ‘hat’ we’re wearing
- One size fits all approach doesn’t work
- You can engage with the public on any subject – you just need the right methods
- Deliberative research is key
As someone who is concerned about climate change, I think...

As a motorist, I think...

As a dad who has to get my kids to school safely, I think...

As someone who loves my holiday in the sun, I think...
Segmentation is the process of splitting a population into smaller groups to make it easier to understand, and interact with.
• This study produced a segmentation of the national population, based on their attitudes to climate change, and their transport behaviour.

• A face-to-face survey with just under 4,000 adults.

• Qualitative research to refine the segments and understand the barriers and motivations to using different types of transport.
The segments
Segment 1: Older, less mobile car owners

- Typically older, largely retired
- All have mobility difficulties
- Mobility difficulties largely determine / shape transport behaviour
- Mobility issues prevent walking, cycling and using public transport
- Heavily reliant on their cars to get around
- Tend to travel less than other car owning segments
- Sceptical about climate change

Segment 2: Less affluent urban young families

- Young (mostly under 40)
- Some young families, some young people still living with parents
- Relatively low incomes, less well educated, living in urban areas
- Typically one older, smaller car per household
- Latent desire to own a larger, faster car, but constrained by income
- Travel / drive less than more affluent groups
- More likely than other car-owning segments to use non-car modes
- Ambivalent about climate change
PE on EVs needs to focus primarily on those who purchase new cars

- The vast majority of EV purchasers currently buy new EVs. To stimulate the EV market, public engagement should focus on new car purchasers.

- New car purchasers are generally older and from high income groups.

Source: DfT ‘Climate change and transport choices segmentation study’, 2011
EV owners are likely to come from three segments

<table>
<thead>
<tr>
<th>Car owning segments (at least one vehicle in household)</th>
<th>% of new car owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Older, less mobile car owners (9% of population)</td>
<td>13%</td>
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<tr>
<td>- Older, all have mobility difficulties</td>
<td></td>
</tr>
<tr>
<td>- Transport behaviour shaped by lack of mobility</td>
<td></td>
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<tr>
<td>- Travel less than all other car owning segments</td>
<td></td>
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<tr>
<td>- Heavily reliant on the car to get around</td>
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<tr>
<td>2 Less affluent urban young families (21% of population)</td>
<td>7%</td>
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<tr>
<td>- Lower travel needs, desire to own larger/faster car but behaviour constrained by relatively low income</td>
<td></td>
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<tr>
<td>- Relatively less reliant on the car than other car owning groups</td>
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<tr>
<td>- Less well educated, more ambivalent about climate change</td>
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<tr>
<td>3 Less affluent older sceptics (12% of population)</td>
<td>12%</td>
</tr>
<tr>
<td>- Older, very few have mobility difficulties; less affluent.</td>
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<tr>
<td>- Lower travel needs, related to lower incomes and life-stage</td>
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<tr>
<td>- Low level of education, more sceptical about climate change</td>
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</tr>
<tr>
<td>4 Affluent empty nesters (9% of population)</td>
<td>24%</td>
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<tr>
<td>- Older, largely retired, affluent, well educated</td>
<td></td>
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<tr>
<td>- Average levels of car travel; drive less than younger affluent segments</td>
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<tr>
<td>- Mostly likely segment to buy cars brand new</td>
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<tr>
<td>- Pro-environmental but more sceptical about climate change specifically</td>
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<tr>
<td>5 Educated suburban families (17% of population)</td>
<td>21%</td>
</tr>
<tr>
<td>- Working age, higher income; well educated, many have children</td>
<td></td>
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<tr>
<td>- Travel and drive a lot; most likely segment to travel by plane</td>
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<tr>
<td>- Positive about cycling, but distances and safety are barriers</td>
<td></td>
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<tr>
<td>- Concerned about climate change but have high travel needs</td>
<td></td>
</tr>
<tr>
<td>6 Town and rural heavy car use (13% of population)</td>
<td>22%</td>
</tr>
<tr>
<td>- Working age, higher income but less well educated</td>
<td></td>
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<tr>
<td>- Most ‘rural’ segment, but also living in urban areas</td>
<td></td>
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<tr>
<td>- Highest levels of car ownership and car travel; own largest cars</td>
<td></td>
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<tr>
<td>- Speed/performance and style/design important in car buying</td>
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</tbody>
</table>

Source: DfT ‘Climate change and transport choices segmentation study’, 2011
...but second hand purchasers are also important

- Most car purchases are second hand
- To support the EV market in moving from ‘early adopters’ to ‘mass market’ uptake, public engagement will need to focus on segments of the population that are likely to buy EVs second hand

How people's main car was purchased

- New: 69%
- Second hand: 29%
- DK/Not stated: 2%

Source: DfT ‘Climate change and transport choices segmentation study’, 2011
New and second hand car purchasers vary by segment

How main car was purchased, by car-owning segments

- Older, less mobile: 35% new, 65% second hand
- Less affluent urban young families: 14% new, 86% second hand
- Less affluent older sceptics: 23% new, 77% second hand
- Affluent empty nesters: 56% new, 44% second hand
- Educated suburban families: 28% new, 72% second hand
- Town and rural heavy car use: 37% new, 63% second hand

Source: DfT ‘Climate change and transport choices segmentation study’, 2011
PUBLIC ENGAGEMENT ON ELECTRIC VEHICLES

What?
Consider what’s **important** to new car purchasers: reliability, costs, safety and comfort.

Factors which new car buyers consider important in choice of car:

- **Reliability**: 70%
- **Costs**: 51%
- **Safety**: 54%
- **Comfort**: 55%
- **Interior space / functionality / boot size**: 35%
- **Style / design**: 27%
- **Environmentally friendly / low CO2 emissions**: 29%
- **Small engine**: 18%
- **Features - sat nav, power steering, music etc**: 17%
- **Speed/performance**: 17%

Source: DfT ‘Climate change and transport choices segmentation study’, 2011

Forthcoming research on PiCG recipients shows that EV owners are more demanding.
Factors which new car buyers consider important in choice of car

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Source: DfT ‘Climate change and transport choices segmentation study’, 2011
…but stated environmental concerns aren’t always reflected in purchasing behaviour.

Source: DfT ‘Climate change and transport choices segmentation study’, 2011
Remember the **barriers**: recharging, initial cost, lack of knowledge, running/maintenance costs.

Forthcoming research on PiCG recipients shows that other barriers include:
- A general lack of knowledge about EVs
- Negative media portrayal
- Concerns about sub-optimal performance
  - Residual value
  - Battery life

Source: Opinions Survey August 2011.
This is based on full license holders who had heard of electric cars prior to being surveyed (99% of full licence holders). Respondents could choose more than one response and were not prompted with a list of possible responses.
Base numbers: 796.
…some buyers perceive a trade-off between lower emissions and other factors, particularly those in higher income groups.

Barriers to buying a car with lower CO2 emissions and/or a smaller engine

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>Income quintile</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>They are too small</td>
<td>26%</td>
<td>17%</td>
<td>27%</td>
<td>26%</td>
<td>32%</td>
<td>29%</td>
</tr>
<tr>
<td>They are not powerful enough</td>
<td>24%</td>
<td>16%</td>
<td>15%</td>
<td>18%</td>
<td>31%</td>
<td>43%</td>
</tr>
<tr>
<td>They are more expensive</td>
<td>17%</td>
<td>30%</td>
<td>20%</td>
<td>24%</td>
<td>18%</td>
<td>8%</td>
</tr>
<tr>
<td>They are too slow</td>
<td>8%</td>
<td>4%</td>
<td>4%</td>
<td>11%</td>
<td>8%</td>
<td>14%</td>
</tr>
</tbody>
</table>

Source: DfT ‘Climate change and transport choices segmentation study’, 2011
Running costs are a greater motivation for buying a low emission car than environmental concerns, for most income groups.

Motivations for buying a car with lower CO2 emissions and/or a smaller engine

<table>
<thead>
<tr>
<th>Motivation</th>
<th>All</th>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Because they are cheaper to run</td>
<td>55%</td>
<td>55%</td>
<td>52%</td>
<td>62%</td>
<td>66%</td>
<td>51%</td>
</tr>
<tr>
<td>I care about the environment</td>
<td>43%</td>
<td>34%</td>
<td>44%</td>
<td>42%</td>
<td>47%</td>
<td>55%</td>
</tr>
<tr>
<td>To reduce my CO2 emissions</td>
<td>37%</td>
<td>36%</td>
<td>35%</td>
<td>34%</td>
<td>30%</td>
<td>36%</td>
</tr>
<tr>
<td>Lower tax band</td>
<td>20%</td>
<td>16%</td>
<td>15%</td>
<td>25%</td>
<td>21%</td>
<td>23%</td>
</tr>
<tr>
<td>Because they are cheaper to buy</td>
<td>13%</td>
<td>13%</td>
<td>13%</td>
<td>12%</td>
<td>12%</td>
<td>12%</td>
</tr>
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Source: DfT ‘Climate change and transport choices segmentation study’, 2011
PUBLIC ENGAGEMENT ON ELECTRIC VEHICLES

How?
How to engage: private buyers use a variety of information during the decision-making process.

**Sources of information used by new car buyers**

- **Salesperson / Dealership**: 64%
- **Consumer guides / magazines**: 37%
- **Manufacturer's / independent web site**: 46%
- **Sales Brochure / Spec Details**: 47%
- **Friends / Family / Work Colleagues**: 27%
- **Newspaper Articles**: 12%
- **Garage / Mechanic**: 8%
- **Government / Vehicle Certification website**: 9%
- **TV / Radio / Billboard Adverts**: 7%
- **Car label**: 7%
- **Government / Vehicle Certification guide book**: 3%

*Source: DfT ‘Climate change and transport choices segmentation study’, 2011*
Ongoing evidence gaps

- The relative influence of different information sources on EV purchasing
  - Tackling negative media coverage
  - Information needs of priority groups (e.g. ‘affluent empty nesters’)
  - Touch points – when do people access the information?
- The future second hand EV market: timing, consumer confidence, barriers and incentives
- EV driving and charging behaviours
Forthcoming research

• Forthcoming OLEV / DfT research on the PiCG and PiPs scheme will fill significant gaps in our knowledge of EV users – publication likely in July

• Business segmentation – an evidence base review has commenced to assess the possibility of segmenting the business population - publication towards the end of the year
Links to key resources

Attitudes to Climate Change omnibus:

The Climate Change and Transport Choices Segmentation Study:

Behavioural Insights Toolkit:
Any questions?

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