InclusivEV; Integrated, Smart, Low Carbon, Shared Mobility

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Reducing Emissions From Transport

- Alternative Fuels for Freight
- Fleet Assessments
- Locating Suitable Infrastructure Sites
- Developing Low Emission Strategies for Cities
- Connected and Autonomous Vehicles
- Supporting Bids and Proposals
- Vehicle Trial Support
- Smart Charging and Vehicle-to-Grid
- Training Courses

Helping clients to assess, evaluate, implement and deliver low emission vehicle and associated infrastructure strategies.
InclusivEV Demonstrator

Low Carbon Vehicle Event

12th - 13th September 2018

www.cenex-lcv.co.uk

- 3,866 attendees
- 226 exhibiting organisations
- 1,531 organisations attending
- 100+ vehicles
The problem: Are electric cars too expensive?

Renault Zoe cost $24,000

Renault Clio cost $19,000

Fuel cost 4cent mile or 13cent mile
Maintenance $120 or $400
150 miles on one charge or 400 per refuel
Residual value after three years?

Total cost of owning the Zoe reduces the more the vehicle is used
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The opportunity

• 30% of the average European city is high density and low income.
• 45 million households high density and low income
• Demand for car share services 30%
• Market size is 13.5 million households or 54,000 car share vehicles.
• CO2 saving (well-to-wheel) of 150,000 tonnes and Air Quality improvements
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Project Overview

• €1.8m ($2.1m) EIT Climate KIC and €2m partner co-funding;

• Electric car sharing scheme focusing on low income, disadvantaged neighbourhoods, providing increased access to mobility;

• The Demonstrator project has been developed to deploy 30 battery electric vehicles in each Solihull, Valencia and Modena, and validate the business case;

• The project will improve quality of life for local residents, increasing social mobility, access to healthcare, education, leisure facilities, job interviews etc.;

• Low price entry point to increase uptake in low-income communities;

• Improved air quality and knowledge of low emission vehicles.
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Challenge

• Low income
• Cash based lifestyles
• Pay as you go
• Vehicle security
• Real time information
A car sharing scheme needs to be financially sustainable whilst also being affordable.

<table>
<thead>
<tr>
<th>Cost</th>
<th>€7.00</th>
<th>€6.00</th>
<th>€5.00</th>
<th>€4.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost per hour per hire</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff and marketing cost per year (per car)</td>
<td>€5,336</td>
<td>€5,336</td>
<td>€5,336</td>
<td>€5,336</td>
</tr>
<tr>
<td>Total cost per year (Inc. vehicle running costs)</td>
<td>€14,141</td>
<td>€14,141</td>
<td>€14,141</td>
<td>€14,141</td>
</tr>
<tr>
<td>Hours per year booking required to cover costs</td>
<td>2,020</td>
<td>2,357</td>
<td>2,828</td>
<td>3,535</td>
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<tr>
<td>Hours per week booking required to cover costs</td>
<td>39</td>
<td>45</td>
<td>54</td>
<td>68</td>
</tr>
<tr>
<td>% use needed to cover costs</td>
<td>23%</td>
<td>27%</td>
<td>32%</td>
<td>40%</td>
</tr>
</tbody>
</table>

Table 2.4: Breakeven costs of an independent UK car share scheme, utilising four cars
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North Solihull, Birmingham

Demonstrator with E-Car club/Europcar

- 8 locations with the right level of population density (1,000 households within 500m)
- 10,005 licence holders without access to a car
- 2,000 active users required
- 4 cars per location total of 32 cars
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Social & Environmental Benefits

• Improved access to services
  • Public transport, walking or cycling are not always a viable option due to poor service provision or long distances.

• Stronger social networks
  • Easier for people to visit their friends and family and attend social gatherings, thus strengthening their social networks.

• Reducing carbon emissions
  • Electric vehicles use can reduce carbon emissions by c35%; the use of car sharing schemes can lead to increased vehicle occupancy rates, increased use of public transport and increased walking and cycling.

• Improving urban air pollution
  • Electric vehicles have zero tailpipe emissions, resulting in an improvement in urban air quality, an issue in many urban areas in the EU. A reduction in these emissions improves air quality and improves health.
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Conclusions

• €5 ($5.86) an hour, no membership fee
• Flexible payment methods including the ability to pay by cash and pay for use without subscription/membership costs
• 1,000 homes within 500m of central hub with 4 vehicles
• Mixed development (residential and business) to attract a mix of users
• Public transport available but runs infrequently
• Large scale demonstrator to prove model

Figure 4.3: Residents’ payment method preferences
Thank you for listening
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