

Car Clubs and Carbon Savings

The role of car clubs in reducing carbon emissions

Introduction

This briefing aims to explore the ways in which car clubs can provide carbon savings for individuals and society and thereby reducing the threat of global warming from increased carbon dioxide in the atmosphere. Emissions from transport are currently responsible for around 25% of the UK's total carbon dioxide output and car clubs can play a role in helping reduce emissions from private car transport. Reducing car dependency through car clubs leads to reductions in carbon dioxide emissions through decreased car miles, reduced numbers of cars on the roads and a shift to more efficient vehicles. These benefits are applicable not just to local authorities influencing individual travel behaviour, but also to employers who are seeking to reduce their organisations' carbon footprint in line with their corporate social responsibility statement. Such reductions not bring only environmental gains, but also potential cost savings for employers and individuals alike.

Car clubs

A car club provides its members with quick and easy access to a car for short term hire. Members can make use of car club vehicles as and when they need them. All they have to do is:

- Book - for as little as half an hour at a time, using telephone or internet. The booking can be made well ahead of time or with a few minutes notice.
- Unlock - cars are located at designated parking bays in the local area and accessed using the member's smart card
- Drive – Once inside the driver enters a pin and drives away, returning the car at the end of the journey. It is possible to extend the booking if necessary
- Pay - Pay-as-you-go charges include fuel and maintenance costs. A subscription charge is paid monthly or annually.

Reducing mileage

Car clubs have been shown to reduce members' mileage by an average of 50%¹ compared to pre-membership levels. They do this by making the cost of car use more transparent and by encouraging members to plan trips in advance. This reduction occurs as a result of members transferring to other transport modes such as public transport, walking or cycling. In the UK, the average car owner drives 13,438 km per year², emitting 2.246 tonnes of carbon dioxide. After joining a car club, reducing mileage by 50% and using a newer, more efficient car, this figure would be reduced to 0.87 tonnes of carbon dioxide per year.

More efficient vehicles

Taking older cars into account, UNECE stated in a recent report that the average carbon emissions of a private UK car are 167.2kg per year³. The European Union has a set target of reducing carbon dioxide emissions from new cars to 120g/km by 2012, however two of the most commonly used UK car club vehicles, the Toyota Yaris and the Citroen C3, already meet this efficiency target. Combining the emissions totals of five of the most commonly used car club vehicles, it is possible to



¹ Lloyd (2006) Perfect Partners? University of Huddersfield: Huddersfield

² DfT (2007) Transport Statistics for Great Britain 2006, pp163, DfT: London

³ UNECE (2007) Delivering Energy Efficiency, pp94, UNESC: Geneva

generate an average carbon dioxide emission of 129.6g/km⁴. Therefore every kilometre travelled in a car club car as opposed to a private car saves 37.6g of carbon dioxide by virtue of the cars being more efficient.

Fewer vehicles on the road

It is worth mentioning that one car club car replaces somewhere between 6 and 20 private cars. In terms of carbon savings, any emissions generated in vehicle manufacture are therefore reduced as fewer cars are required. Although these emissions are difficult to calculate, they are likely to be significant.



Combining trips

Car club pricing structures encourage members to 'save up' and join trips together. It takes around 2 miles for engines to reach optimum temperature during which emissions are at around 20% more per mile. The average journey length for a private car trip is 6.8 miles so around 10% of the distance driven is under cold start conditions, whereas club car drivers average journey lengths are 30-50 miles, because members tend to combine many reasons for travel within one trip to make the hire more efficient. So only 2% of the distances driven are under cold start conditions.

Locking in the benefits

Car clubs can unlock the potential of an employer travel plan by making other transport schemes viable. They can not only achieve a reduction in lone driver commuting, but can also achieve an increase in the use of public transport, walking and cycling as employees realise the possibilities of different transport modes. For instance, if an employee swaps from private car to commuting by bus (using the on-site car club for work trips during the day when necessary) the car club is helping support the viability of that particular bus route.

Measuring Carbon Benefits

Carplus is currently running a three year research project sponsored by DEFRA. The purpose of the project is to measure the environmental benefits of using car club cars compared to private cars.

The carbon implications will be measured through the whole lifecycle of the car from birth (production), life (usage) to death (disposal). Other carbon implications will also be measured through general behaviour changes relating to being a car club member.

The project will monitor a car club from pre-launch to full operational status:

- ➔ Using vehicles that offer the best environmental performance and recyclability
- ➔ Making the most utilisation of a car through car club services. Private cars are used 6% of a 24 hour day as opposed to car club cars which are used 40% of the chargeable hours (approx 18 hours a day)
- ➔ The proper disposal of:
Privately owned cars no longer required
Used parts and fluids

The results of the research will be available in mid 2008.

Summary

In conclusion, car clubs reduce carbon emissions in a number of different ways. This can benefit local authorities by contributing to their climate change strategies and can also help employers achieve their corporate social responsibility targets.

For tailored advice on how car clubs can help achieve your carbon reduction objectives, go to www.carplus.org.uk or contact the office on 0113 234 9299.



⁴ Figure is an average emission figure of the top five vehicles used by car club operators