

Name of Report: Car Club Strategy – Technical Appendix

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1.1 Types of Charge Point

There are three main Electric Vehicle charging types:

- Slow (up to 3kW) which is best suited for 6-8 hours overnight;
- Fast (7-22kW) which can fully recharge some models in 3-4 hours; and
- Rapid AC and DC (43-50kW) which are able to provide an 80% charge in around 30 minutes.

1.1.1 Slow Charge Points

Slow Charging points were the first and are currently still the most common method of charging electric vehicles in the UK. The standard unit is a single-phase 13 Amp three-pin plug which typically takes 6 to 8 hours to fully charge the vehicle. Nearly all electric models can be slow charged with home or workplace overnight charging is the most common type of charging usage. The slow chargers constitute the first wave of on-street charger and are gradually being replaced by Fast and Rapid units.

1.1.2 Fast Charging Points

The fast chargers reduce EV charging times by around 50% relative to the slow charge equivalents by more than doubling the current to 32 amps (7kW). This reduces the typical overall charge time to between 3 to 4 hours. This technology is increasingly replacing the initial slow on street slow charging points. The fast charge supply is not compatible with as many types of electric vehicle as the slow charger, and often requires a separate adaptor.

1.1.3 Rapid Charging Points

There are two types of rapid chargers:

- Rapid AC Chargers (up to 43kW); and
- Rapid DC Chargers (up to 50kW)

Rapid AC chargers provide a high power alternating current (AC) supply with power ratings up to 43kW. At this level of power, an electric vehicle can typically be charged to 80% in less than half an hour. Rapid DC chargers are currently the most common rapid chargers and provide a high power direct current (DC) supply with power ratings of up to 50kW, also charging a typical electric vehicle to 80% in half an hour.

1.2 Existing Car Club Electric Vehicle Charging Points in Barnet

In December 2015, LBB in partnership with E-Car launched a two vehicle car sharing scheme that allows residents to hire an electric car by the hour. The cars are based at Barnet House in Whetstone where there are two EVCP reserved exclusively for the E-Car Club users (Figure 1 and Figure 2).



Figure 1 EVCP at Barnet House



Figure 2 Electric Car Club Vehicles at Barnet House

1.3 Other existing Electric Vehicle Charging Points in Barnet

The current publically accessible Electric Vehicle Charging Point (EVCP) locations within LBB have been collated with information from:

- SourceLondon (<https://www.sourcelondon.net/>); and
- ZapMap (<http://www.nextgreencar.com/electric-cars/charging-points/>)

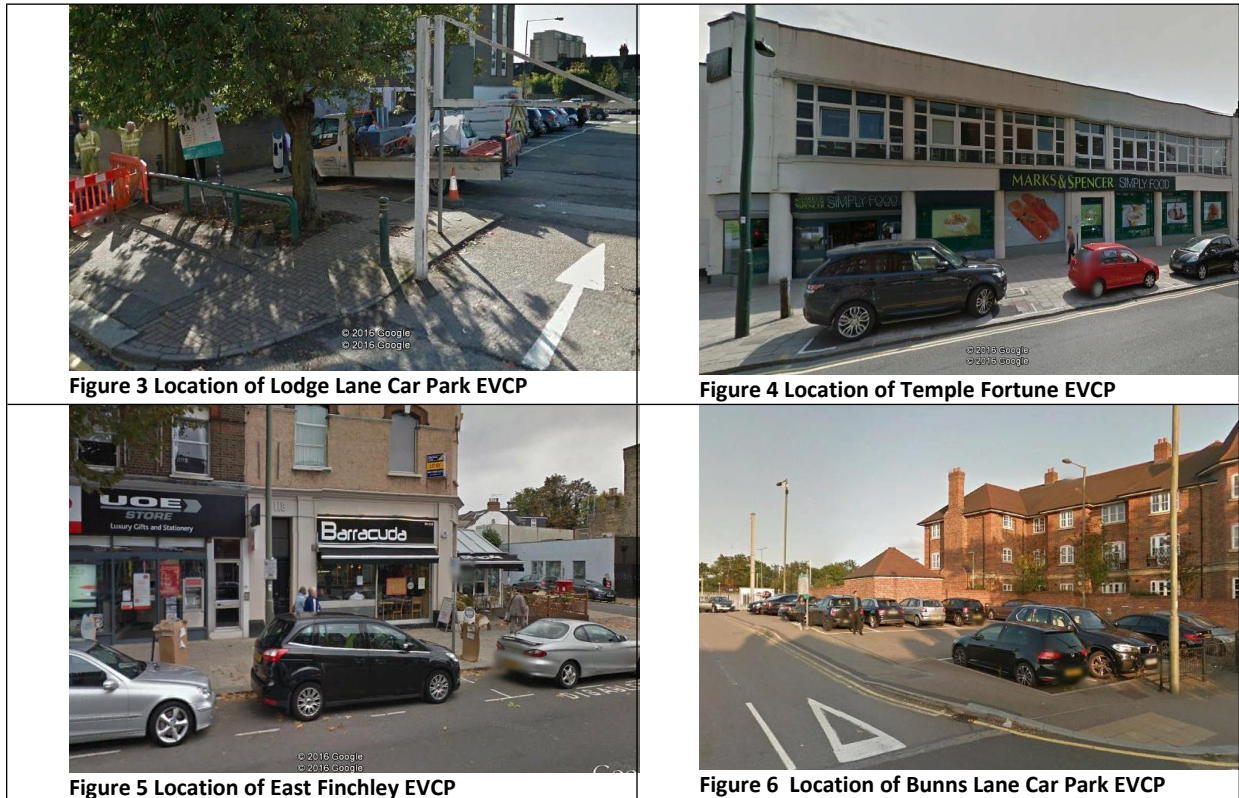
In total there are twenty five publically available charging points outside the car club specific devices, which have between them fifty four charging pins.

This includes the first four council controlled EVCP locations within the Borough which are available to all members of the public.

These were located at:

- Lodge Lane Car Park, North Finchley, N12 (Figure 3)
- Finchley Road, Temple Fortune, NW11 (Figure 4)
- High Road, East Finchley, N2 (Figure 5)
- Bunns Lane Car Park, Mill Hill, NW7 (Figure 6)

Table 1 LBB EVCP locations



The full information is summarised Table 2 and mapped in Figure 7, where the existing LBB EVCP are shown in the brighter green (and the car club in purple).

Table 2 EVCP in Barnet Summary

Location	Postcode	Source	Owner	Devices	Slow (3kw)	Fast (7kw)	Rapid (43kw)	Rapid (50kw)
Barnet House	N20 0EJ	LBB	Barnet Council	2	2	-	-	-
LBB1_Lodge Lane Car Park, North Finchley	N12 8JR	SL/Zap	Barnet Council	1	-	4	-	-
LBB2_Finchley Road, Temple Fortune	NW11 6XL	SL/Zap	Barnet Council	1	-	2	-	-
LBB3_High Road, East Finchley	N2 9ED	SL/ -	Barnet Council	1	-	2	-	-
LBB4_Bunns Lane Car Park, Mill Hill	NW7 2GD	SL/Zap	Barnet Council	1	-	4	-	-
Brent Cross Shopping Centre	NW4 3TB	- /Zap	Private	4	-	6	-	2
Brent South Retail Park, Brent Cross	NW2 1LS	SL/Zap	Private	1	-	4	-	-
Jemca, Edgware Road, Colindale	NW9 6BH	SL/Zap	Private	1	-	2	-	-
Nissan/K Garage, Watford Way	NW7 2QR	- /Zap	Private	3	2	2	-	1
Scratchwood services	NW7 3HU	- /Zap	Private	2	-	-	1	4
Waitrose, Finchley	N12 8NR	- /Zap	Private	1	-	2	-	-
Waitrose, Mill Hill East	NW7 1GU	SL/Zap	Private	1	-	4	-	-
Waitrose, Whetstone	N20 9HX	SL/Zap	Private	1	-	2	-	-
Fire station, Finchley	N3 2RP	- /Zap	Fire Service	1	-	2	-	-
High Barnet Station, NCP	EN5 5YS	SL/Zap	TfL	6	3	5	-	-
Total				27	7	41	1	7

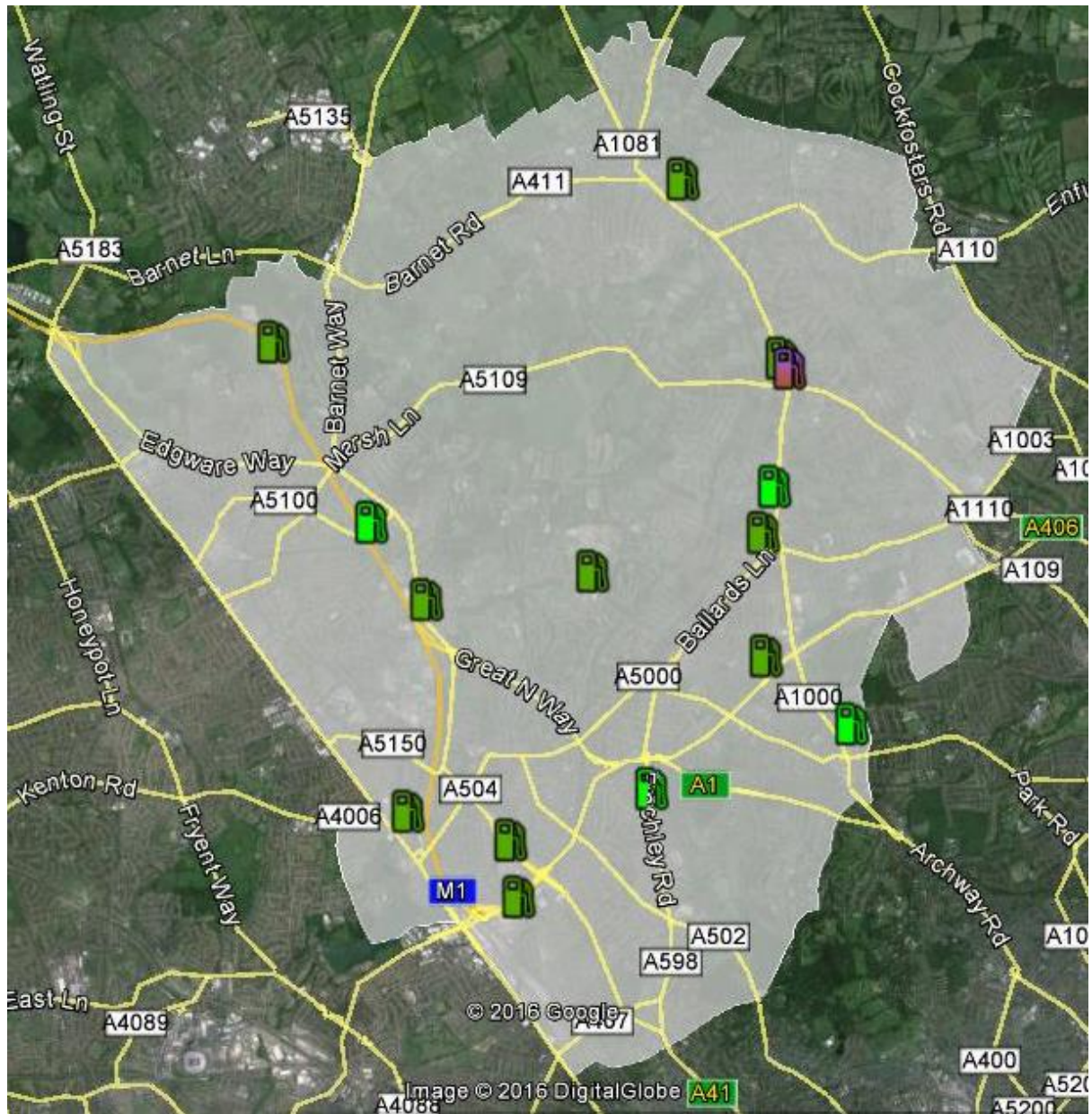


Figure 7 EVCP in Barnet Summary

1.4 Planned Electric Vehicle Charging Point provision within Barnet

The current provision is likely to be supplemented with the addition of four Chargemaster Rapid charger units and an unspecified number from BluePoint London as part of their London wide programme.

1.5 London Borough Barnet Coverage

An example of current provision is shown on the CarPlus website which collates all available car club vehicles (Figure 8).

This image shows available vehicles, including easyCar P2P sharing vehicles which form the majority of available vehicles, within a radius of two miles from the N3 postcode in West Finchley.

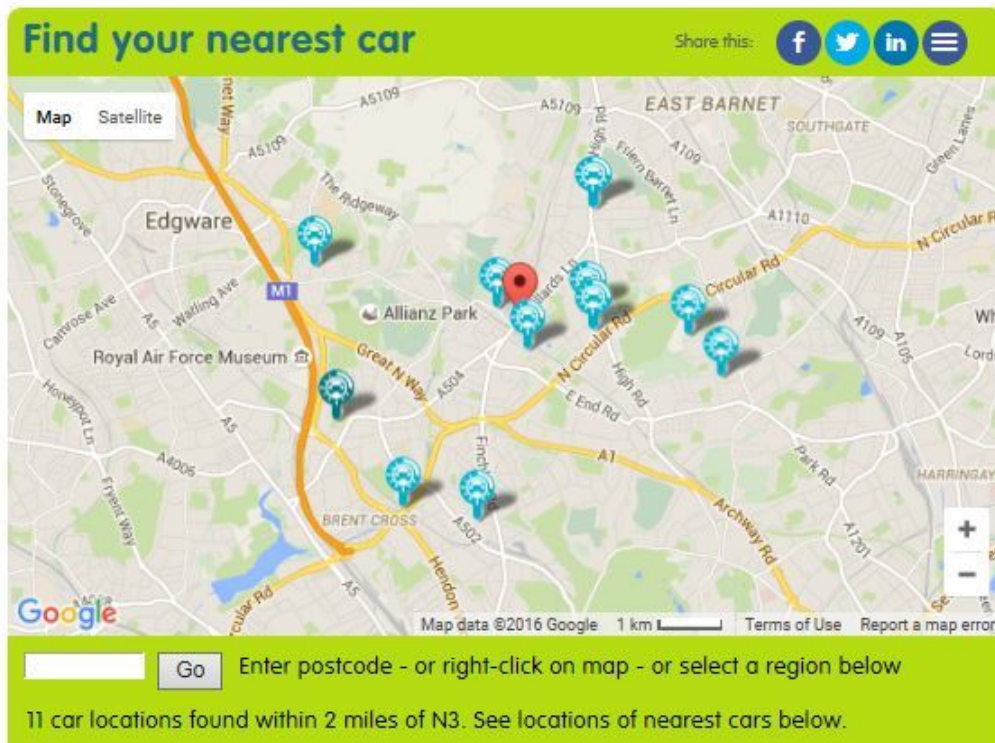


Figure 8 Car Club Vehicles near central Barnet using CarPlus

The thirteen Car Club parking spaces mentioned in the Car Club coalition report which does not include the private P2P provision, are shown in Figure 9.

This consists of 11 ZipCar locations and the two LBB/E-Car Club electric vehicles at Barnet House.

The majority of the existing provision is within London Underground catchment areas.

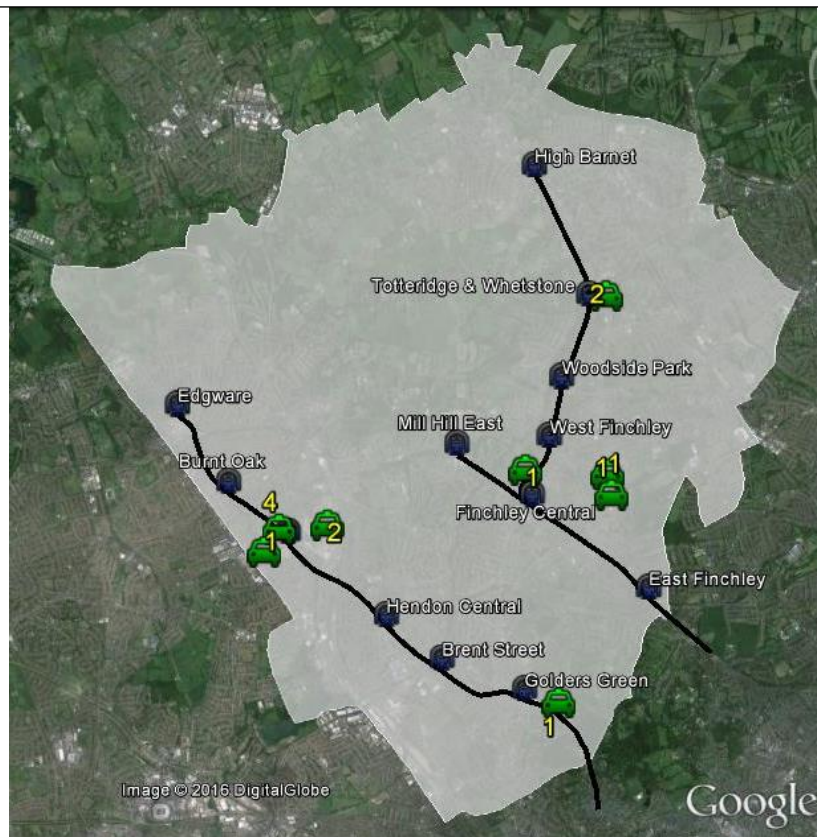


Figure 9 Car Club Bays operated by E-Car Club/ZipCar

2 Document Control

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3 Car Club Case Study

3.1 Croydon

CASE STUDY: ZIPCAR



Croydon Council

Working with Zipcar to reduce and replace the grey fleet with car club cars, Croydon Council saved over £500,000 and reduced CO₂ emissions by 138 tonnes per year.

In March 2010 Croydon Council reviewed its car use policy. Council staff using their own cars were running a large (and expensive) 'grey fleet' of vehicles with very varied emissions and environmental impact. These cars were also occupying space and management time with staff issues over parking spaces.

- 30% of staff were essential car users (1284)
- Total driving 1.1 million miles
- Costing £1.3 million
- Emitting 343 tonnes CO₂
- Increasing parking issues with competition for space in overflowing car parks

The Council aimed to reduce its essential user scheme, reduce costs and improve its environmental impact. This was a two year process which involved:

- Reviewing and reducing essential car users
- A partnership with Zipcar to manage car club cars as pool cars

By February 2012 the Council had achieved:

- 52% reduction in essential users to 611
- 48% reduction in business miles to 642,000
- 64% reduction in the cost of car travel to £472,000
- A reduction in CO₂ emissions per year to 207 tonnes

car use through Zipcar meant that staff were no longer involved in fleet management issues and there were fewer line management issues to negotiate around car use.

The scheme continues to be extended in the following ways:

- Zipcars are now available to residents and staff at evenings and weekends, providing an amenity and also increasing their efficiency
- Staff have access to online reservation systems
- A wider range of vehicles, including vans, have been introduced

The scheme now provides exclusive use of 23 vehicles to council employees from 8am to 6pm, Monday to Friday. Outside these hours, these vehicles are available to the 1,300 (and growing) Zipcar members in the Borough of Croydon, at peak times such as evenings and weekends.

There are various models available under the scheme, including a seven seat Volkswagen Touran, a Volkswagen Transporter van, and a Vauxhall Ampera electric vehicle (EV). These 23 vehicles are available in addition to the existing Zipcar vehicles in the borough - available to Zipcar members all day, every day.

Figure 10 Case Study - ZipCar/Croydon

3.2 Woking

CASE STUDY: ENTERPRISE CARSHARE



Car club pool cars

“Enterprise CarShare has helped us change how employees think of business trips. Without the perceived perk of mileage reimbursement and how it can encourage them to drive more than they need to, our employees take a more considered approach to their travel planning. In fact, many now see the programme as an additional staff benefit...We’ve been able to drastically cut down the grey carbon footprint, and get employees thinking about when, why and how they travel. We’re driving a real cultural change.” David Johnson, Corporate Strategy Manager at Woking Borough Council

Enterprise CarShare is a bespoke car sharing platform that facilitates the creation of an intelligent, virtual fleet.

Enterprise currently operates more than 133 vehicles to 23 pool car programmes in the UK across Local Government, NHS Trusts and Universities. Set up in 2007, Enterprise CarShare is the pool car product of Enterprise Rent-A-Car.

It was created to bring both economic and environmental benefits public sector in a time of austerity.

Here's why it works:

- Cleaning and maintenance of vehicles, administered local branch employees
- Self-sufficient rental process – keyless access to the reservation system
- No commitment to one vehicle—driver can select CarShare vehicle for every new rental
- Fuel card can be stored in the vehicle
- Ability to view vehicle availability - plan and book meetings appropriately

- Booking efficiency - varying from a 30 minute rental to an overnight hire
- Membership Scheme – providing heightened security and control
- Significant cost savings - enabling clearer budget control
- Comprehensive management information supplied

The operational benefits of CarShare are clear. Furthermore, Enterprise is focussed on delivering the quantifiable evidence that makes the benefits clear and transparent.

Enterprise is delighted to confirm that in existing programmes throughout the UK, CarShare has produced savings of 20% and has reduced CO₂ emissions by 30%.

Figure 11 Case Study - Enterprise Carshare/Woking

3.3 Housing association

CASE STUDY: E-CAR CLUB



Electric car growth

E-Car Club is the UK's first entirely electric car club operator. Its cars are used in a variety of ways in residential, business and partnership schemes.

The Housing Association

Poplar Housing and Regeneration Community Association (HARCA) is a Social Landlord with 5000 properties in the south-east of Tower Hamlets.

"Poplar HARCA's partnership with E-Car and resulting electric vehicle car club has been a real success, providing a variety of benefits to our business. Access by staff to our conveniently located vehicles offers increased flexibility to business journeys that many need to take regularly. Consequently we have more face to face contact between colleagues in our hub offices and a clean, 'hi tech' and novel transport method for receiving guests and showcasing the area.

Interest from local residents has been hugely encouraging with over 80 resident car club members already and plans to explore affordability still further. With other local partners we now aim to expand the car club infrastructure significantly, maximising both its practical potential and also the powerful symbolic and educational message it conveys in tandem with our wider Green Programme."

Nick Martin, Poplar HARCA

The Resident

"I have always found it easy to use an E-Car. Simple. Just plug it in when you are finished. I mainly do the big shop and take it into the city. There's no congestion charge for E-Cars, of course. What I really like is that it's always available. And it's cheap. It saves me something like a £1000 a year not having to pay for the insurance, petrol

and so on. This is one of the great plus points for the community, too. It's economical and it's green."

Sonni Clugston, London

Business user

"I work in the rail industry which produces a rather sizeable carbon footprint. We are all keen to reduce this and to be seen doing it. The E-Cars are ideal for the sorts of frequent, short to medium range journeys we often do in and around our HQ in Milton Keynes. I use the E-Cars routinely for meetings. On an average trip I'm likely to do 40-50 miles and sometimes take others with me. So, it's the reduced environmental impact that springs to mind when I think of the benefits of E-Car use. And it's no hardship. These cars are surprisingly smooth and comfortable."

William Spencer, Milton Keynes

The University

The University of Hertfordshire E-Car Club launched with 3 cars available to hire by the hour across 2 campuses.

"The scheme has offered multiple benefits to the University: reducing the cost and environmental impact of each journey undertaken by staff for meetings, removing the need for students to bring a car to University and improve the travel choices for staff, students and the local community."

Dr Scott Copsey, University of Hertfordshire

Figure 12 Case Study - E-Car Club/Housing Association