

**Electric vehicles market
development**

09201

May 2010

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Research conducted by 2CV

Contents



Introduction and background

Headlines from the research

Consumer market:

- Interest in electric cars
- Drivers of interest in electric cars
- Electric car current and potential usage
- Barriers to uptake of electric cars
- The purchase decision cycle
- How does the market feel about the proposed infrastructure changes?

Electric scooter market:

- Overview of market
- Response to TfL infrastructure

SME market:

- Profiling the SME EV market
- Response to the scheme
- Next steps for SMEs

Overall research objectives

Consumer Objectives:

- *To understand the consumer landscape for EVs, profile the target audience, including attitudes, barriers, tipping points and the purchase decision cycle*

Business Objectives:

- *To understand motivations and barriers to installation of EV charge points and opportunities for TfL to provide appropriate and engaging incentives/ support for businesses in London*

Methodology and sample summary

- An iterative, integrated approach to deliver to the research objectives was carried out
- Qualitative and quantitative fieldwork took place between 24th March to 11th May 2010

Qualitative research amongst consumers:

2 x Mini-groups (1 x current owners; 1 x open considerers)

Development of quantitative survey tool

Quantitative research:
Online survey amongst c.500 EV owners / considerers

Iterative analysis process integrating qualitative, and quantitative findings

WORKSHOP DEBRIEF

Quantitative Sizing study: 1000 London drivers

In depth interviews:

4 x electric scooter owners, 4 x electric scooter considerers
2 x owners of EV businesses (EV Revolution, EV Stores)

Qualitative research amongst SMEs

In-depth interviews:

6 x SME owners with EVs in fleet; 4 x SME owners with fleet vehicles but no EVs, 4 x SME owners with no fleet, 3 x business landlords



Headlines from the research



Headlines from the research

- There is very high interest in Electric Cars in London amongst consumers and businesses
 - Interest is even higher than eight months ago, suggesting that demand is increasing
 - Interest is driven by cost savings, convenience and interest in cars and new technology
 - Whilst environmental benefits are appealing, they are a bonus rather than key driver to purchase

- However, the market is still in early days of development and likely to be influenced by many factors:
 - Launch and availability of electric vehicles
 - Incentives / cost savings
 - Borough legislation (parking) and government incentives

Headlines from the research

- The consumer Current and Potential market differ in their profile and needs:

Current Owners

- Current owners are affluent, car dependant drivers who use their electric vehicle in addition to another car to make driving in central London cheaper and easier.
- They enjoy the benefits of being early adopters and worry about their benefits being eroded as others come to the market.
- They want increased benefits (such as unified Borough parking policy or the ability to drive in bus lanes).
- Charging infrastructure is less important for Current owners who already have systems in place for charging.

Potential Owners

- Potential owners are motivated by the cost savings of electric cars, but worry about battery life / range and infrastructure.
- The charging scheme is therefore reassuring and motivating for the Potential owner market.

Headlines from the research

- Whilst businesses are largely positive about EVs in London and there are few inherent barriers to installing charging points there are also no motivations for many businesses currently, the proposed business fund does not necessarily generate motivations
- Installation of charging points is a small logistic of the purchase decision cycle which poses challenges for TfL:
 - For Owners of EVs current charging infrastructure is satisfactory and they do not see the benefit in increasing charging points
 - For Potential Owners they are not considering the cost of installing charge points and have many more pertinent questions about purchasing EVs
 - For Landlords / Employers there is a perceived lack of demand currently
- TfL will need to generate motivation to install through both top-down and bottom-up approaches:
 - Top-Down: PR / market momentum / encouraging landlords / employers to be proactive
 - Bottom-Up: generate demand from employees through existing owners



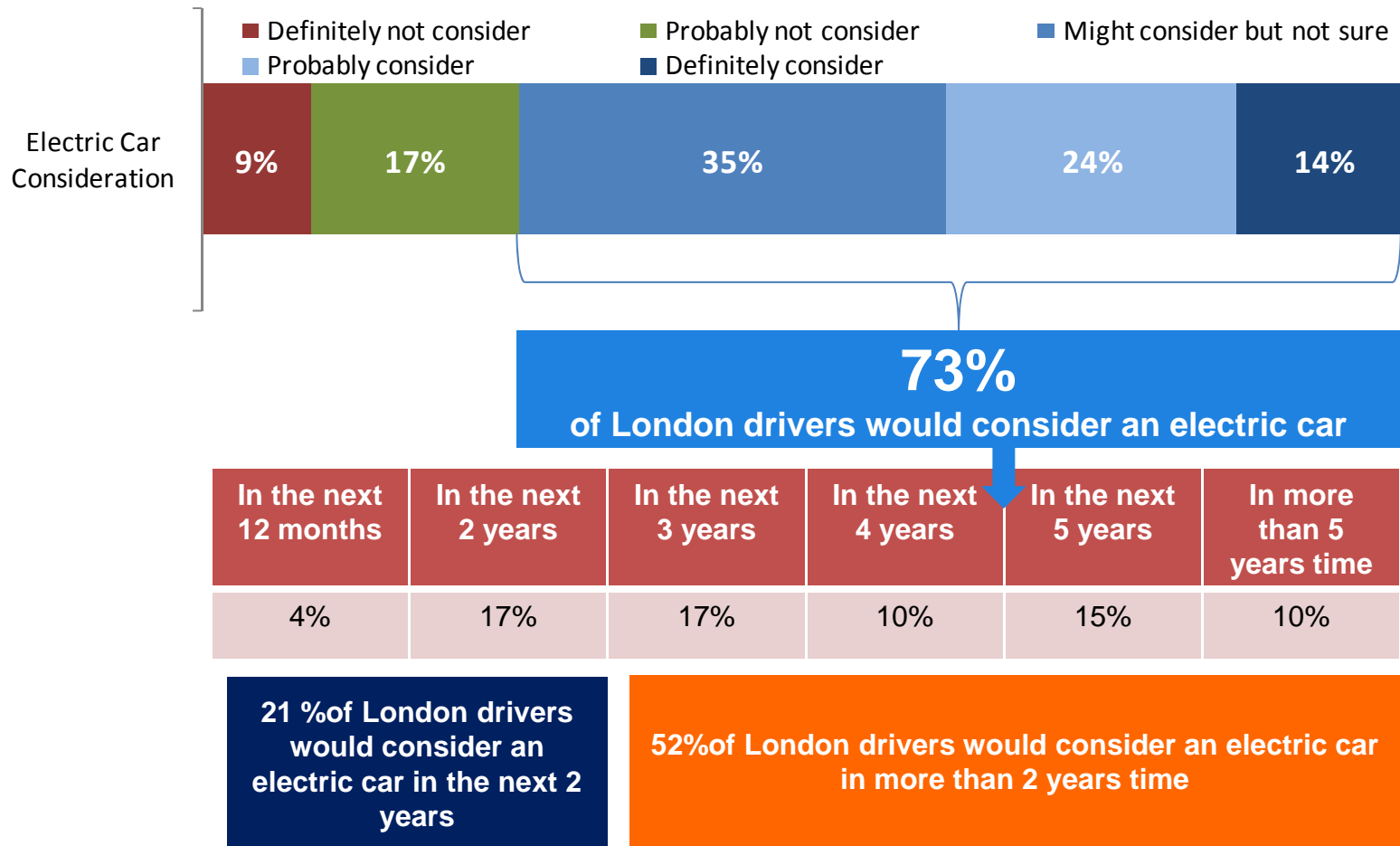
Interest in electric cars

1. Overall interest in electric cars is high
2. Greater interest is evident high car dependent groups, Inner Londoners, and high income earners



The Future is
ELECTRIC

Interest in electric cars among London drivers is high, with three quarters interested in buying one in future



Omnibus Q9: Taking into account your knowledge of electric cars, how likely do you feel you would be to consider purchasing an electric car in future?

Omnibus Q10: And when do you think you would consider buying an electric car?

Base: Non-EV owners: 961

The electric car market continuum

Greater interest is driven by high car dependency, Inner Londoners and higher income groups

Current

Near

Far



High car dependency
Frequent driving in CCZ
High mileage
Passionate about cars

Multiple car buyers
New car buyers
EV as an additional car in HH

Inner London, Islington & Camden
Higher income (A's)
Older, White (83%)

Early adopters of technology
Willing to pay a premium
Fairly environmentally conscious

Average car dependency
Average driving in CCZ
Lower mileage
Passionate about cars

Half single car buyers
Half new car buyers
EV as a replacement car in HH

Outer London, Brent
Higher than average income
Asian (20%) Indian

Early adopters of technology
Trendsetters into fashion and cool brands
Very environmentally conscious or claimed green creds

Lower car dependency
Infrequent driving in CCZ
Lower mileage
Not passionate about cars

Single car owners
Second-hand car buyers
EV replacement for only car in HH

Outer London
Lower income
Younger, White (77%)

Late adopters of technology
Wait for the price to come down
Not especially environmentally conscious

The current and near market are united by a passion for cars

Current

Near



I love my electric car, I get in, turn the turbo switch on and pretend it's a Porsche

My car gets photographed more than I do, the attention is brilliant!

It's the next generation in cars, I've been into cars since I was a little girl, my dad was a rally car driver

I went to the Frankfurt motor show, they look incredible

It takes away all the stressful things about driving in London, it may not look the best but it is a pleasure to drive!

We have three, one for me, one for my wife and one always plugged in just in case

The batteries in the next generation one will be able to do longer distances.

No parking fines, no congestion charge, no stress, it's not just about money, it's about not having to bother with fiddling with change

It's the fact that the power is just there with a battery – no delay, put your foot down and off you go!

I might get a hybrid, or an electric car, it's about what is available on the market when I actually buy

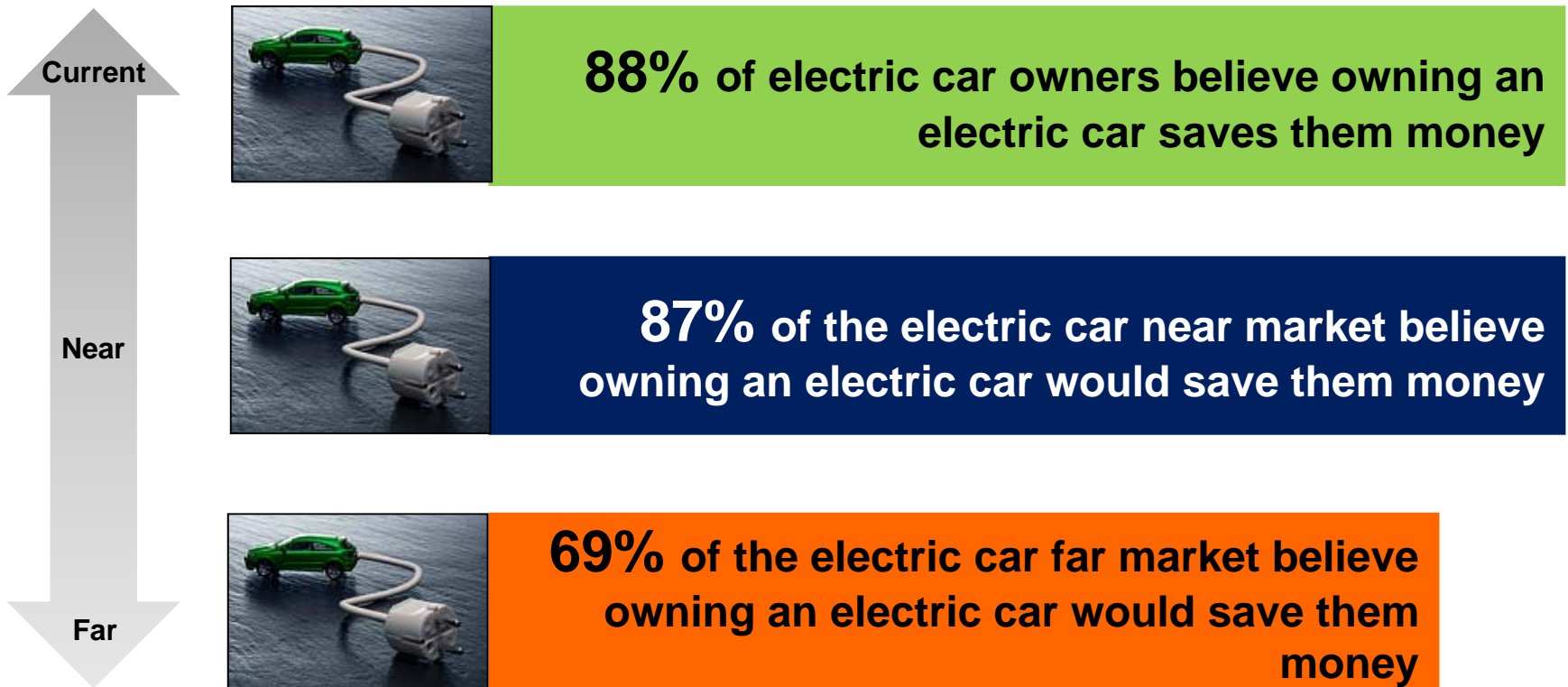


Drivers of interest in electric cars

- 1. Saving money is the overarching driver of interest in electric cars for owners & potentials**
- 2. Electric cars also provide convenience over public transport which is particularly motivating to owners**
- 3. Environmental benefits are seen as a bonus but not a sole driver**

Both owners and potentials are motivated by saving money through an electric car

- Very high levels of confidence that electric cars will reduce costs



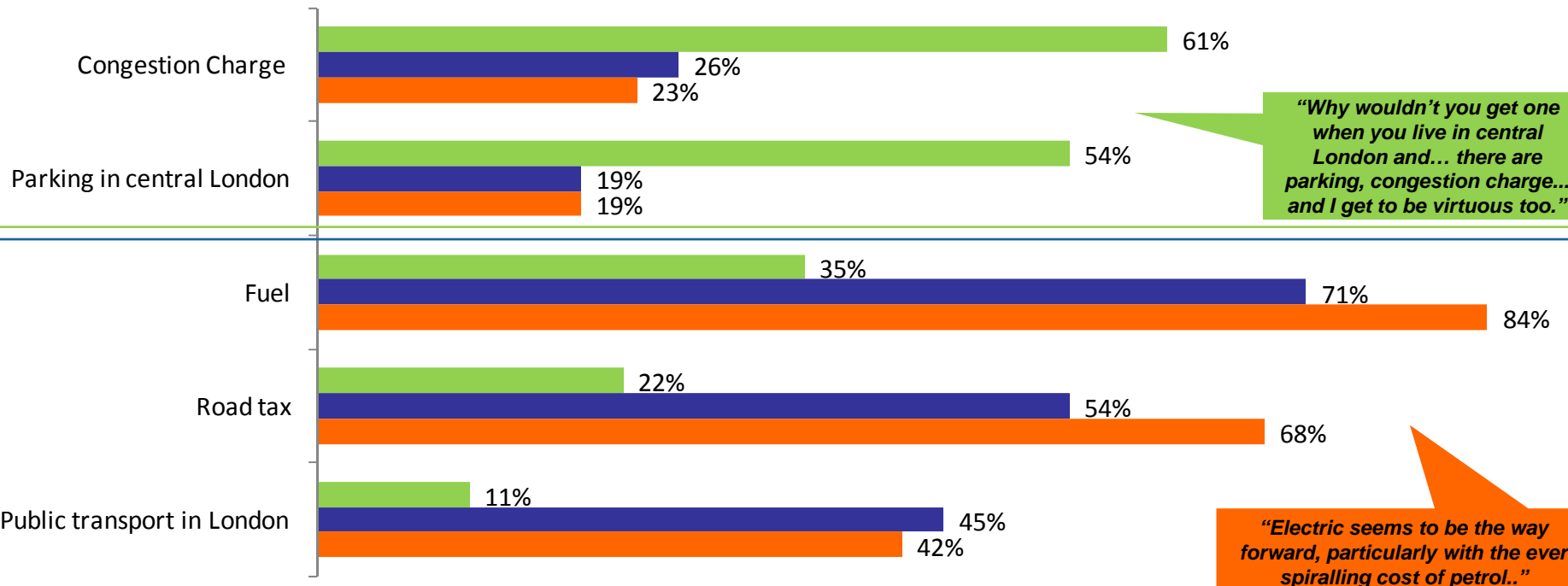
Current owners' purchase decision was driven by savings on the Congestion Charge and parking

Whereas Potentials seek reduced fuel, road tax & public transport costs

Electric car owners are less likely to have been using public transport prior to purchase

Electric car Primary Purchase Drivers (%)

■ E-Car owners ■ Potentials (near) ■ Potentials (far)



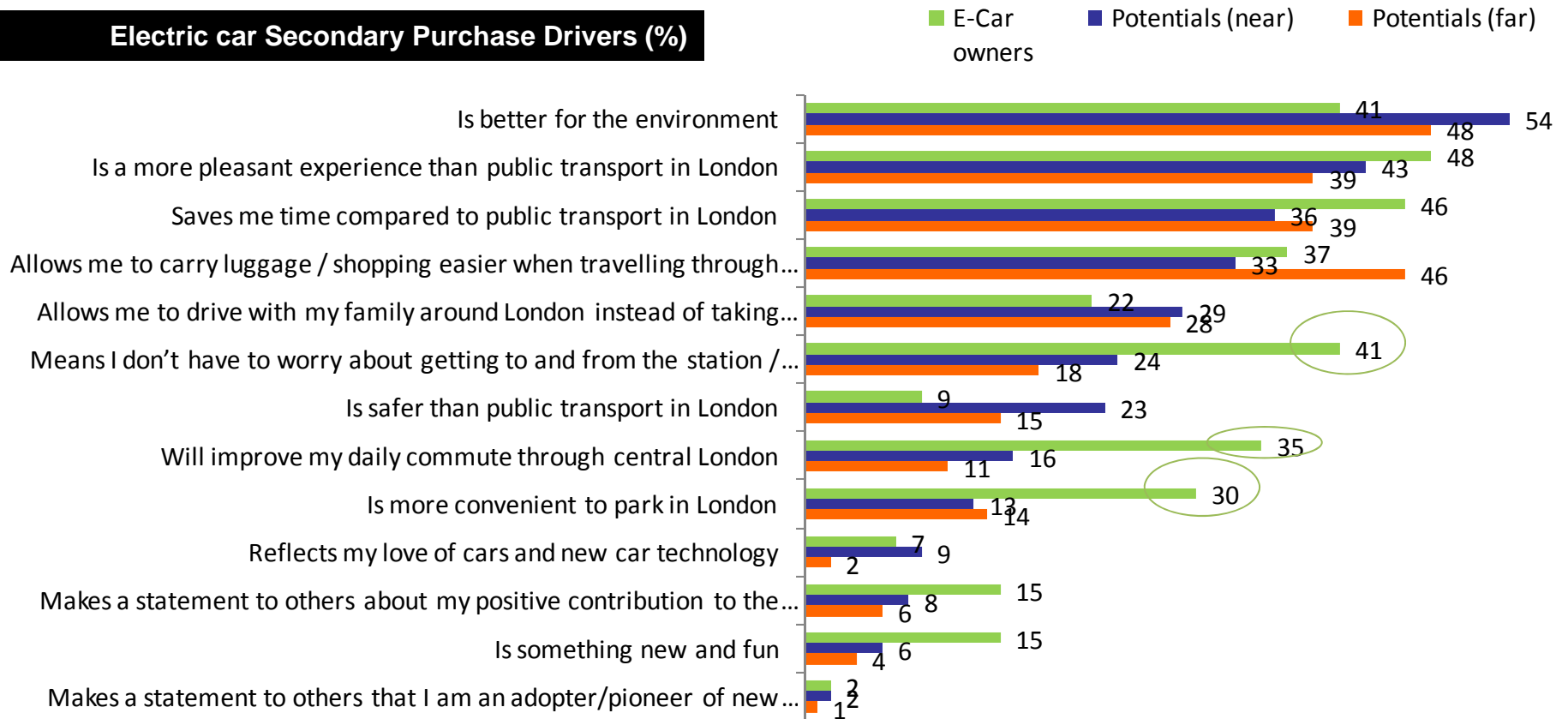
QC1 : Thinking about why you purchased your / are considering purchasing an electric vehicle instead of a petrol / diesel / LPG or hybrid vehicle / of using public transport, please indicate which of the following reasons influenced your decision.?

Base: Electric car owners (46) Electric car potentials (near) (106) Electric car potentials (far) (154)

After the financial incentives, convenience and the environment are secondary drivers to purchase

- Commuting triggers are more relevant to electric car owners – evidence that the car facilitates their avoidance of public transport

Electric car Secondary Purchase Drivers (%)

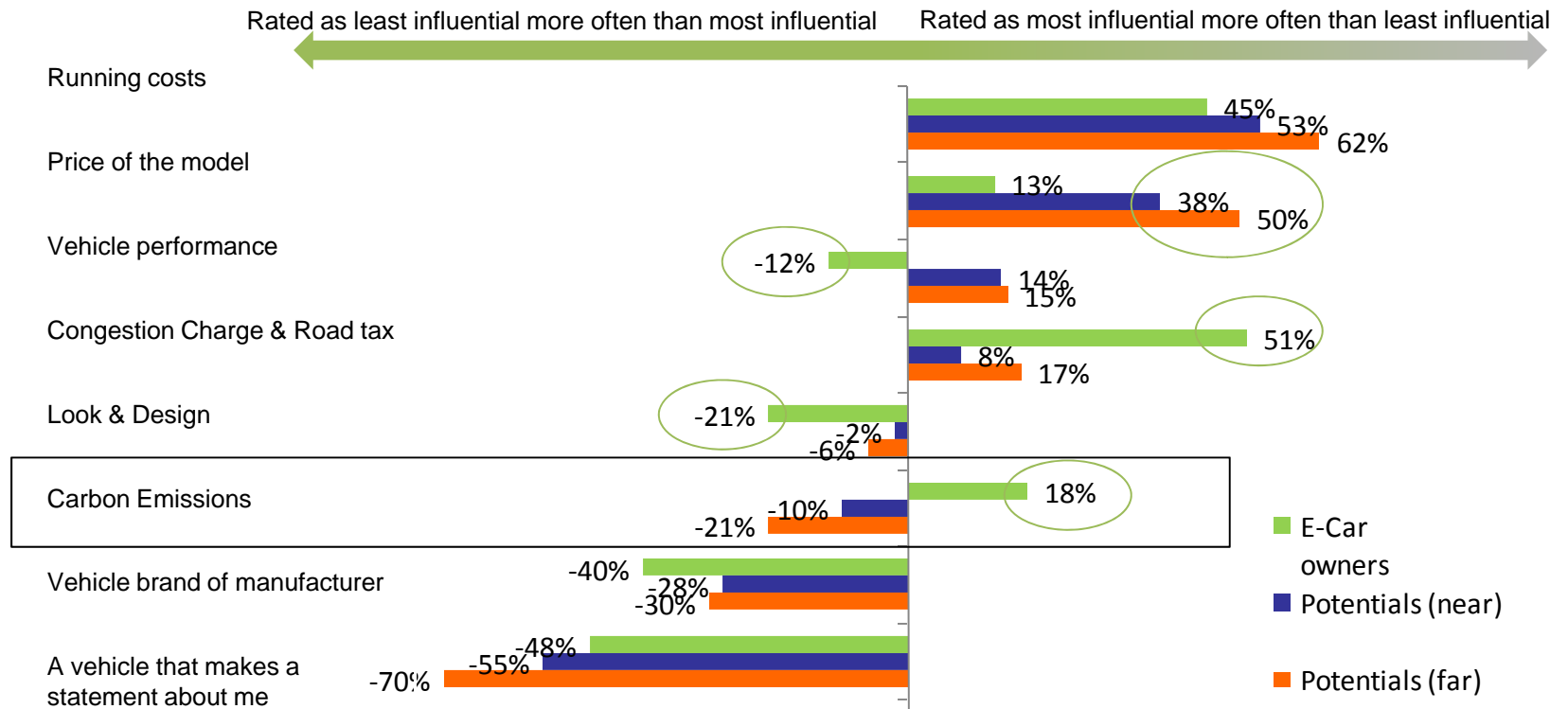


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Base: Electric car owners (46) Electric car potentials (near) (106) Electric car potentials (far) (154)

When forced to trade off the benefits of an electric car, environmental concerns fall behind price, running costs and performance for the potential market

Electric car Purchase Drivers – Share of most influential



Scores calculated = Proportion of times allocated attribute most influential – proportion of times allocated least influential

QB10/11 : Thinking about when you purchased your electric vehicle / purchasing an electric vehicle in future, which of the following is most and least influential in your decision.

Base: Electric car owners (46) Electric car potentials (near) (106) Electric car potentials (far) (154)

For current owners, benefits are grounded in the day to day convenience of electric cars

- The main benefit of electric vehicles for owners is a low-stress car dependent lifestyle day to day:
 - The majority of current owners have a lot of disposable income and as such cost benefits are not just about rational cost saving
 - Owning an electric vehicle takes away many of the stresses of driving in London: e.g. parking meters and fines, congestion charge, quiet vehicle, being able to 'nip in and out'
- Furthermore, cost savings are often offset by hidden costs associated with electric vehicles. Current owners often incur many additional costs (rational and emotional) of owning an electric car:
 - Battery issues and replacements
 - Managing Borough interactions – inconsistencies in parking / getting curbs dropped for charging
 - Stress of dealing with repairs / manufacturers / issues

***Cost benefits often complicated by hidden inconveniences after purchase
but convenience is highly satisfactory***



Electric car current and potential usage



1. Current owners' electric cars are additional cars in household whilst potentials wish for them to become the sole household vehicle
2. High levels of confidence that electric car ownership reduces conventional car usage
3. Usage is broad across journey types but restricted to short distances

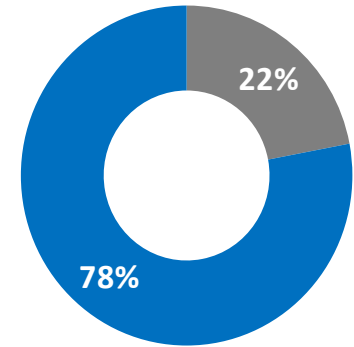
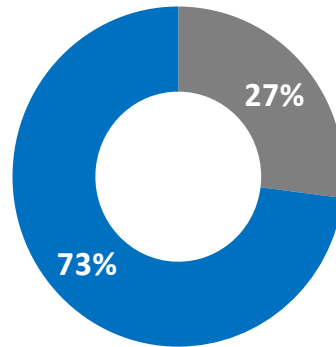
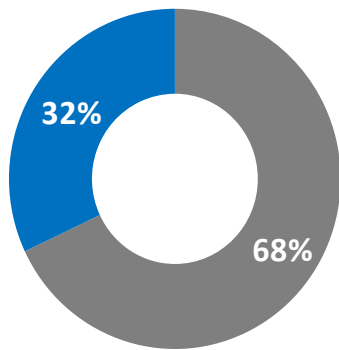
Current owners use their EV as an addition to a conventional car whereas potentials are looking for a primary vehicle replacement

91% of electric car owners are multiple car owners

47% of the potential near market are multiple car owners

33% of the potential far market are multiple car owners

Looking for an electric car..



■ In addition to another vehicle

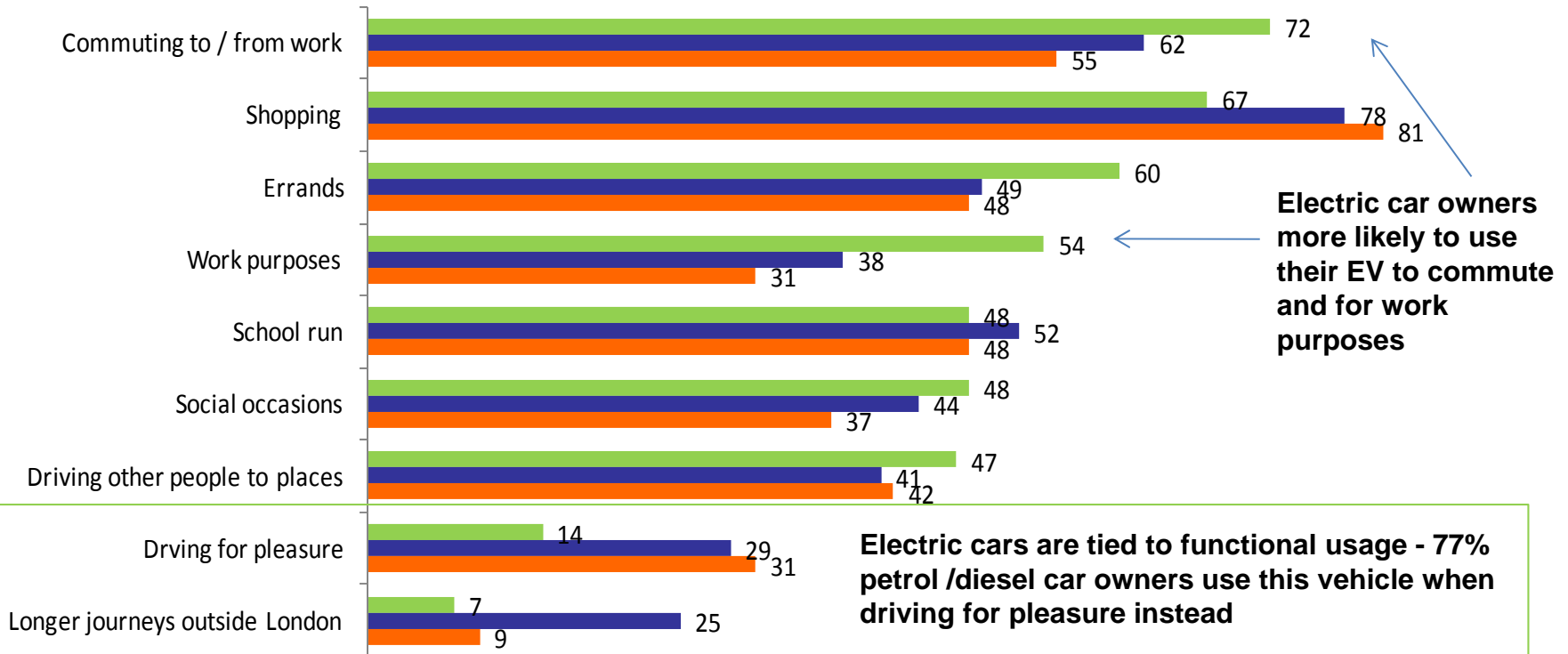
■ A direct replacement

Electric vehicles have versatile usage but journeys are typically restricted to functional trips within London

- Low confidence in usage of electric cars outside of London or for pleasure

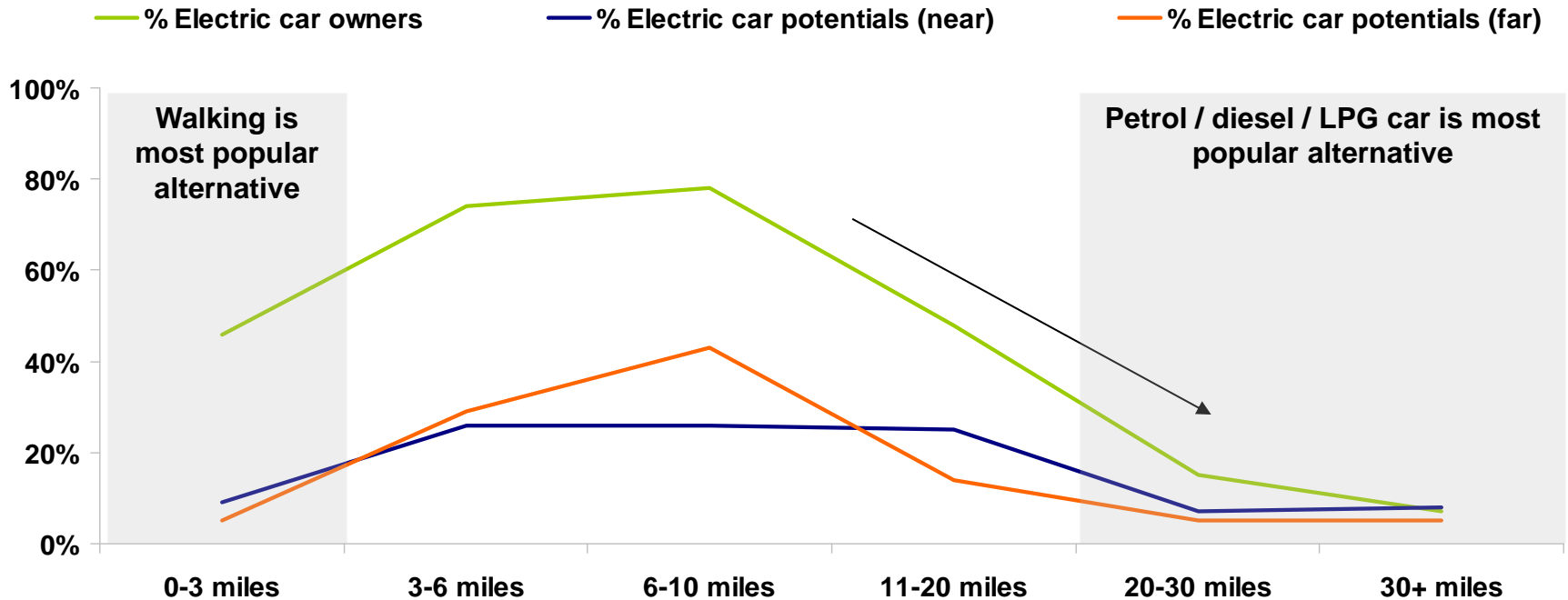
Typical journeys made / expected to make with electric car (%)

■ E-Car owners
 ■ Potentials (near)
 ■ Potentials (far)



Owners and potentials show hesitancy to use electric cars for journeys longer than 10 miles

Electric car usage at each distance (%)



A red toy car is on the left and a black electrical plug is on the right, both on a white background. A black horizontal bar is positioned between the image and the text.

Barriers to uptake of electric cars

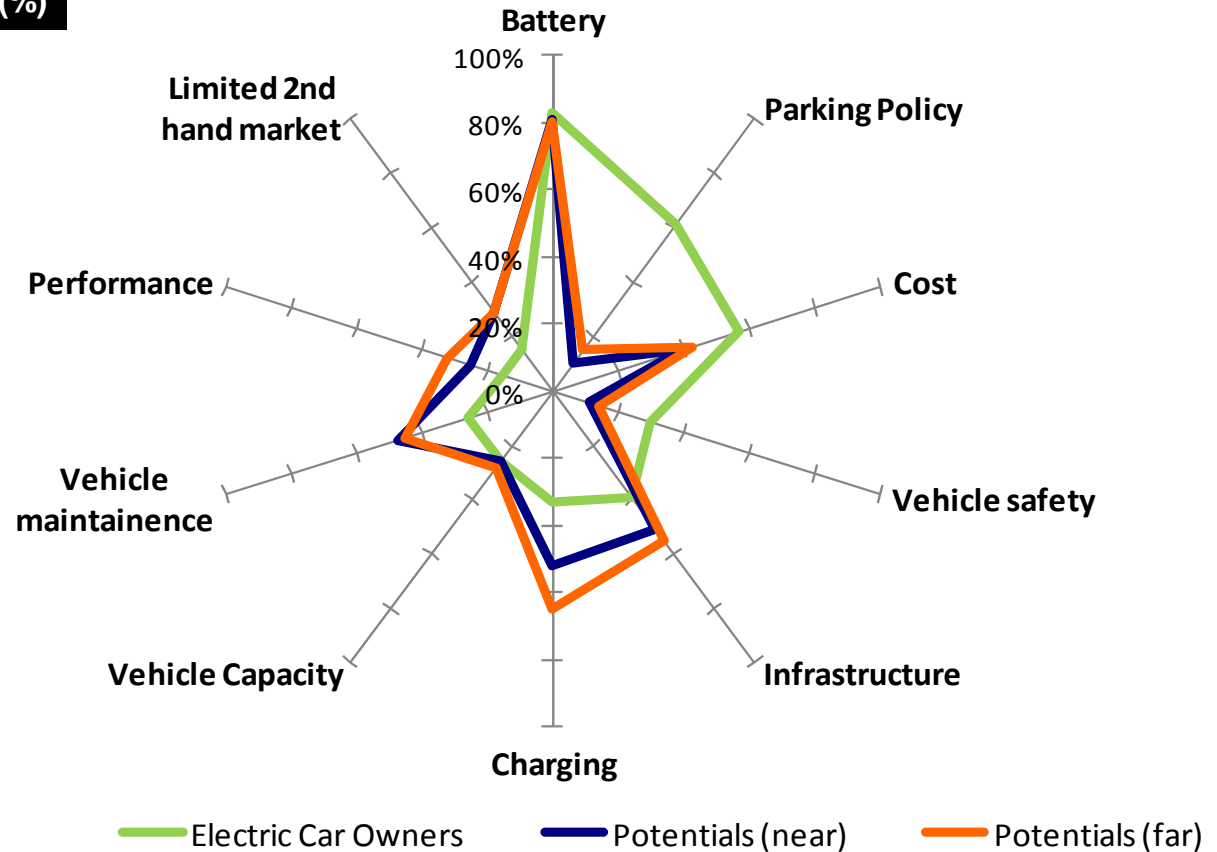
- 1. Battery issues are the biggest barriers which concern both owners and potentials alike**
- 2. For the potential market, infrastructure concerns also hold a lot of weight – there's room for the scheme to have a big impact**
- 3. The different EV parking policies across London is a huge issue for owners, more of a priority to them than infrastructure expansion**

Battery concerns are common to all yet potentials have more concerns around charging, infrastructure and vehicle performance

Issues and concerns categories (%)

The average number of issues owners have with EVs is less than the expected number of concerns of potentials

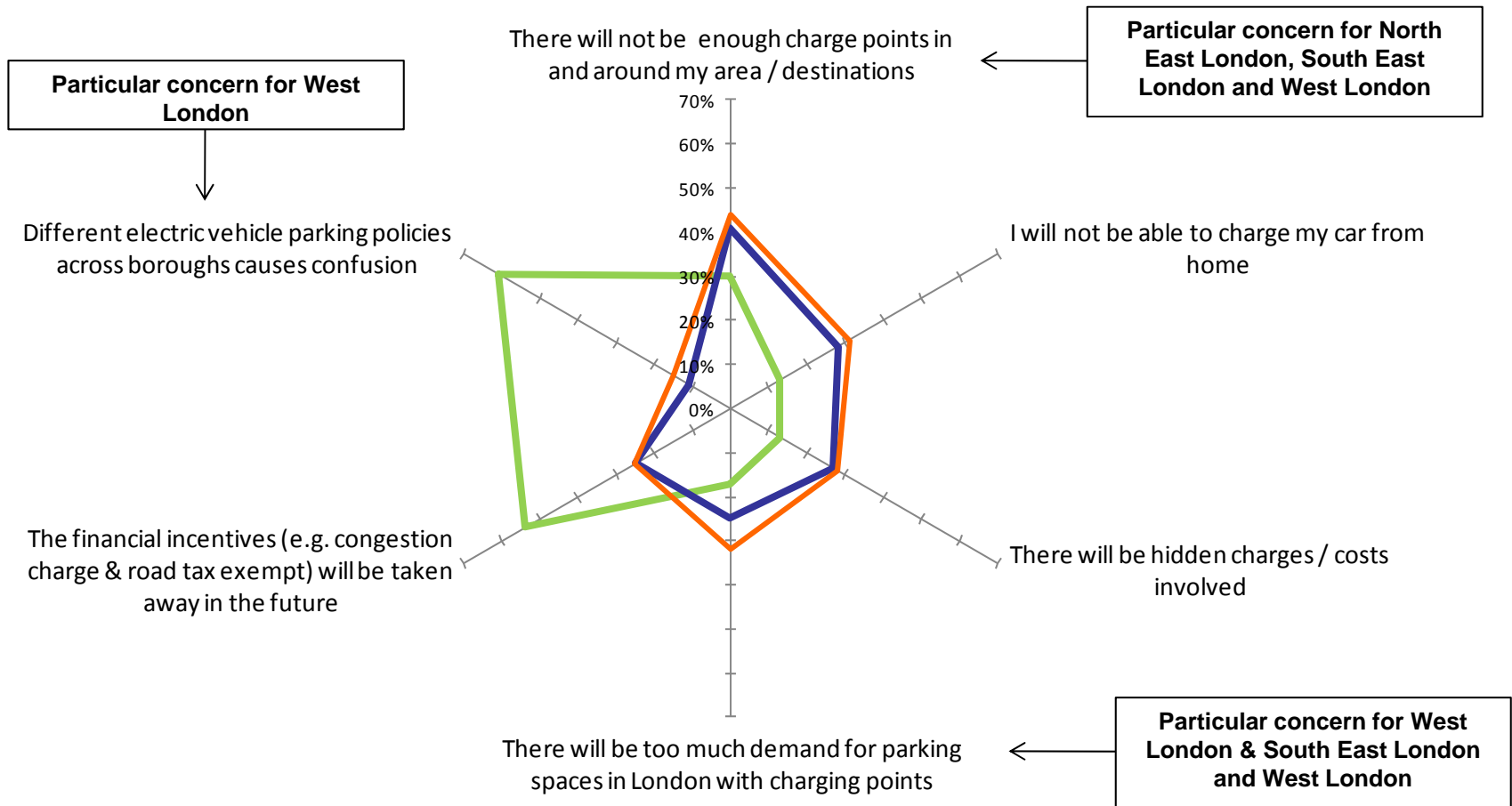
Mean number of issues / concerns		
Owners	Near	Far
5.8	7.0	7.0



Drilling down to the issues and concerns pertinent to TfL, Potentials require reassurance on the infrastructure support whilst Owners focus on policy issues

Issues / concerns relevant to TfL (%)

E-Car owners Potentials (near) Potentials (far)

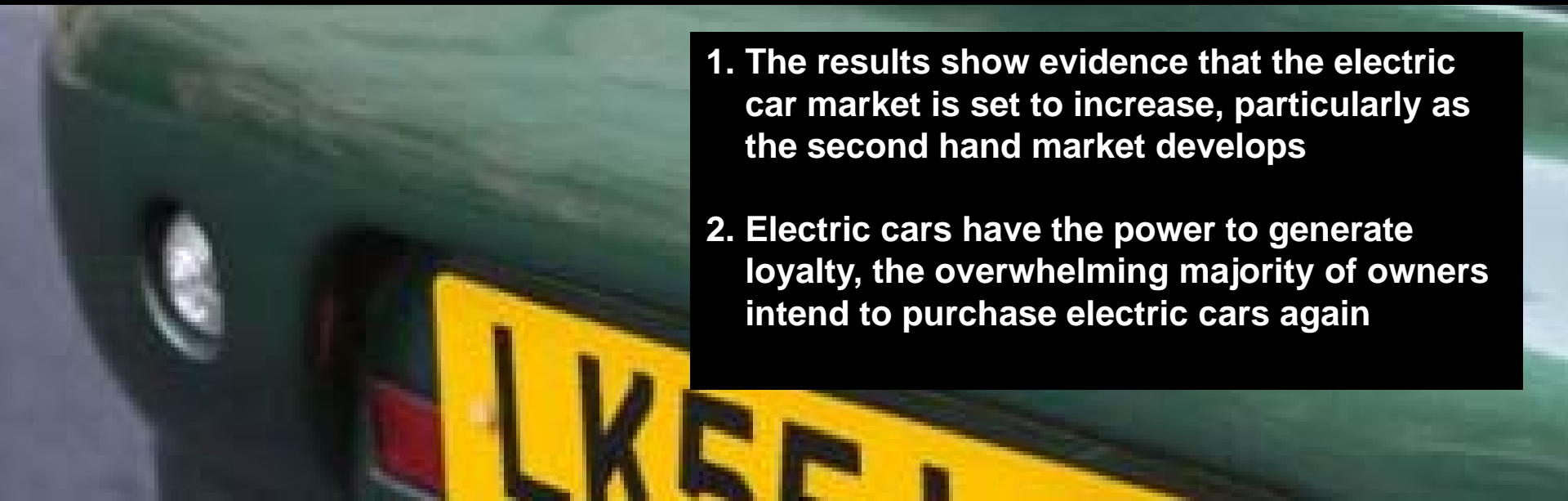


QC3: Which of the following issues do you experience with your electric vehicle/concerns you when thinking about purchasing an electric vehicle?
 Base: Electric car owners (46*), Electric car potentials near market (106) electric car potentials far market (154)
 *LOW BASE



Purchasing electric cars

- 1. The results show evidence that the electric car market is set to increase, particularly as the second hand market develops**
- 2. Electric cars have the power to generate loyalty, the overwhelming majority of owners intend to purchase electric cars again**



The majority of electric car owners show commitment to buying electric cars again in future



80% of electric car owners intend to replace their EV with another electric car

"It is just common sense, I drive into London every day, it is worth it."

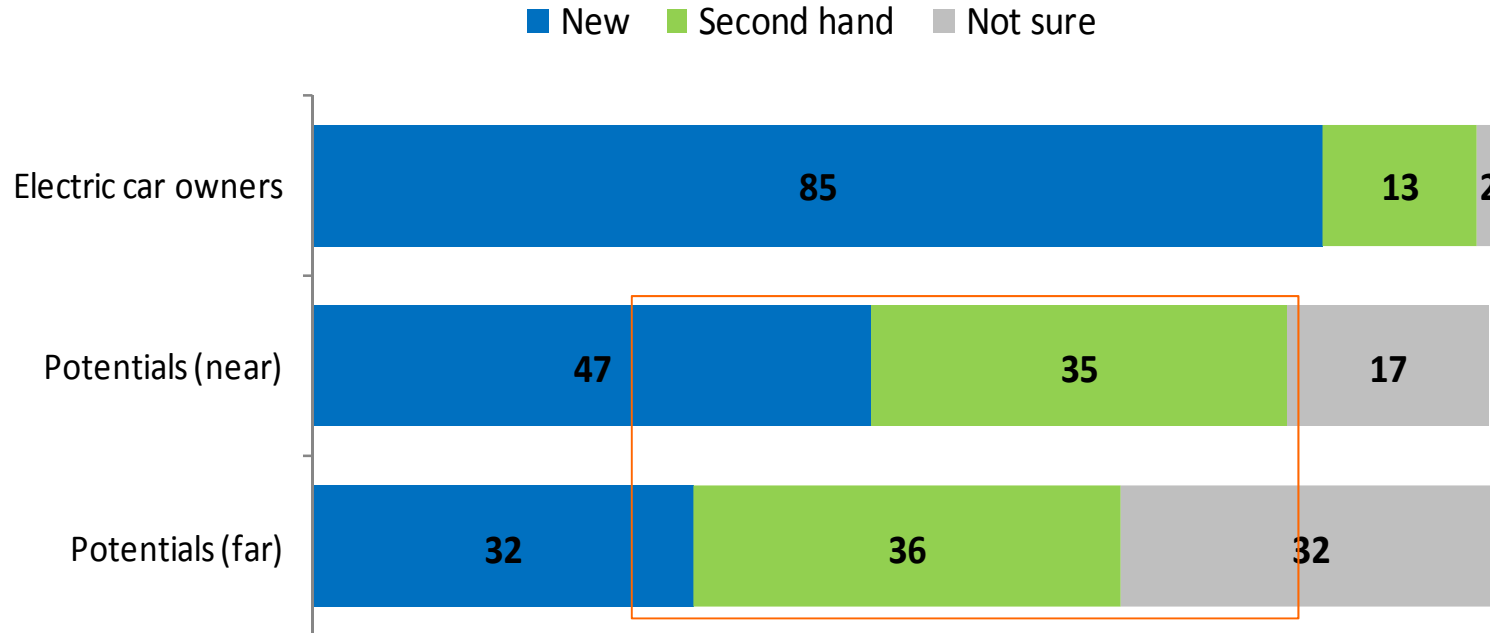
"I am not sure I will, now my daughter is not needing a lift to school. I may just go back to getting the bus"

"I love it, my life is so easy, I'd buy another in a heartbeat."

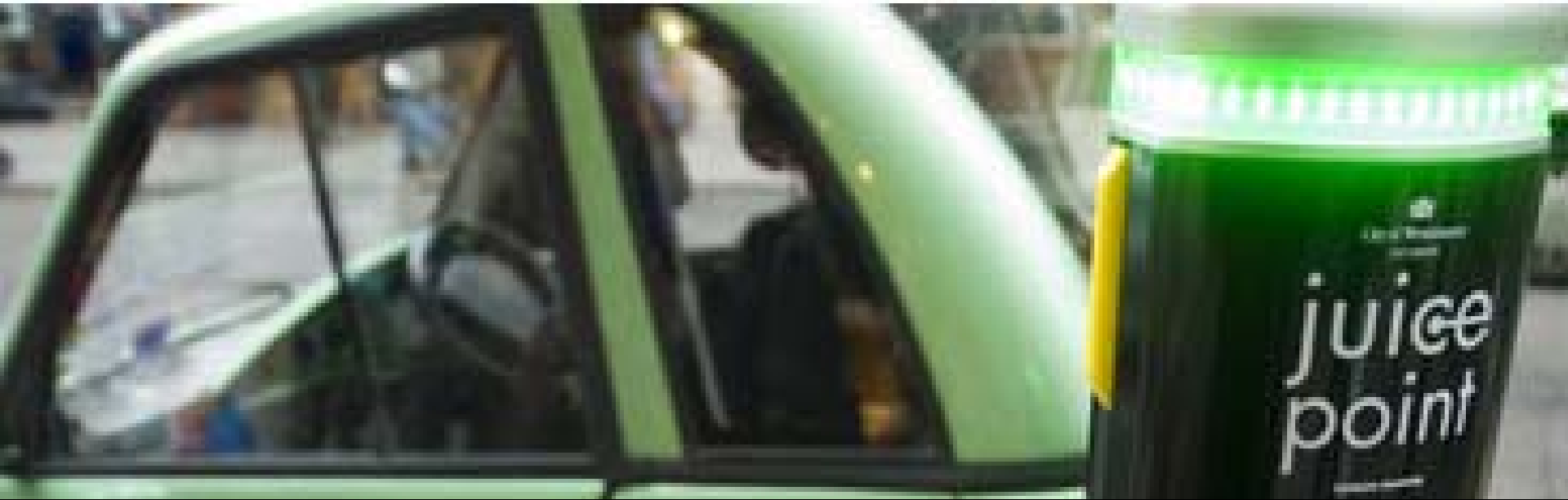
"I moved into Westminster, there is no parking and the cost of the congestion charge is reduced for residents anyway, so I may go back to a petrol car"

A significant proportion of electric car potentials are waiting for the second hand market to develop

Electric vehicle (prospective) purchase (%)



QB7a/b : Did you buy your electric vehicle new or second hand? /Do you think you'll look for a new or second hand electric vehicle?
Base: Electric car owners (46) Electric car potentials near (106) Potentials far (154)



How does the market feel about the proposed infrastructure changes?

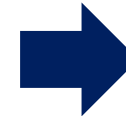
1. The scheme addresses a great number of concerns for potentials and could play a significant role in bringing more drivers into the market
2. Current owners are less positive, feeling that the infrastructure would have little impact on their usage of EVs and that they could be better supported in other ways
3. As such there is low willingness to pay to register amongst owners

TfL's plans have reasonable levels of awareness within the potential market and for those who are aware, there is evidence that the scheme would address their concerns

53% of electric car owners were aware of Transport for London's plans for the EV infrastructure



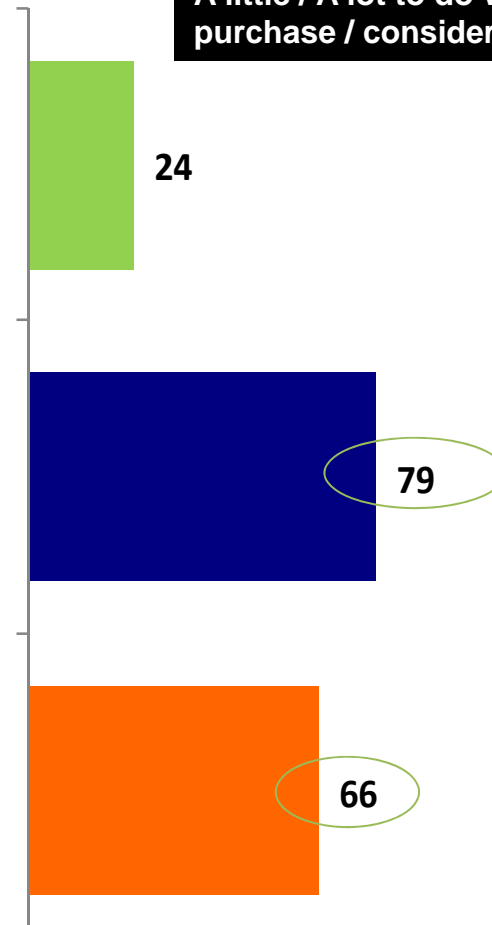
36% of potential near market were aware of Transport for London's plans for the EV infrastructure



27% of potential far market were aware of Transport for London's plans for the EV infrastructure



A little / A lot to do with decision to purchase / consider an EV (%)



QD1: Before taking part in this research were you aware of these plans to grow the electric vehicle charging infrastructure in London by 2015?

QD2a/b: And did this knowledge play a role in your decision to purchase / consider an electric vehicle?

Base: Electric car owners (xx) Electric car potentials (260)

The majority of EV owners feel that the scheme would make no difference to their usage of their electric car, although a third would drive more

- I would use public transport much more often
- I would use public transport more often
- No difference
- I would drive more often
- I would drive much more often



"I am really careful with my battery, I wouldn't want to charge for four hours. It's eight hours or nothing"

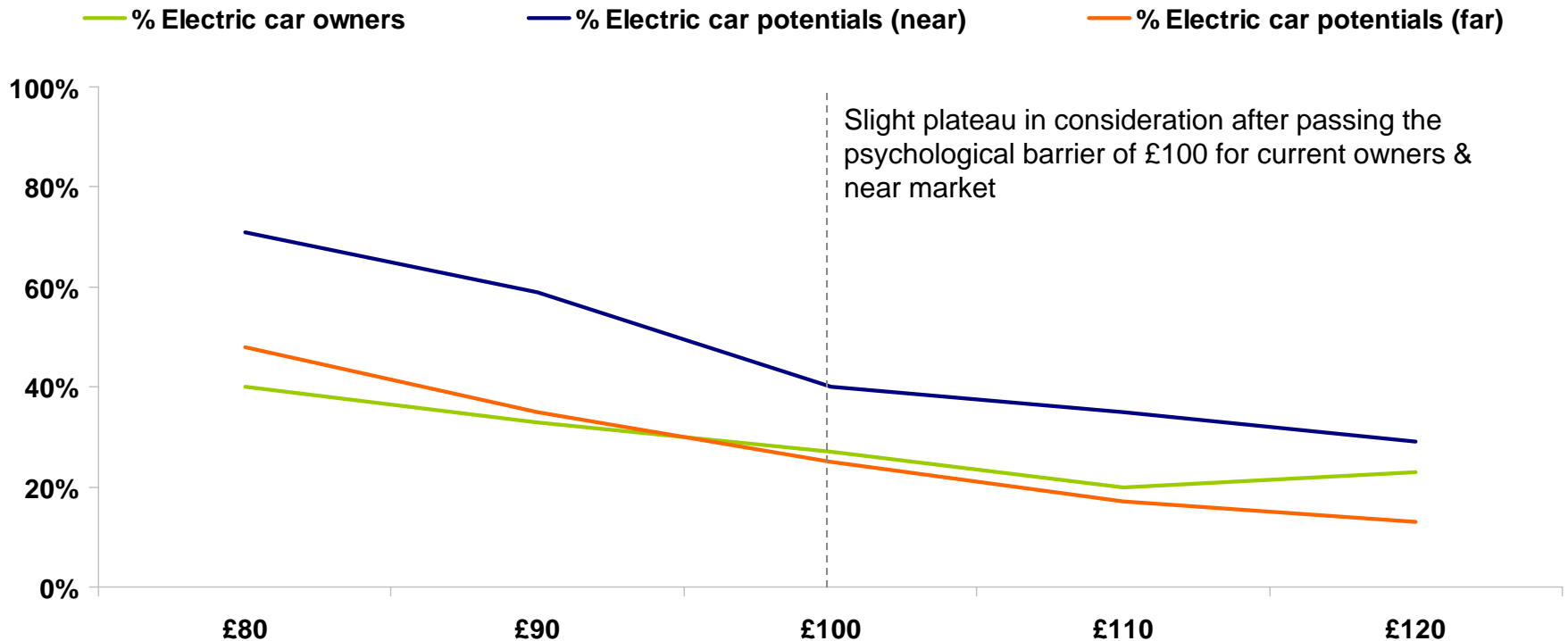
"I wouldn't leave it to chance, what if there wasn't one available?"

QD4 : Assuming that 2,500 new electric vehicle charging points Bare up and running across London by 2015, how would this affect your electric vehicle usage versus public transport in London?

Base: Electric car owners (46)

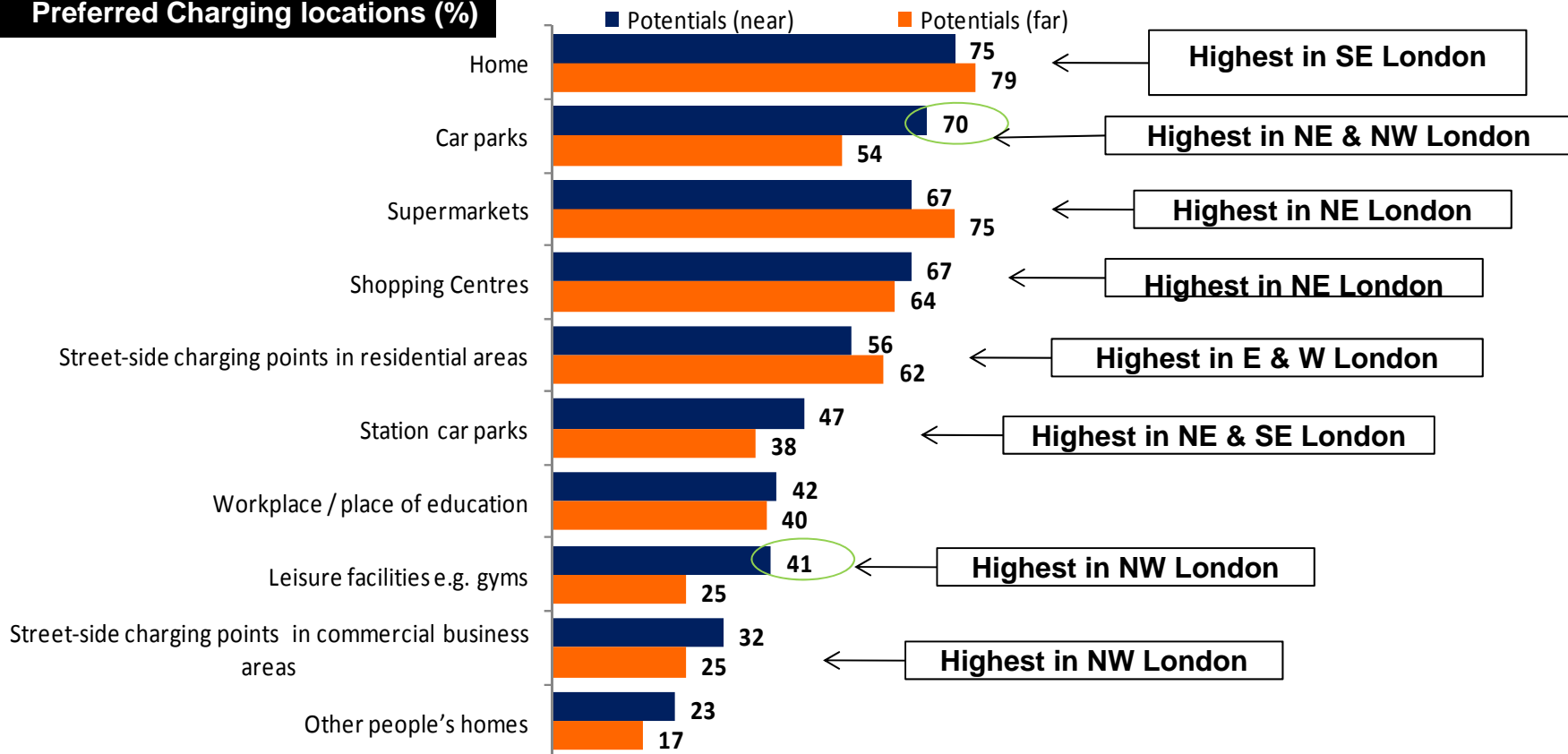
As such, current electric car owners show a lack of willingness to pay to register for usage of the charge points

- The near market show the most interest whilst the far market are most price sensitive
- For the near market who drive often, these price points could represent a good deal for cheap fuel



The potential market are more interested, looking for the infrastructure to allow them to charge at several locations

Preferred Charging locations (%)



QA12a: If you bought an electric vehicle in future, where would you like to be able to charge it from?

Base: Electric car potentials near market (106) Potentials far (154)

Aside from the increase in infrastructure the market is looking for financial incentives, parking and bus lane privileges

“Greater consistency of parking charges across Greater London and Access to all charge points not just the borough you live in.”

“Special financial incentives like the scrappage scheme”

“Free parking in council owned car parks would encourage greater adoption.”

“Allow use of bus lanes, extend 4 hour limit on parking meter use to 8 hours. Other councils outside Westminster to allow free parking.”

What could be done to encourage greater adoption and usage of electric vehicles?

“Reassure people that the incentives... will not be taken away and that charging a car in... London will not become impossible due to demand.”

“Need to reduce hidden costs: Expensive 6-monthly services. People think charge points are essential - I have only found the need to use one once in 2 years.”

“Standardisation of the benefits for driving an electric vehicle in London.”

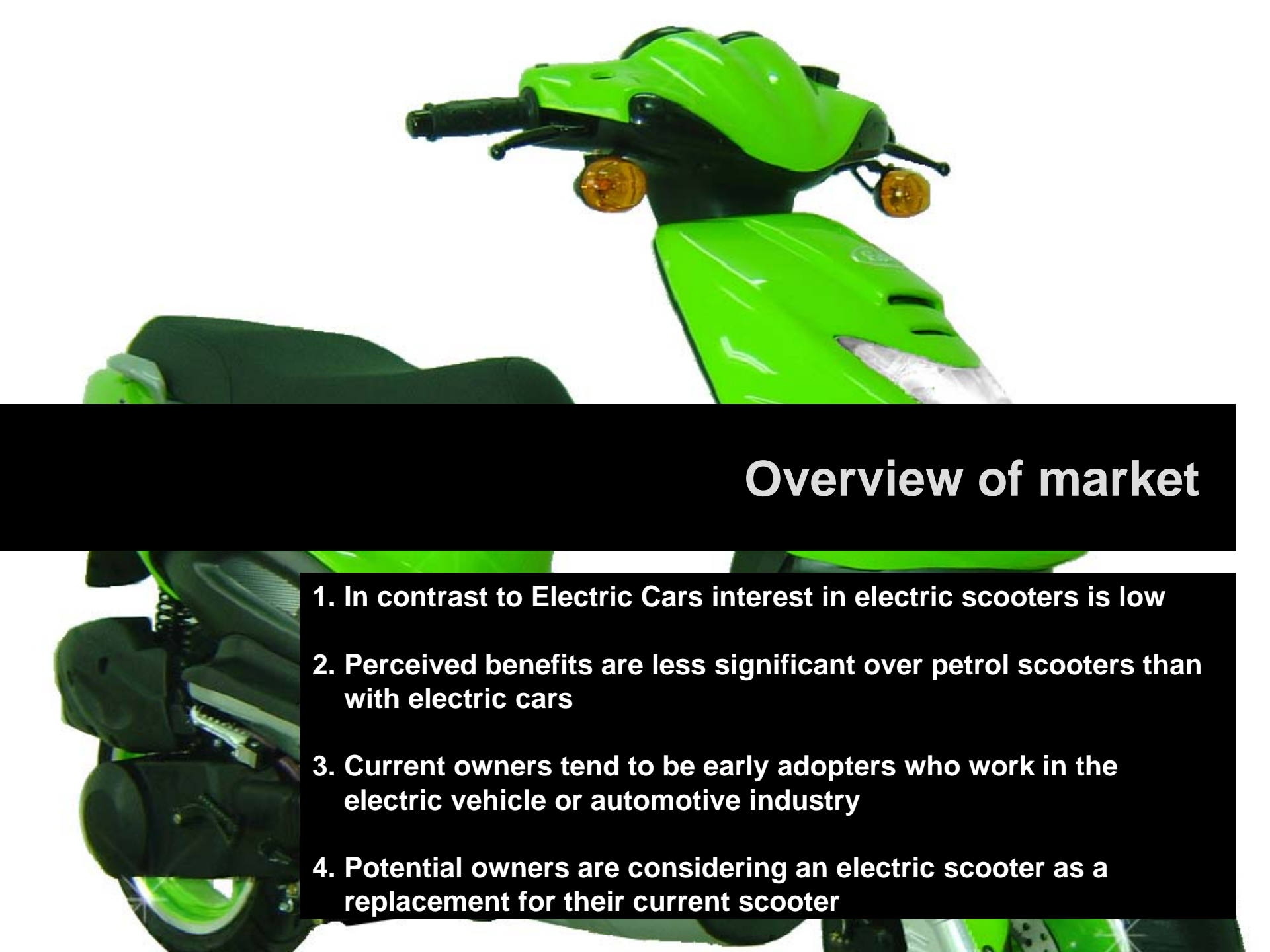
“Subsidise the prices”

“Low road tax, zero congestion, low running, insurance and maintenance costs. Long battery life, good mileage per charge.”



Electric Scooter Market

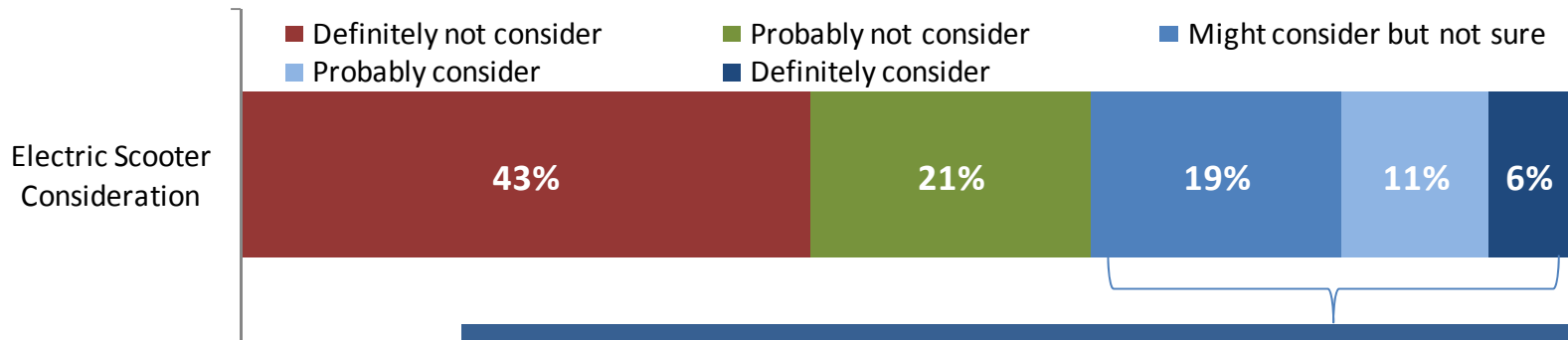




Overview of market

1. In contrast to Electric Cars interest in electric scooters is low
2. Perceived benefits are less significant over petrol scooters than with electric cars
3. Current owners tend to be early adopters who work in the electric vehicle or automotive industry
4. Potential owners are considering an electric scooter as a replacement for their current scooter

Interest in electric scooters among London drivers is lower than electric cars, with one third interested in buying one in future



36% of London drivers would consider an electric scooter

In the next 12 months	In the next 2 years	In the next 3 years	In the next 4 years	In the next 5 years	In more than 5 years time
3%	10%	9%	5%	5%	4%

13% of London drivers would consider an electric scooter in the next 2 years (Near Market)

23% of London drivers would consider an electric scooter in more than 2 years time (Far market)

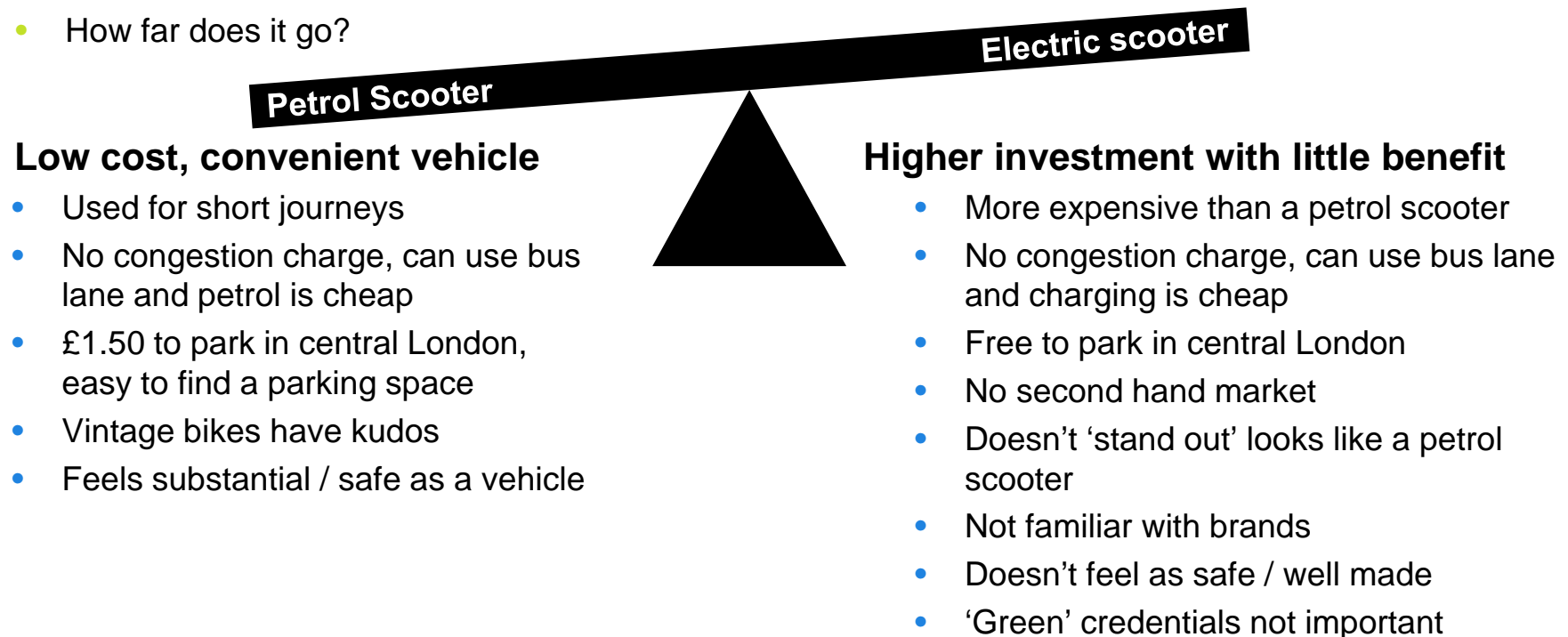
Omnibus Q9: Taking into account your knowledge of electric cars, how likely do you feel you would be to consider purchasing an electric scooter in future?

Omnibus Q10: And when do you think you would consider buying an electric scooter?

Base: Non-EV owners: 961

Currently, there is no great benefit in buying an electric scooter over a petrol scooter

- When considering purchasing an electric scooter there are a number of questions to ask:
 - How much does it cost to buy?
 - How much does it cost to run?
 - Are there cost savings in central London?
 - How does it feel to drive?
 - How far does it go?



Owners of businesses that sell EVs admit they are working in a challenging market



Business owners that sell EVs:

- Feel that the government does not do enough to support the industry
 - Call for more incentives / benefits and infrastructure
- Exchange rates have harmed electric scooters particularly
 - No longer have price advantage or parity with petrol scooters, often more expensive than regular scooters
- Lack of promotion / awareness
 - Customers do not fully appreciate the benefits of electric scooters
 - Often feel they're single handedly fighting for the future of the electric car / scooter

Current and potential owners have distinct profiles

Electric scooter owners

- Involved in the automotive industry or sell (electric) scooters for a living
- Passion for cars and bikes
- Have previous experience with petrol scooters and have since 'upgraded' to electric
- Inner London / driving into CC zone
- High income / SEG
- Some overlap with electric car owners

I am an automotive engineer and in general am interested in alternative technology.

The opportunity came up to start selling these electric scooters and I enjoy riding them so much, I thought there must be a market for this in London. It is just an obvious solution.

Potentials (near market)

- Do not know a lot about electric scooters currently, but know people who own electric scooters
- Own or have owned a scooter previously
- Passion for cars and bikes
- Mix of inner and outer London

My friend has an electric scooter and I am tempted to get one myself. He let me test ride it and it was kind of like being blown down the road by a gust of wind.

To be completely honest. I do not know much about how people ride electric scooters in London. I don't even see them around.

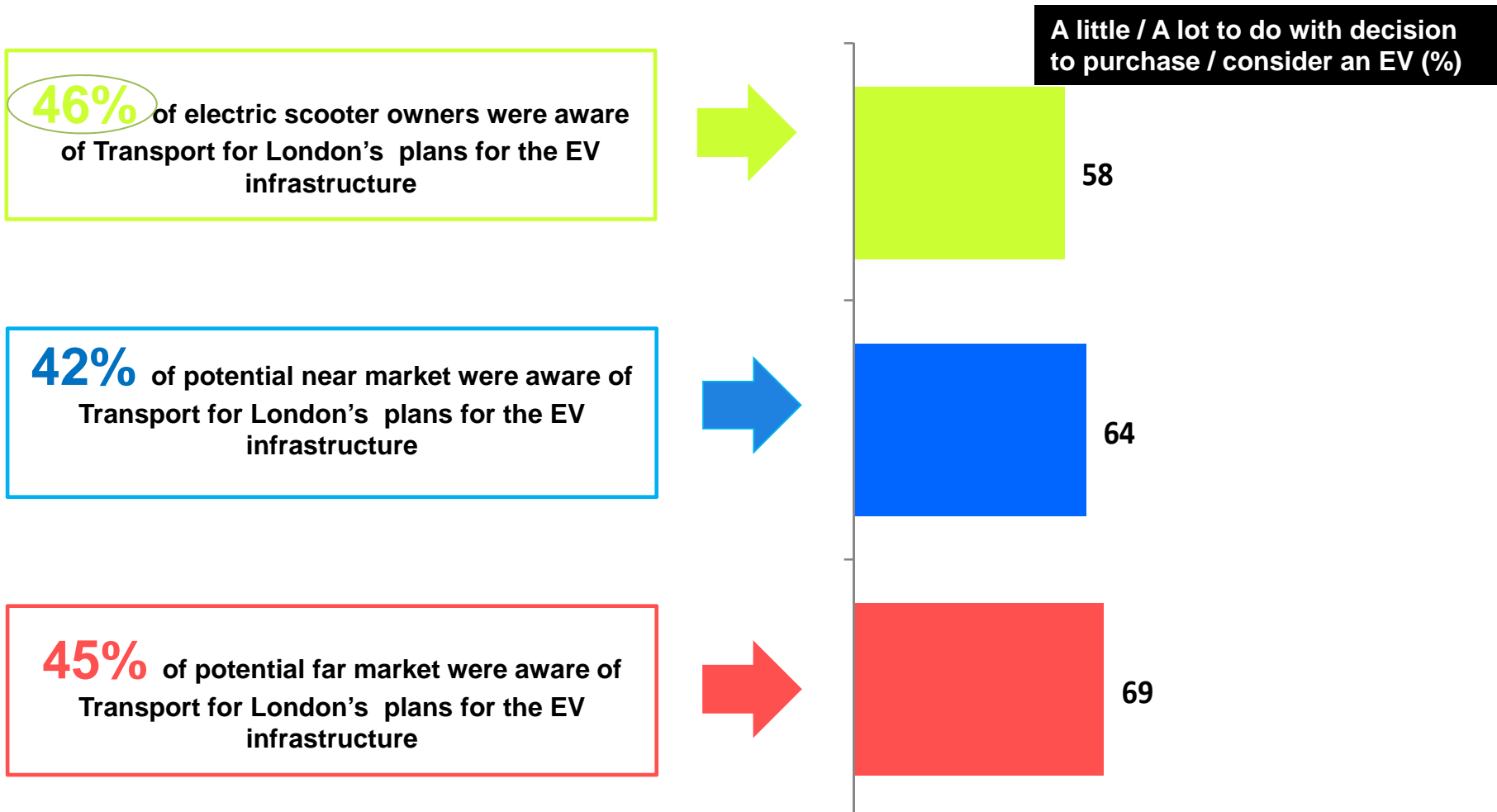
I am not sure what I should do if it were to break down? Surely I wouldn't just take it to a normal garage. I also expect that the parts will be more expensive than something like a Vespa.



Response to TfL infrastructure

- 1. Overall the scheme is praised for raising the profile of electric vehicles in London**
- 2. Whilst there is a reasonable level of interest in the scheme, electric scooter owners and potentials are more price sensitive than electric car owners and have some concerns over the logistics of the scheme**

High awareness of the infrastructure expansion amongst the scooter market which has driven interest for many

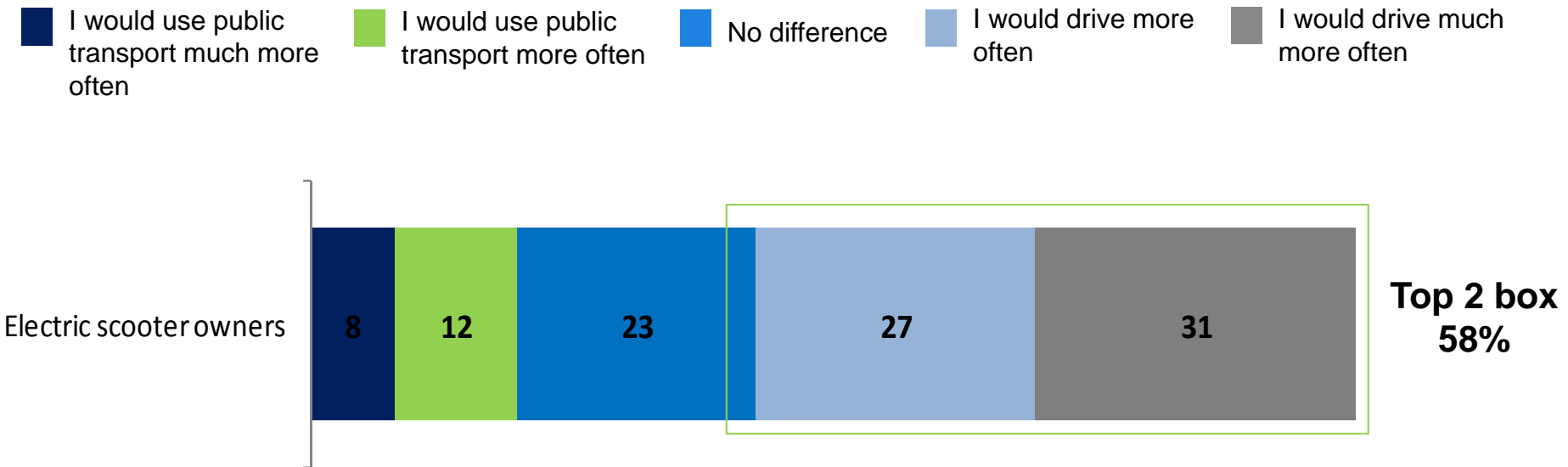


QD1: Before taking part in this research were you aware of these plans to grow the electric vehicle charging infrastructure in London by 2015?

QD2a/b: And did this knowledge play a role in your decision to purchase / consider an electric vehicle?

Base: Electric scooter owners (24) Electric scooter potentials near (66) Potentials far (75)

Reasonable amount of agreement that the infrastructure expansion would increase electric scooter driving frequency



QD4 : Assuming that 2,500 new electric vehicle charging points are up and running across London by 2015, how would this affect your electric vehicle usage versus public transport in London?

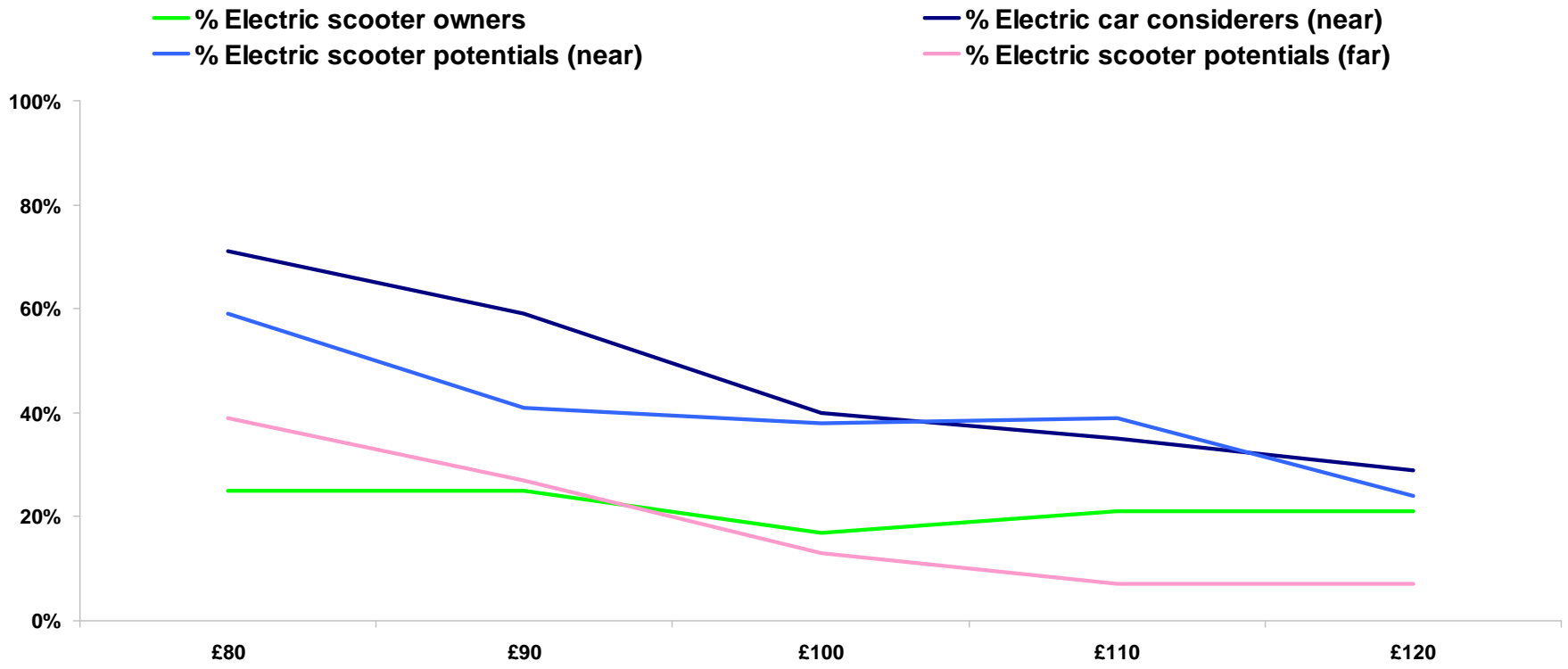
Base: Electric scooter owners (24)

Overall the scheme is well received

- Offers support to owners of electric scooters
 - Current users praise the support TfL is offering
 - Potential users feel that it represents the market moving forward / a rise in demand
- It may change current behaviours:
 - Charging a scooter is quite straightforward and behaviours are fairly habitual
 - Some scooter owners can even remove the battery and charge in their home
 - However, there is less battery anxiety or concern over 'topping-up' battery for a short period than for car owners so can imagine charging on the go
- There are some questions over the scheme:
 - Worry it won't be consistent with their charging apparatus currently (will need to buy new wires etc)
 - Concern they'll have to carry around charging kit
 - May not be conveniently located for night time charging

Both current and potentials praise the scheme for supporting the industry

Electric scooter owners are less willing to pay than potentials and electric car owners, the savings may not be great enough to justify the cost



QD4 How likely are you to register your electric vehicle at this registration fee per year?
Base: Electric scooter owners (24) Electric scooter potentials near market (66) Electric scooter potentials far market (74)



The SME market



Recap on business methodology

- 17 in-depth interviews with:

SME owner with EVs

6 x SME owners with EVs in fleet

SME owners with no EVs

4 x SME owners with fleet vehicles but no EVs

SME with parking for staff

4 x SME with parking facilities for staff and no fleet vehicles

Business landlords with no EVs

3 x business landlords



Profiling the SME EV market



- 1. Businesses are as engaged with the potential EV market as consumers**
- 2. But a vacuum in information makes discussions quite hypothetical**
- 3. Convenience and cost savings of EVs are the key drivers for most business owners**
- 4. Barriers include lack of availability of vehicles, inconsistency from Boroughs and the government**

The primary benefits for businesses of owning an EV is convenience

Most motivating

CONVENIENCE

Convenience of not having to pay parking, CC, tax

Parking less time-consuming when free, more spaces

Smaller car easier to park

Can nip in and out of traffic

'I have a parking space that is right next to my office and costs me a fraction of what a normal parking space would cost'

'I never gets cabs any more, because my G-Wiz is far quicker in central London than any other mode of transport'

Underpinned by cost benefits.

Cost benefits are also important, but often offset by high initial investment and maintenance costs

COST BENEFITS

- Claim back tax from business
- Money saved on parking (in some Boroughs)
- Exemption from Congestion Charge
- No fuel bills
- Exception from road tax

- Cost savings are significant for businesses, particularly when they can claim back against tax / VAT at the end of the year
- However, the significant cost savings are often delayed and offset against an initially high outlay to purchase
 - And cost of upkeep / replacement of batteries
- Many current owners run high-margin businesses and therefore cost is not as big a motivator as convenience

'We get to claim it back on tax so we benefit eventually but up front costs are high'

'It cost us £20,000 in the first year'

'It is a lot of money to spend on a fleet when non-electric vehicles are so much cheaper'

Cost benefits are significant but often delayed.

Emphasis on benefits other than convenience differ by business profile

Brand focus

- **'Early adopter' status** projects image for company, e.g. technology company or high profile company
- **Standing out on roads** can be attention-grabbing - adding branding to vehicle accentuates this
- **'Green' credentials** of business communicated via electric vehicle e.g. organic food company

Company personality:

- *Entrepreneurial and innovative*
- *More flat structure*
- *Open to new ideas*

Industry

- *Creative, technology, high profile / media facing / celebrity focused, luxury / organic*

Fund availability / attitude to spending

- *Business and personal investment*
- *High margin businesses; disposable income*
- *Open to taking risks*

Location

- *Based in inner London*

Cost efficiency focus

- **Cost savings** for businesses who are money driven
 - CC, parking, tax savings, fuel savings
 - Mileage can be big company outgoing
- **Image of cost saving** also pull factor: e.g. companies with CSR focus

Company personality:

- *Single industry-focussed*
- *Often more hierarchical*
- *Process driven, fear change*

Industry

- *Services, manufacturing, supply chain*

Fund availability / attitude to spending

- *Business investment only*
- *Disposable income*
- *Conservative with finances in current climate*

Location

- *Based in inner and outer London*

Targeting opportunities for TfL

Barriers: Market development / manufacturers



Owners of EVs

- Limited market range / lack of vehicles
- Vehicles not easily accessible from manufacturers
 - Have to hunt down online or get custom built
- Issues with unreliable engineering
 - Battery replacement
 - Some experiencing breakdowns
 - Range and speed not as good as expected
- Lack of PR: market information / news not easily accessible



Non owners of EVs

- Limited manufacturer advertising
 - Low awareness of what manufacturers are doing / progress in aesthetics etc.
- Low knowledge of EV functionality / capabilities
 - Urban myths developing as a result / transferring knowledge from other technologies to EVs e.g. 'my battery be damaged if I don't let it run right down before I charge it'

'We were all so excited about the electric van when we got it, and then the problems started happening: stranded employees, parking no longer free, no support from the government at all', Mega van owner

The lack of development in the market is a challenge for both owners and non-owners alike

Barriers: Lack of knowledge / awareness

'They're definitely the future, there's no doubt about it, but I don't think there's enough cars available at the moment', non EV owner

"I see one of those little wiz go's in Covent garden now and again, are they available to anyone?", non EV owner

'I keep reading about new cars that the likes of mini and BMW are bringing out, but I'm not sure when this is going to happen', EV owner

'No-one knows yet what will happen, I guess we're just waiting for the technology to be ready', non EV owner

'Is it going to be hydrogen fuel cells rather than EVs now?', non EV owner

'There used to be electric cars back in the 80s, we had electric milk floats, the technology is there....why is it not happening?', EV owner

'It feels as if the market should be more developed by now, I got my G-Wiz years ago', EV owner

Despite the fact that EVs are felt to be the future, there is a perceived lack of progression in the market, which makes discussions quite hypothetical

Barriers: Government / Boroughs are perceived to offer inconsistent support



Owners of EVs

- Not enough financial support from government
 - Need more compensation cost of vehicle and for 'hidden' costs e.g. lowering curb
- Inconsistent benefits from Boroughs
 - Parking only free in some Boroughs
 - Some feel financial benefits they did receive is dwindling e.g. fewer free parking spots
- Feeling that government green-washing
 - 'Behind' EVs without follow up support



Non owners of EVs

- Lack of positive PR
 - Market news / progression not readily communicated
- Little perceived government support for market
- Low recall of any marketing / comms surrounding EVs

'I was under the impression that parking would be free in the Borough, that's what Boris had said, and then I find out once I've bought the van that it's not, this massively impacts my bottom line', EV van owner

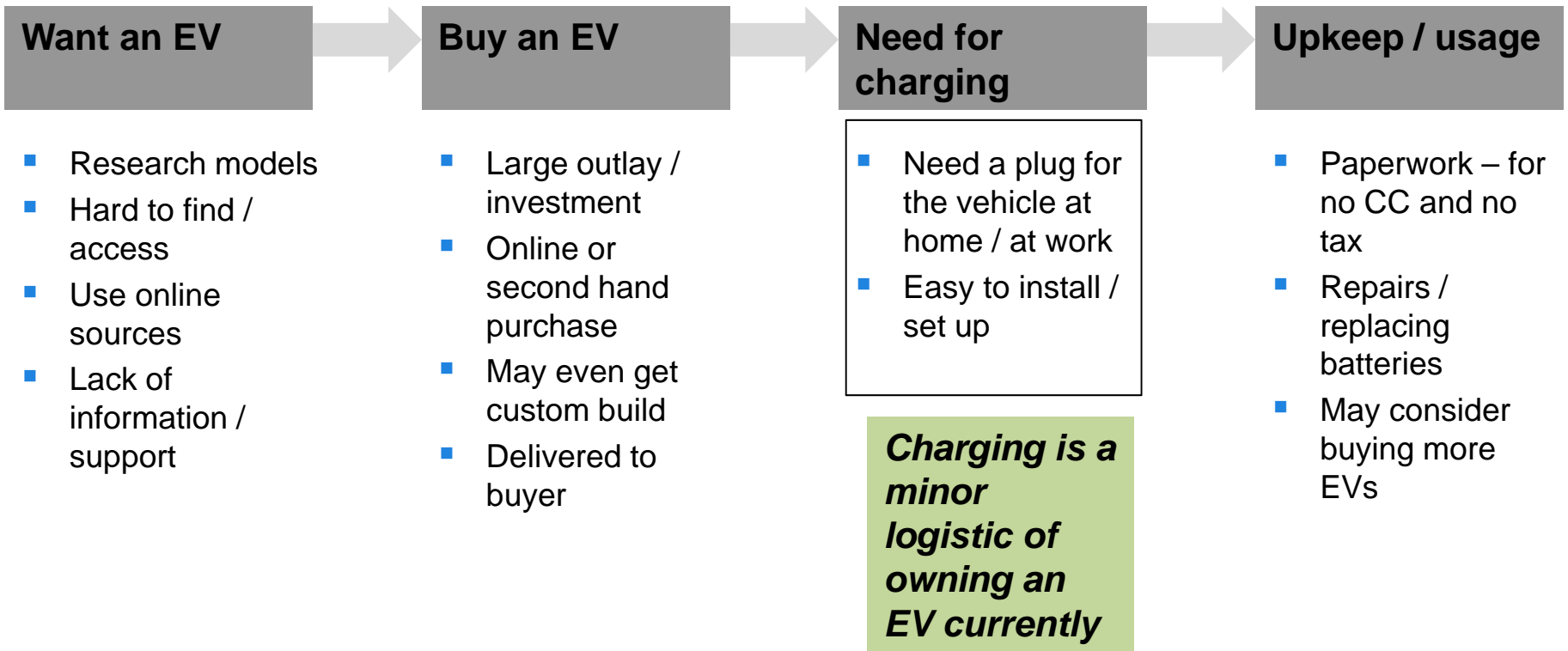
Realities of owning and running an electric car can frustrate but owners are still loyal to EVs

Barriers: There is also a perceived lack of demand for infrastructure from employees and tenants

- Managers / landlords don't currently believe that employees own EVs or will definitely want to own them in the future
 - There is interest in the development of the market but employers / landlords do not feel they need to develop infrastructure yet
 - Landlords have not had requests from tenants
 - There is no legislation currently to promote installation (e.g. Building environmental standards)
- In principle there are few barriers to installation where demand exists:
 - Landlords want to keep tenants happy / small price to pay / easy to respond to demand
 - Employers happy to provide infrastructure for senior employees who drive to work
- However, there are barriers to installing where no demand exists:
 - Landlords have little vested interest in providing charge points as little direct ROI
 - Parking is also at a premium - don't want to encourage driving amongst all staff
 - More suitable for senior staff / staff who drive EVs currently

***There is opportunity to generate motivating factors,
and then offer incentives and support for installation***

Installing charging points is considered in a small window of the purchase decision cycle a minor logistic of getting an EV



The challenge for TfL will be that there is only a narrow window of opportunity in which to offer support / motivate getting charging points installed



Response to the scheme

- 1. Positive response to the scheme but there are no intrinsic motivations or barriers to install infrastructure**
- 2. There are opportunities for TfL to develop further support and positioning for the scheme**

Overall response to the scheme is positive

- Business owners feel that the scheme in itself is a positive step for London
- EVs seen to be the future, and infrastructure will be needed as the market develops
- Feel that it is appropriate for TfL to provide this support to businesses
- Can see the broad benefit to businesses through incentives

Whilst there are no obvious barriers to uptake there are also no intrinsic motivations for any of the audiences:

Owners of EVs

- Own a vehicle already
- Have charging infrastructure that works for them already

'We only have one electric van which we park either in Soho or in Greenwich – we don't really need any more parking spaces'

Non owners of EVs

- Not at that point in the purchase decision cycle yet
- Have more pressing questions about EVs than charging: how do they work? How much do they cost? What money would I save?

'It's great that TfL are initiating this kind of scheme; it definitely needs a push in London and so hopefully this will mean that the whole market takes off a bit more', EV owner

Employers / Landlords

- Do not believe employees or tenants need or want charging yet
- Not included in current building / office standards

There will be a need to develop motivations to generate uptake

Response to the business fund

EV owners

- ✓ Infrastructure a necessary step to develop EV market
- ✓ TfL understand key drawback of EVs i.e. fears of running out of battery, range
 - ✓ Charge points will enhance key benefit of convenience
- ✗ However, current charging sufficient, cannot see need for more charge points or more sophisticated charge points
- ✗ For high-margin businesses £200 is not a motivating incentive (paperwork will be more hassle than £200)
- ✗ Concern over Borough logistics

Potential EV owners

- ✓ Useful if considering purchasing EVs
- ✓ Forward facing image for company
- ✗ However difficult for non owners to understand what the exact benefits would be, as they are focused at an earlier point in the purchase decision cycle (and lack understanding of EV functionality)
- ✗ Questions over aesthetics of charging points
- ✗ £200 not a major financial motivator if buying an EV

Providing support for a factor that is a small part of the decision making process when purchasing EVs

The business fund could be motivating for landlords / employers

1. *The Business Fund*

Employers / Landlords

- ✓ If have a lot of parking spaces and need to install charging points help with funding would be appreciated
- ✓ Could install several points at once
- ✓ Opportunity to work into CSR facilities management / green building standards
- ✗ Need to generate awareness of need / motivation which is not perceived currently
- ✗ May need more information on which charging points are required / how to manage costs

As landlords / employers are not installing as part of a purchase decision cycle there is an opportunity to motivate proactive installation

Evaluating the components of the scheme

2. Try before you buy or lease an EV

Response from EV owners

- ✓ Although they already own EVs, feel this would have been very useful for them when purchasing their EV
- ✓ Unique experience of driving EV often converts to purchase

Response from non EV owners

- ✓ Considered to be the right kind of incentive for TfL to be offering
 - ✓ Providing trial to make EVs accessible
- ✓ Best way to understand how something works is to experience it for yourself
 - ✓ Would aid understanding of vehicle, logistics, charging, monetary benefits
- ✓ Would generate positive PR

***Opportunity to promote trial and lease options well, and ensure this is supported by an education / training element, so people feel comfortable with how the EV operates
Generating momentum within the market***

Evaluating the components of the scheme

3. *Subsidising battery costs for commercial vans*

Response from EV owners

- ✓ Those with electric vans have understanding of current price and therefore saving positively received
- ✓ TfL helping with a significant cost
- ✓ Direct monetary benefit motivating
 - ✓ Tax back is how they benefit currently
- ✗ Seen to suit big business more than smaller businesses due to price

Response from non EV owners

- ✓ Appears that TfL would be helping with a significant cost
- ✗ However lack understanding of battery costs as focussed at earlier point in decision making process
- ✗ Initial cost of EV van perceived to be very high
- ✗ Only relevant to businesses that require vans
 - ✗ More support could be given to smaller businesses using electric cars

An important support for owners and businesses considering EVs



Next steps for SMEs

1. TfL need to generate motivations within the market, there are two key opportunities for this:
 - Top-down (e.g. Infrastructure, PR)
 - Bottom-up (e.g. Employee demand)

Opportunities for TfL amongst SMEs

- At present there are no intrinsic motivations to installing charging points for businesses:
 - Current owners already have their own infrastructure
 - Potential owners more concerned about purchasing the vehicle than installing charging
 - Employees / tenants are not perceived to be in need of infrastructure currently

- However, there are also few intrinsic barriers:
 - Cheap and easy to arrange
 - Provides a good charging service if demand exists

- Opportunity therefore lies in stimulating motivation for the audience
 - By creating a sense of progression in the market
 - By educating the masses about EVs themselves
 - By bolstering benefits of convenience, cost, brand image
 - By creating curiosity and excitement around the market

Opportunities include both top-down and bottom-up approaches to promotion

Top Down

- Generate sense of momentum in market: PR, on-street infrastructure, TfL fleet, promotion of other businesses who have fleets of EVs in London
- Promote incentives for EVs in general alongside business fund:
 - Convenience and Cost savings e.g. CC exemption, free parking, tax breaks
- Promote trial vehicles / battery funding
 - Team up with street car to place EVs around London – trial and promotion
 - Open days for trial, education along side
- Make taking up incentives hassle-free
 - Simple process, one payment etc.

Bottom Up

- Provide information on business fund to current / potential owners of EVs so they can ask employers for infrastructure
 - As more people own EVs, more WOM will be created
- Provide case studies from current users to near market businesses
- Promote online forum through which EV owners can share knowledge / experiences of infrastructure

Opportunities to target landlords

- Property management committees
 - Presence on bigger industrial estates
 - Target this committee as made of tenants and therefore potentially have more of vested interest than property owners in charge points
- Promote charging infrastructure in environmental building standards
 - HIPS packs
 - Include energy performance certificate and sustainability documents
 - Benefits of charge points could become part of this 'rating'