energy saving trust

Taxi and private hire survey analysis

Local Government Support Programme

Dorset Council
March 2022

energy saving trust

Top

Contents

Executive summary

Energy Saving Trust has analysed survey results from taxi and private hire drivers and operators licensed by Dorset Council. This support has been provided through the Local Government Support Programme which is fully funded by the Department for Transport.

The survey closed on 7th February 2022. A total of 91 responses were received, representing nearly 10% of Dorset's licensed taxi and private hire drivers and operators. Energy Saving Trust have used this information to explore characteristics, driving patterns and opinions of drivers and operators, and offer recommendations for the council to encourage uptake of zero emission vehicles.

Characteristics

- **Licence types represented by the survey are approximately in proportion with total vehicle and operator licences in Dorset.** While the number of responses from drivers with a private hire licence is lower than might be expected, all those with a private hire operator licence also stated they had a private hire driver licence.

- **Diesel is the most common fuel type across all licence types, representing nearly nine in ten (88%) vehicles currently licensed with the council**. This was also the case for those responding to the survey: all private hire drivers and four in five (82%) hackney carriage drivers stated they use a diesel vehicle.

- **More than half of all vehicles licensed in Dorset would not be compliant with Clean Air Zone restrictions**. Encouraging drivers and operators of these vehicles to switch to cleaner vehicles may be an initial priority for the council.

- **Existing use of plug-in vehicles is low among the taxi and private hire trade in Dorset.** There are fewer than 20 plug-in vehicles (fully electric and plug-in hybrid vehicles) in the entire fleet, representing less than 2% of all vehicles. Just four drivers who responded to the survey are currently using a plug-in vehicle, while just one operator stated they have plug-in vehicles in their fleet.

- **The average age of all vehicles licenced in Dorset is just over 7 years old.** More than one in ten private hire vehicles (12%) are less than a year old. Despite this, there does appear to be an ageing vehicle population in Dorset, with more than one in five hackney carriage vehicles (23%) exceeding an age of 10 years.

- **Nearly a third of drivers (31%) who responded to the survey park their vehicle in public locations while not on shift.** Dorset Council can support these drivers by installing additional public residential chargepoints either on-street or in council-owned car parks.
- **Most drivers who responded to the survey own their own vehicle**. Almost three in four (71%) drivers own their vehicle and will therefore have control over switching to an EV.

Driving patterns

- **Based on daily mileages provided in the survey, most drivers may not need to charge an EV during their shift.** Almost two in three drivers (63%) travel less than 200 miles on a typical day. While the capacity of batteries continues to improve, most EVs currently on the market have a real-world range of up to 200 miles. For larger multi-purpose vehicles, the typical range is closer to 100 miles, although models with longer ranges are becoming available.
- **Drivers who responded to the survey have an estimated average annual mileage of 26,661 miles.** Based on information retrieved for 61 vehicles from the gov.uk MOT service.
- **London Heathrow and London Gatwick Airports were the most common long-distance destinations**. Both journeys are more than 100 miles one-way (from Dorchester). Raising awareness of rapid charging infrastructure in, or along the route to, these locations may encourage drivers to feel confident that they will be able to charge an EV even when taking long-distance fares.
- **Three in four drivers (75%) who responded to the survey have at least 30 minutes of down-time on an average day.** This would be enough time to provide a substantial top-up for an EV battery mid-shift via a rapid chargepoint. For example, a 50 kW rapid charger could provide an MG MG5 EV with more than 70 miles of range in just 45 minutes[1].
- **The two most popular taxi ranks used by hackney carriage drivers were both in Weymouth**. Rapid chargepoints close to popular ranks may benefit hackney carriage drivers who will need to top-up their vehicle mid-shift.

Driver opinions

- **Nearly one in five (19%) planned to switch to an EV in the next 5 years or had already done so**. Private hire drivers were more likely to say they are planning to switch to an EV

[1] The vehicle consumption rate (Wh/mile), taken from the EV Database, has been used to estimate the miles per hour delivered by a 50 kW rapid chargepoint. It has been assumed that a 50 kW chargepoint is able to deliver, on average, an 80% (40 kW) charge rate. Actual figures will depend on several factors, including the state of charge of the battery, the temperature and the vehicle's charging profile.

than hackney carriage drivers.

- **The majority (45%) of respondents were unsure whether they will switch to an EV.**
- **One in four (26%) said that they will never buy or switch to an EV.** Drivers that own their own vehicle were more likely to say they would never switch to an EV compared to drivers that use their employer or operator's vehicle (35% and 5%, respectively).
- **The biggest barriers to switching are that suitable EVs are too expensive and that an EV cannot travel far enough on a single charge**. Nearly two in three respondents who said they will never switch to an EV said concern about range is their biggest barrier to switching.
- **There is strong case for education and awareness raising among drivers and operators.** More than a quarter stated they either do not know or disagree that it is cheaper per mile to recharge an electric vehicle than refuel a petrol or diesel vehicle. Just over a quarter also do not agree that EVs are better for the environment than petrol or diesel vehicles.

Key recommendations

As a result of the findings within this report, it is recommended that Dorset Council considers the following next steps:

Provide independent advice to drivers and operators

- Seek to improve drivers' understanding of the current EV market in terms of suitable models available, their typical range and overall running costs.
- Provide drivers with independent information on the benefits and potential long-term savings associated with owning or leasing an EV.
- Consider providing advice on purchasing second-hand EVs, such as visiting reputable retailers and dealerships.
- Raise awareness of grants available for purchasing EVs and associated home charging infrastructure. The council may also want to explore whether any additional financial incentives can be introduced to support the business case of switching to an EV.

Build confidence in charging infrastructure

- Ensure drivers are aware of the existing charging infrastructure available in Dorset, surrounding areas and common long-distance destinations.
- Provide guidance notes on using Zap-Map and similar chargepoint location

websites and apps.

- Explore options for installing rapid charging infrastructure in public car parks, ideally close to taxi ranks and popular rest-stops, as well as residential charging to support drivers that park their vehicle on-street.
- Engage with chargepoint operators regarding the survey outcomes and any upcoming council plans to encourage EV uptake amongst taxi and private hire drivers.

Introduction and background

Energy Saving Trust was asked to conduct a survey in early 2022 to understand taxi and private hire journey patterns and perceptions. The outputs will help Dorset Council to identify barriers to electrifying the taxi and private hire fleet and support future policy decisions. To support an interpretation of the survey and provide an overall fleet baseline, data for all taxi and private hire vehicles currently licensed across Dorset has also been analysed. Results from the survey are then split into three sections:

- **Characteristics** provides context on the demographics of the sample of drivers and operators who responded to the survey, including age, licence type and access to off-street parking.
- **Driving patterns** explores the driving habits of the respondents and whether the switch to an EV is likely to be feasible or not.
- **Opinions on EVs** highlights the core concerns, opinions and mindsets that drivers and operators have surrounding EVs.

Across the UK, the coronavirus pandemic has significantly impacted demand for taxi and private hire journeys. We anticipate that responses will have been affected to some extent as the industry continues to tackle the difficulties brought about by the pandemic.

Results

Current fleet

Information on all vehicles licensed across each of the five taxi licensing zones covered by Dorset Council has been analysed to support an interpretation of the survey results. On 08 February 2022, the council provided the licence type and vehicle registration mark (VRM) for 962 unique licensed vehicles[2]. This information was supplemented with data retrieved from the DVLA[3] on vehicle fuel type, body type, make, model, Euro status, age, date of first registration, and date purchased by the current owner as explored in following sections.

1. Licence type

Figure 1 shows the proportion of vehicle licence types within each licensing zone. Licences for Weymouth & Portland, West Dorset, and North Dorset are combined into one system. Across Dorset, 56% of vehicle licences (n=541) are private hire licences. This proportion is significantly higher in East Dorset (at nearly 80% of total licences) and significantly lower in Purbeck (at just over 30% of total licences). The number of vehicles licensed is expected to vary from the number of drivers licensed: some drivers may drive more than one vehicle, while some vehicles may be driven by more than one driver. There are also 145 private hire operators in Dorset, according to information received from the council.

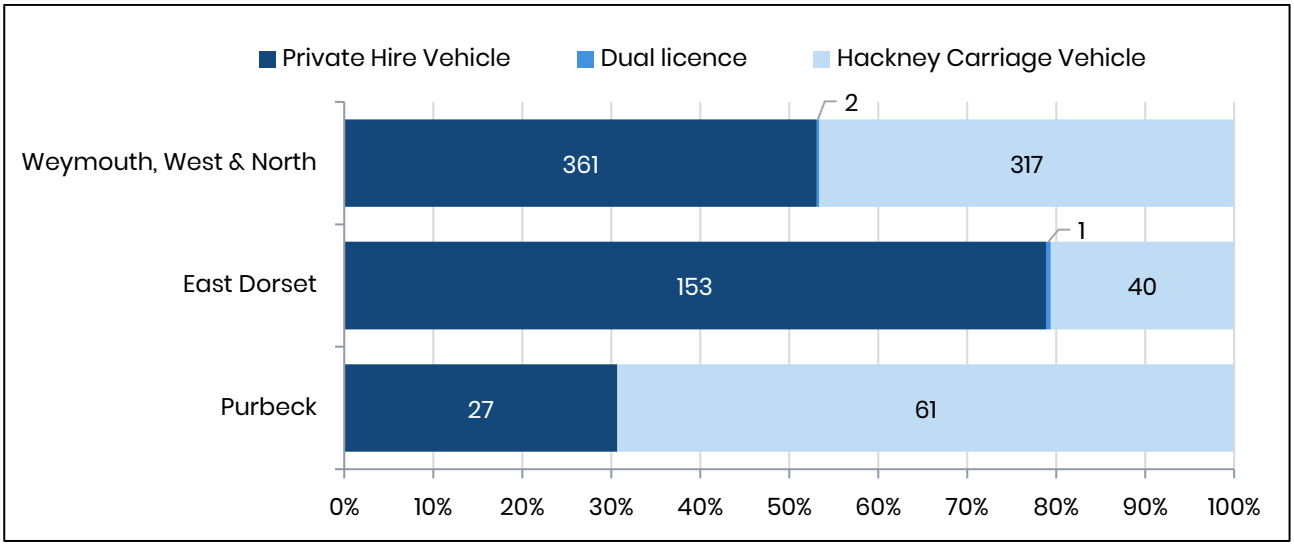

Figure 1 – Number of vehicles, by licence type, licensed within each of the five taxi licensing zones in Dorset as of 08 February 2022. Three zones (Weymouth, West & North) are combined into one reporting system. Data provided by the council. (n=962)

[2] Two duplicated records were removed.

[3] Information for four vehicles could not be retrieved from the DVLA system.

2. Vehicle fuel type

More than nine in ten (95%) vehicles currently licensed with the council are either diesel or petrol. **Figure 2** shows the breakdown of fuel type by licence type. Diesel is by far the most common fuel type across each licence type, making up 88% of the entire fleet. There are fewer than 20 electric vehicles (fully electric and plug-in hybrid vehicles), representing less than 2% of all vehicles. This indicates the scale of change that will be required to achieve a low or zero emission taxi and private hire fleet across Dorset.

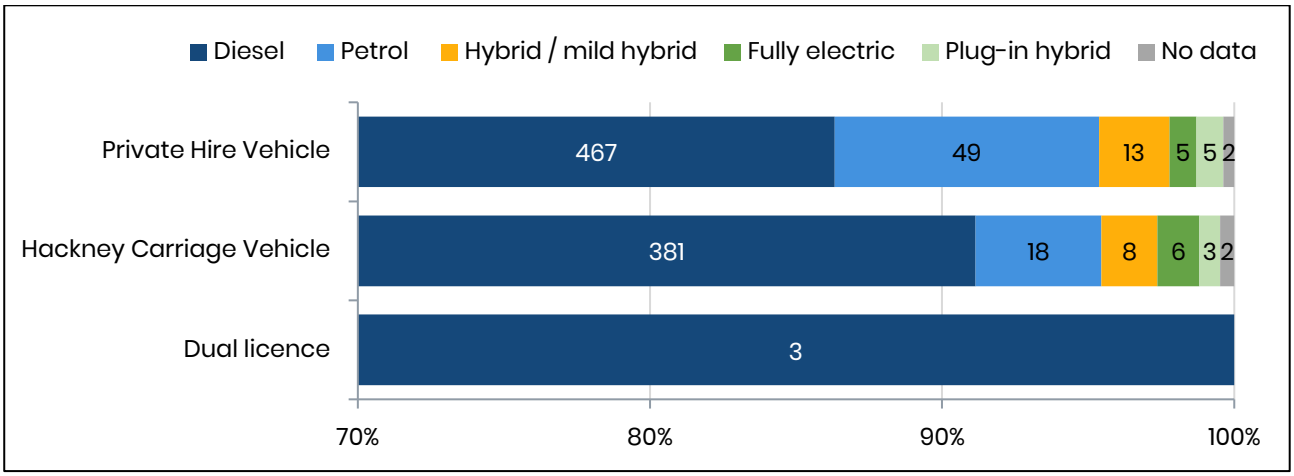

Figure 2 – Breakdown of fuel type by licence type for vehicles licensed in Dorset as of 08 February 2022. Please note, the horizontal axis in this graph does not start from zero. (n=962)

Proportions of alternative fuelled vehicles (electric, plug-in hybrid and hybrid) are similar across hackney carriage and private hire vehicles. While numbers are low, existing fully electric vehicles are distributed evenly across each licensing area. As EV numbers grow, it will be important to continue to monitor their distribution to ensure certain regions are not being left behind.

3. Euro status and Clean Air Zone compliance

There are currently two Air Quality Management Areas (AQMA) declared in Dorset due to high levels of nitrogen dioxide[4]. Taxi and private hire vehicles frequently operate in town centres and other busy pedestrian locations. Therefore, the impact of these vehicles on residents' and visitors' exposure to poor air quality is often greater than the overall number of vehicles in operation would suggest. To address poor air quality in cities and town centres, some local authorities are introducing Clean Air Zones (CAZ)[5]. Under current requirements, diesel vehicles must be Euro 6 or higher, while petrol vehicles must be Euro 4 or higher, to avoid facing charges

[4] According to information available on the Dorset Council website.

[5] A list of UK cities that have implemented Clean Air Zones is available here: https://www.gov.uk/guidance/driving-in-a-clean-air-zone#cities-with-clean-air-zones.

associated with entering a CAZ.

As shown in **Figure 3**, three in five (61%) diesel vehicles licensed with Dorset Council would not be complaint with CAZ restrictions. Across the entire fleet, more than half (54%) of all vehicles are not currently compliant with CAZ restrictions. Encouraging drivers and operators of these vehicles to switch to cleaner vehicles may be an initial priority for the council.

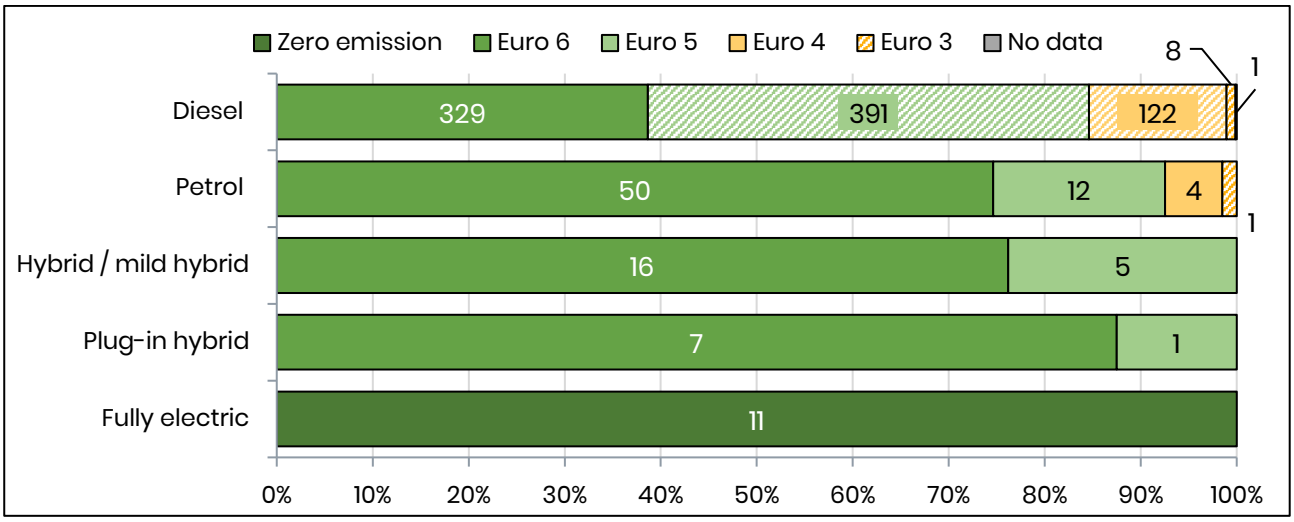

Figure 3 – Euro status of vehicles by fuel type for vehicles licensed in Dorset as of 08 February 2022. Euro status information retrieved from the DVLA. Four vehicles that did not have information with the DVLA system are omitted here. (n=958)

4. Vehicle age

Figure 4 (on the next page) shows the age distribution of all licensed vehicles by licence type. More than one in ten private hire vehicles (12%) are less than a year old, while just 1% of hackney carriage vehicles are less than a year old. There does appear to be an ageing vehicle population in Dorset, with more than one in five hackney carriage vehicles (23%) exceeding an age of 10 years. The average age of all vehicles licensed in Dorset is just over 7 years old.

Figure 5 shows a breakdown by licence type of vehicle age when purchased by the current owner. As with the wider UK vehicle population, most taxi and private hire vehicles in Dorset are not purchased new. Just 8% of current vehicles licensed were purchased new, the majority of these are private hire vehicles. More than one in four (26%) private hire vehicles were purchased at less than a year old. Hackney carriage vehicles appear to be slightly older when purchased. Across the entire fleet, two in five vehicles (44%) are purchased at five years old or over. This information suggests that brand new EVs may be inaccessible for most drivers and operators in Dorset without additional financial support.

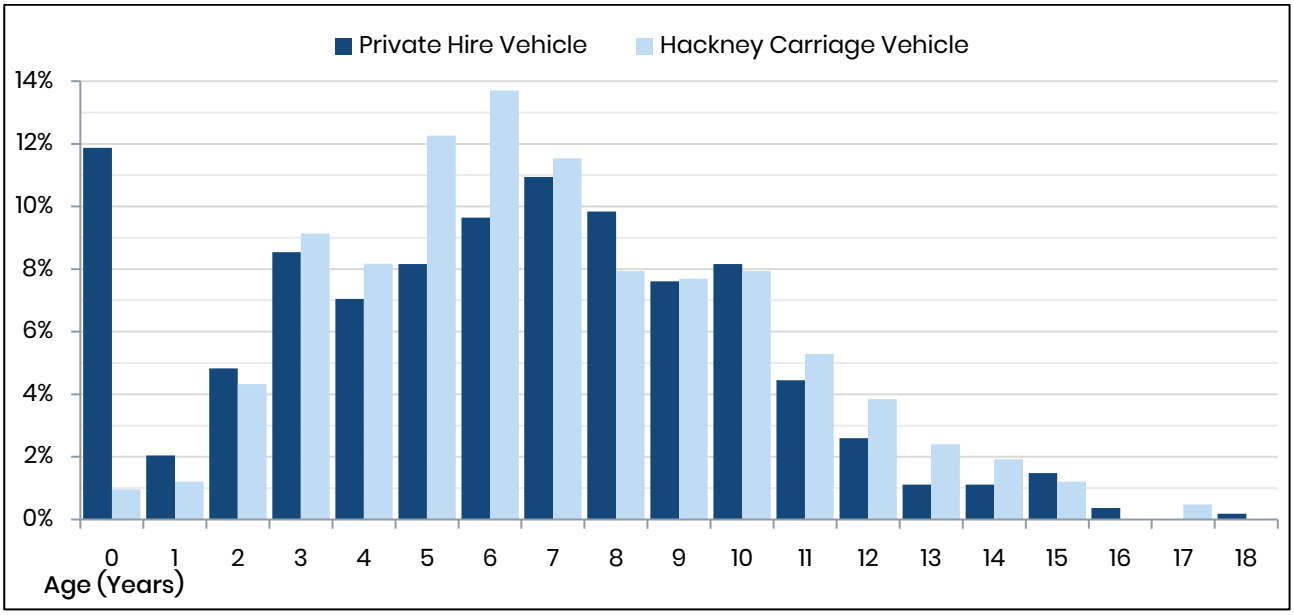

Figure 4 – Breakdown of vehicle age by licence for vehicles licensed in Dorset as of 08 February 2022. Percentages are of a total for each licence type. Information for three vehicles with a dual licence and four vehicles with no data retrieved from the DVLA are omitted here. (n=955)

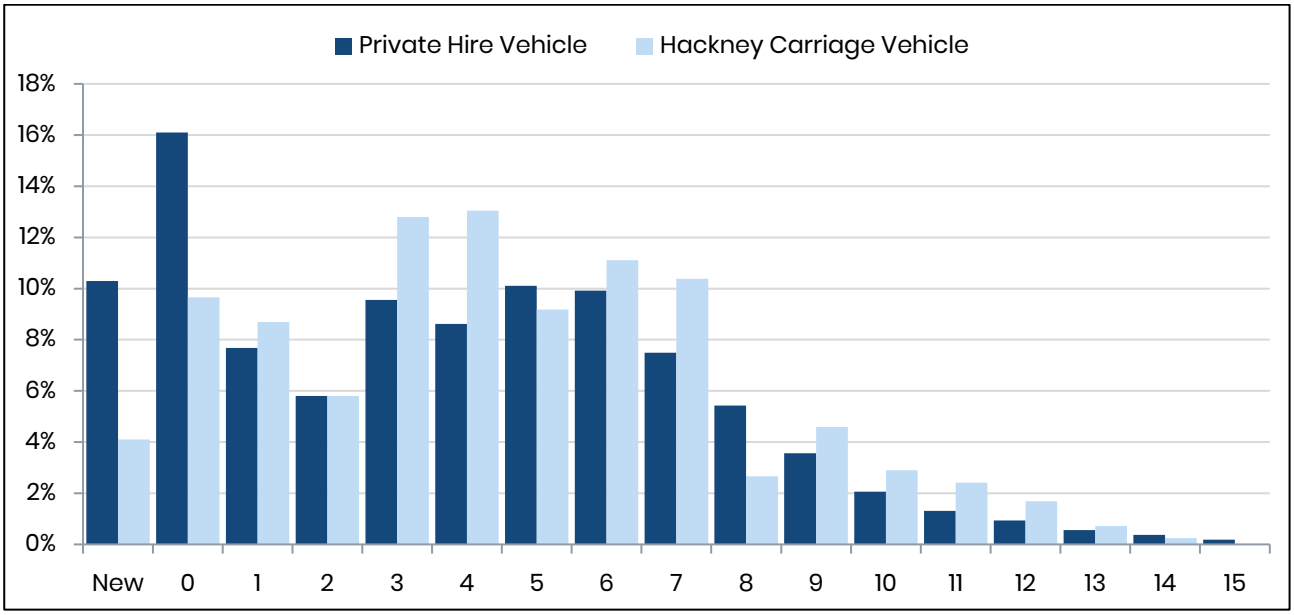

Figure 5 – Breakdown of vehicle age when purchased by the current owner for vehicles licensed in Dorset as of 08 February 2022. Percentages are of a total for each licence type. Information for three vehicles with a dual licence and four vehicles with no data retrieved from the DVLA are omitted here. (n=955)

Vehicle age limits across Dorset have previously been determined by each of the five licensing authorities. As of 1 April 2022, there will be a single policy across the region replacing vehicle age limits with additional testing of vehicles. The removal of age limits should enable drivers and operators to purchase less expensive second-hand EVs, provided they meet the relevant testing requirements.

Dorset Council may also want to consider additional licensing policies to incentivise the switch to EVs, such as offering licence fee discounts to EVs, or disincentivise non-EVs, such as setting a date by which all new vehicles must be ultra-low or zero emission.

5. Popular vehicles

The most popular vehicle models currently used by taxi and private hire drivers in Dorset are shown in **Table 1**. Among both hackney carriage and private hire vehicles, the two most popular vehicle models are estate or saloon vehicles, followed by slightly larger multi-purpose vehicles (MPV) or minibuses.

This information is useful to understand the size and style of vehicles that are popular and, along with information collected through the survey, can help to indicate alternative EV models that may be suitable for these drivers. Recommended EV alternatives are outlined towards the end of this report in **Table 3**.

Table 1 – Summary of the most popular vehicle models licensed with Dorset Council as of 08 February 2022.

Hackney carriage vehicles		Private hire vehicles	
Vehicle model	Number licensed	Vehicle model	Number licensed
Skoda Octavia 	38	Ford Mondeo 	34
Ford Mondeo 	36	Mercedes E Class 	32
Ford Galaxy 	27	Ford Transit Tourneo 	27

Images sourced from www.whatcar.com/car-comparison, www.ford.co.uk/ and www.carbuyer.co.uk/.

Survey responses

A survey was distributed to drivers and operators licensed across Dorset via a link from Dorset Council. The survey was open between 12 January and 07 February 2022, with 91 completed responses. It is estimated the responses in this report represent just less than 10% of total licensed drivers and operators in the area[6,7]. There were many incomplete attempts[8], suggesting some individuals started the survey but did not complete it. Only completed surveys could be registered as a response.

Characteristics

Several questions were designed to help build a picture of the characteristics of taxi and private hire drivers and operators that responded to the survey. Where possible, this data has been compared with the current licensed fleet to determine to what degree those that responded to the survey are representative of Dorset's taxi trade.

1. Age

The results in **Figure 6** show that close to three quarters (71%) of survey respondents were older than 45 and a significant majority of them (47%) were older than 55. Individuals over the age of 55 are likely to be in or close to retirement by 2030 when the ban on sales of new petrol and diesel cars and vans will come into effect. Drivers in this age group are less likely to realise the long-term financial benefits of owning an EV compared to those with more years left in the trade.

Information on drivers' age was not available for the current licensed fleet, and therefore it is not possible to draw conclusions as to whether the sample of drivers who responded to the survey reflect the ages of all drivers licensed by the council.

[6] Based on the assumption that the number of drivers is equivalent to the total number of vehicles licensed with the council. However, these figures are expected to be different: some drivers may drive more than one vehicle, while some vehicles may be driven by more than one driver.

[7] As of 08 February 2022, there were 962 unique vehicles licensed in Dorset. Three of these vehicles were licensed with both a private hire and hackney carriage licence.

[8] 114 incomplete attempts in total. This figure is expected to be higher than the number of individuals who attempted to complete the survey and did not finish. Each time the link is visited then closed would register as an 'incomplete' attempt.

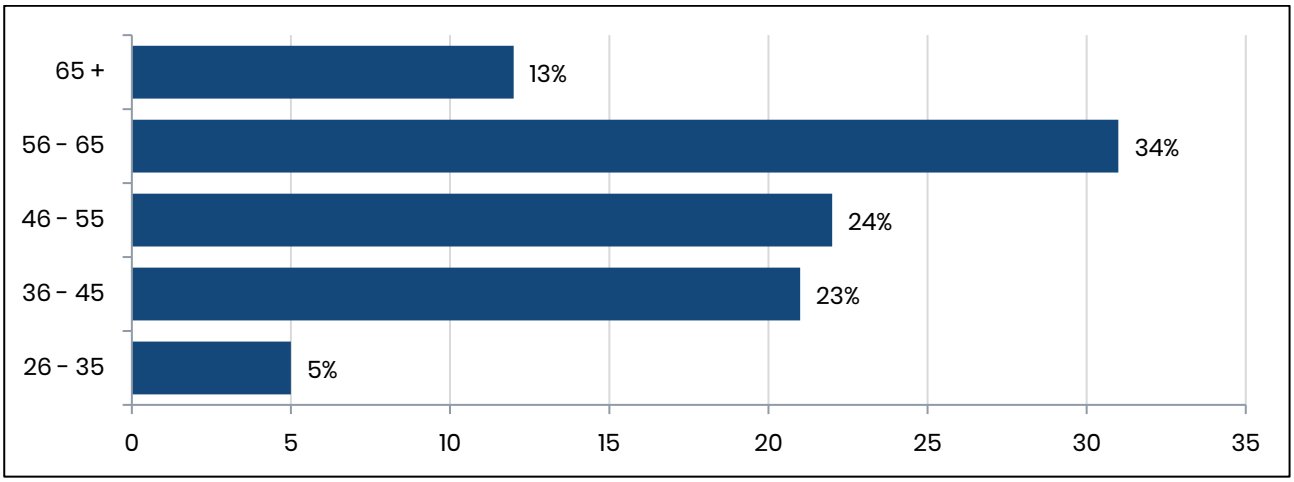

Figure 6 – Responses to the question: Please select your age bracket. (n=91)

2. Licence type

It is estimated that survey responses represent 7% of taxi and private hire drivers[6] and 13% of private hire operators[9] in the borough.

Figure 7 shows that licence types of the respondents to the survey are approximately in proportion with total vehicle and operator licences in Dorset. More than one in three respondents (35%) stated that they hold more than one type of licence. All those that selected they have a private hire operator licence also selected at least one type of driver licence. While dual licence drivers appear over-represented by the survey, vehicle licence data does not contain information on the number of drivers who hold a dual driver licence.

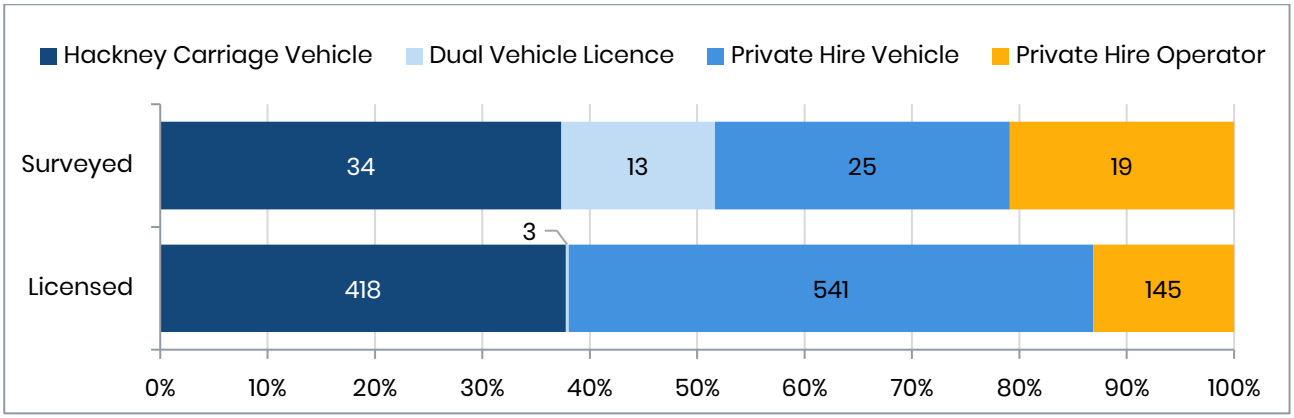

Figure 7 – Comparison between survey respondents' licence type (n=91) and total vehicle and operator licences in Dorset as of 08 February 2022 (n=1107). Please note: the total number of vehicles licensed with the council is expected to vary from the total number of drivers licensed. Data was not provided for total drivers licensed.

[9] It is possible that multiple representatives of the same private hire operator responded to the survey.

3. Vehicle ownership

Responsibility for replacing a vehicle and covering the associated costs will typically lie with the vehicle owner. As shown in **Figure 8**, 71% of drivers own their vehicle and will therefore have authority over switching to an EV. Private hire drivers and those with a dual licence are more likely to use a vehicle owned by their employer or operator.

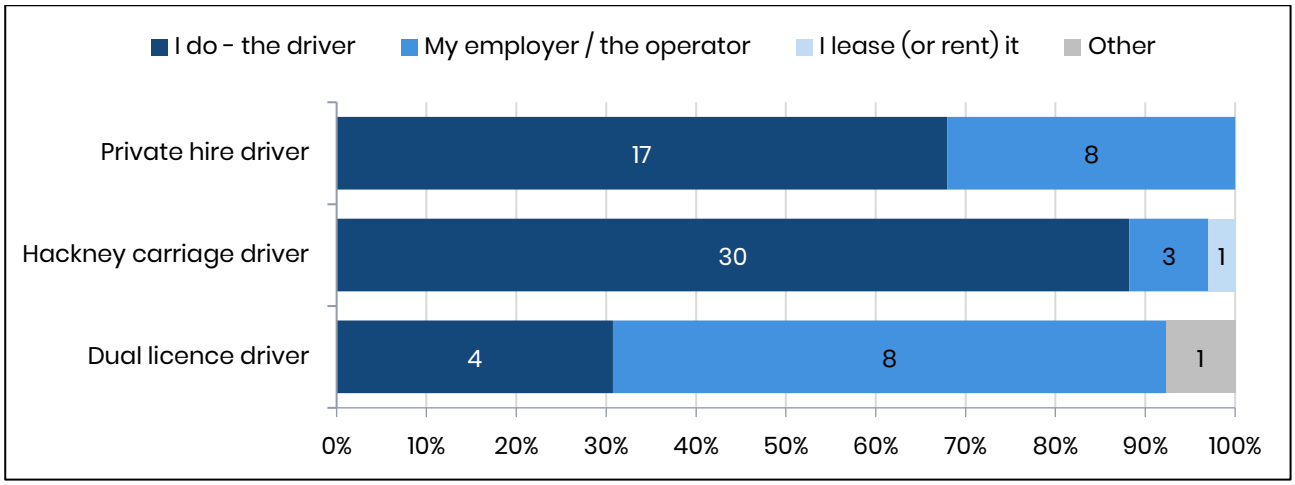

Figure 8 – Responses to the question: Who owns your vehicle? (n=72). Operators were not asked this question.

Private hire operators were asked how many vehicles were on their fleet. Five respondents stated they only operated one vehicle, as shown in **Figure 9**. Over half (53%) of operators run a very small fleet, between 2 and 5 vehicles. No operators had a fleet larger than 11-25 vehicles, suggesting the survey did not receive responses from Dorset's largest private hire operators.

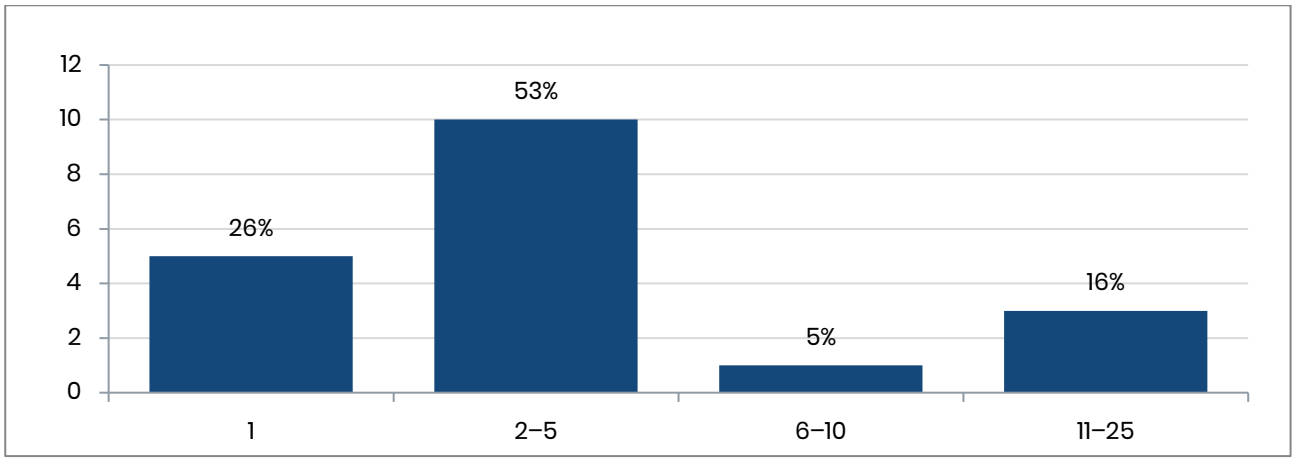

Figure 9 – Responses from operators to the question: How many vehicles do you operate? (n=19)

4. Vehicle fuel type

Drivers were asked to provide a vehicle registration mark (VRM) for their primary vehicle that they use for work. VRMs were then used to retrieve additional vehicle information from the DVLA

database, including fuel type. Rather than provide VRNs, operators were asked to list which fuel types are present within their current fleet of vehicles.

Figure 10 shows a breakdown of fuel type by licence type. Diesel is the most common fuel type across all licence types. All private hire drivers and four in five (82%) hackney carriage drivers stated they use a diesel vehicle. Just four drivers are currently using a plug-in vehicle, while just one operator stated they have plug-in vehicles in their fleet.

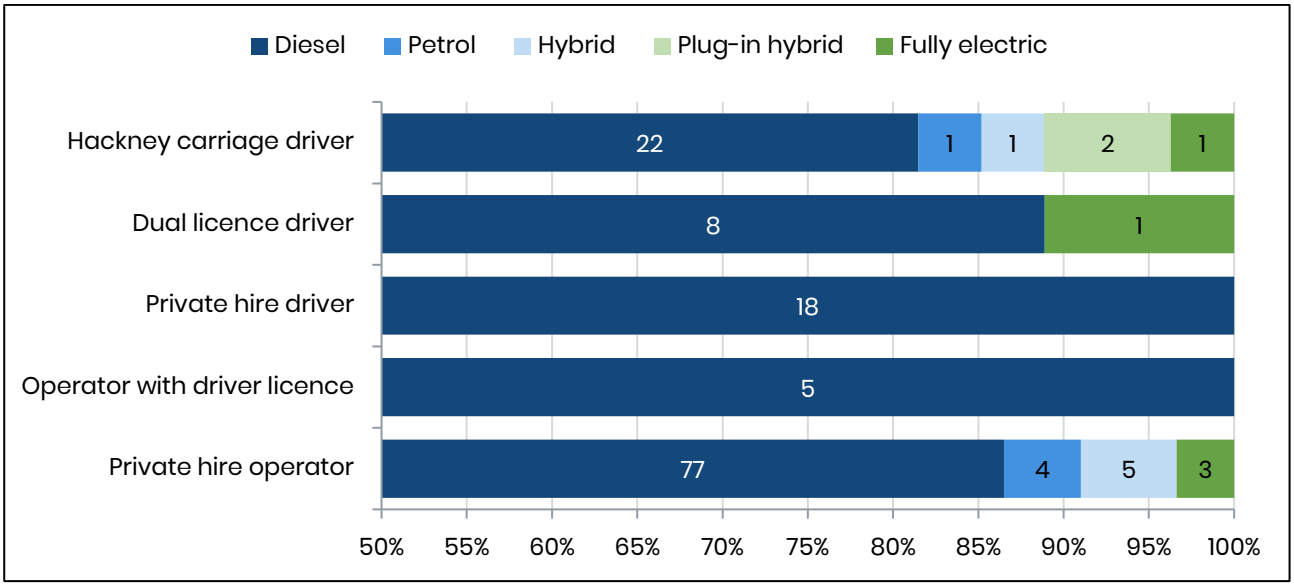

Figure 10 – Breakdown of vehicle fuel type by licence type. Number of responses = 73, total number of vehicles = 148. Please note, the horizontal axis of this graph does not start at 0%.

5. Vehicle location while not on shift

Figure 11 shows where drivers stated their vehicle is kept while not on shift. Just under half (48%) of the drivers surveyed stated their vehicle is kept on their driveway or in a garage. It is likely that these drivers would be able to install a dedicated home chargepoint and not need to rely on public charging infrastructure, depending on their daily mileage. The Electric Vehicle Homecharge Scheme (EVHS) could provide these drivers with up to £350 off the cost of purchasing and installing a home charging point[10]. Those living in rented accommodation would require permission from their landlord before installing a home chargepoint.

[10] Please note, from April 2022, the EVHS will no longer be open to homeowners who live in single-unit properties such as bungalows and detached, semi-detached or terraced housing. The scheme will remain open to those who live in flats and people in rental accommodation.

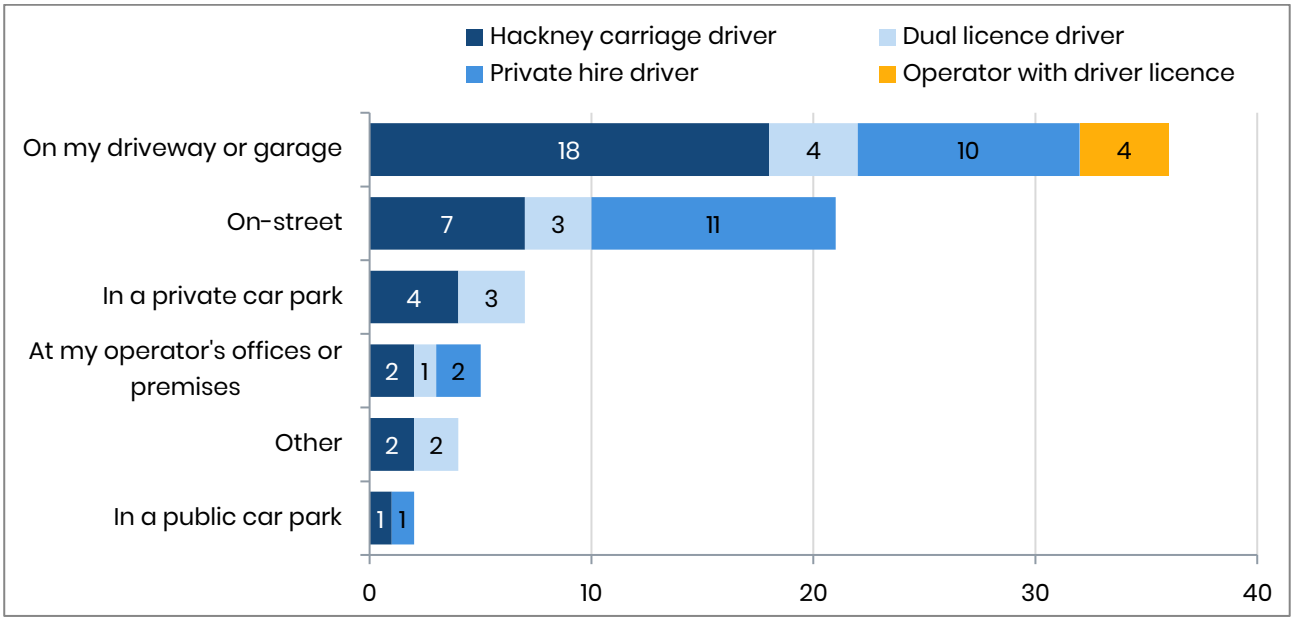

Figure 11 – Responses to the question: Where is your vehicle kept when not on shift? (n=75) Operators with more than one vehicle were not asked this question.

Nearly a third of drivers (31%) who responded to the survey park their vehicle in public locations: either on-street or in a public car park. Dorset Council can support these taxi and private hire drivers, alongside any other residents who park their vehicle in a public location, by installing additional public residential chargepoints either on-street or in council-owned car parks. These installations may be eligible for funding through the On-Street Residential Chargepoint Scheme (ORCS). Further details are provided in the 'Further support' section on p.38.

Operators were also asked where their vehicles are kept when not on shift. As shown in **Figure 12**, nearly a third (29%) stated that vehicles remain at the operator's office or premises. Any vehicles parked at an operator's premises while not on shift could benefit from slow charging facilities at that site. Operators may want to consider the Workplace Charging Scheme to support the installation of chargepoints.

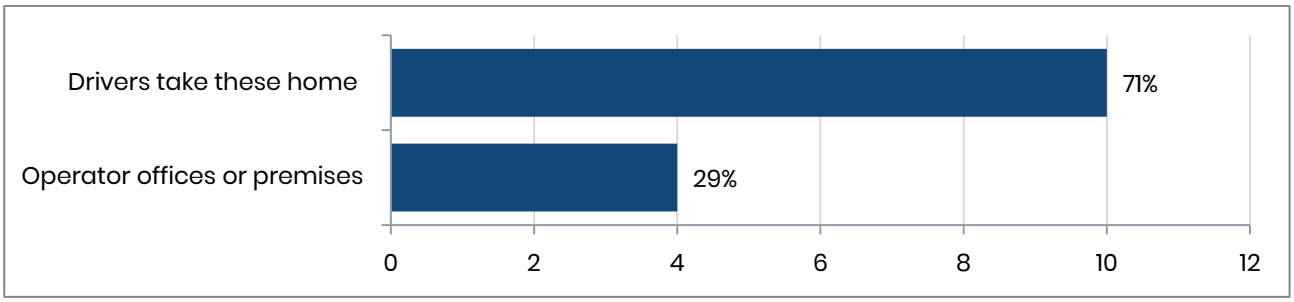

Figure 12 – Responses from operators to the question: Where are your vehicles kept when not on shift? (n=14)

Driving patterns

This section explores the different driving patterns extracted from the survey data. Drivers and operators were asked about typical daily mileages and down-time during shifts. Drivers were also asked to provide details of regular long-distance journeys, as well as taxi ranks they commonly use (where applicable). This information will help to build a picture of which drivers could feasibly switch to an EV as well as indicating locations with public charging demand.

1. Daily mileage

Drivers were asked to provide an estimate of their typical daily mileage (for personal and business purposes), while operators were asked to provide this as an average for their fleet. To minimise inaccurate responses, individuals were prompted to leave this question blank if they did not know their mileage. The average (median) typical daily mileage was 160 miles. A broad range of daily mileages were received, from 70 to 520 miles. **Figure 13** shows that almost two thirds (63%) travel less than 200 miles a day, while nearly one in five drivers (18%) travel at least 250 miles a day.

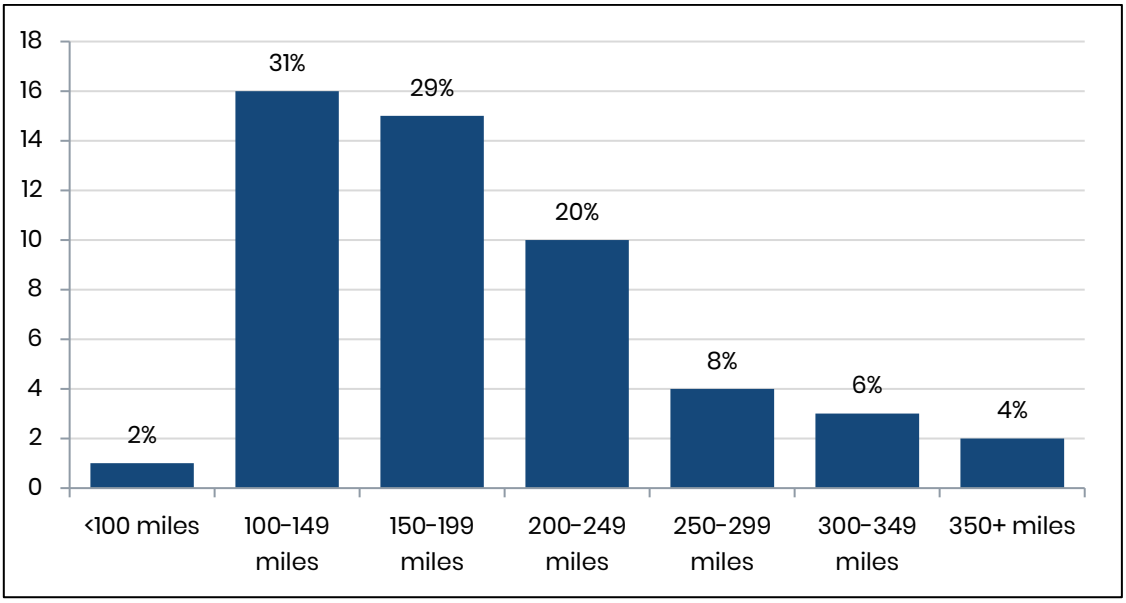

Figure 13 – Summary of estimated daily mileage provided by drivers and operators. (n=51)

Figure 14 shows a breakdown of estimated daily mileage by licence type. Based on the sample of survey responses, private hire and hackney carriage drivers in Dorset appear to have similar typical daily mileages, with roughly one in four drivers stating they travel over 200 miles a day. Two in three dual licence holders surveyed stated they complete trips totalling more than 200 miles in a day. However, fewer responses were received from dual licence holders, making it difficult to draw comparisons. Private hire operators who responded to the survey appeared to quote higher average daily mileages compared to individual private hire drivers.

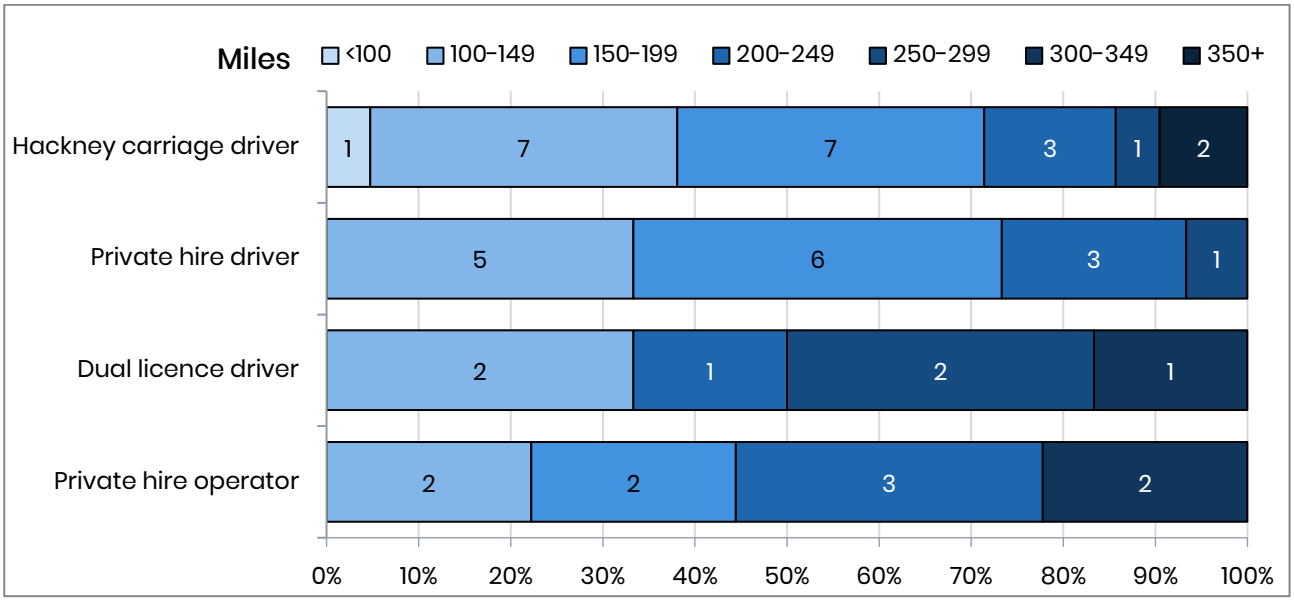

Figure 14 – Breakdown of daily mileage by licence type. Combination of responses from drivers and operators. (n=51)

The typical range of an EV is dependent on the type of vehicle, as well as other conditions including speed, style of driving, weather, and route conditions. The suitable EVs identified at the end of this report (**Table 3**) have a real-world range of 209 miles (cars) and 115 miles (people carriers or MPVs). Longer range MPVs are now available which may be suitable as a base for a wheelchair accessible vehicle (WAV) conversion.

As shown in **Figure 13**, nearly two in three drivers travel less than 200 miles a day and therefore may not need to top-up their vehicle during a shift. These drivers may be able to rely on slow charging at home or on-street near their home, provided there is suitable infrastructure available. Based on mileages provided in the survey, a significant number of drivers may also need to use public infrastructure to charge an EV during their shift, particularly those who will require larger MPVs.

2. Annual mileage

Based on an average daily mileage of 160 miles from the survey, it is estimated that taxi and private hire drivers in Dorset would have an average annual mileage of roughly 40,000 miles[11]. Additional mileage data was collected using the gov.uk MOT service for 61 VRMs provided by drivers during the survey. An **average annual mileage of 26,661 miles** was estimated between 01 January 2021 and 31 December 2021. 17 vehicles were either first registered or purchased by their current owner after 01 January 2021 and were therefore excluded from annual mileage analysis

[11] Based on an average daily mileage of 160 miles, driven 5 days a week for 50 weeks of the year.

to avoid distorting the results.

Figure 15 shows the average and maximum annual mileage for each licence type, based on MOT data. Hackney carriage vehicles appear to travel further on average than private hire vehicles. While average annual mileages based on MOT data are significantly lower than the average annual mileage estimated based on survey responses, there are still some vehicles that reported mileages in excess of 40,000 miles a year.

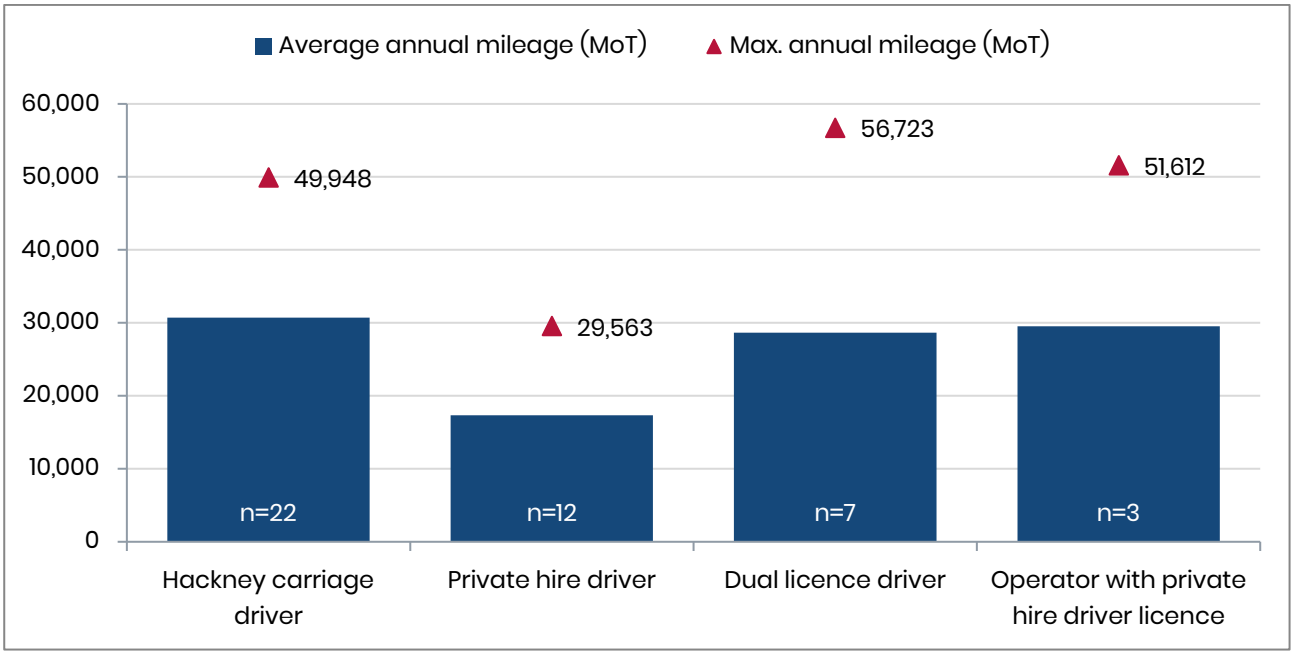

Figure 15 – Estimated annual mileage by licence type, based on information collected via the gov.uk MOT service for 44 VRNs. Mileage data collected for the period 01 January 2021 – 31 December 2021.

3. Frequent long-distance destinations

Drivers who regularly take long-distance fares may be concerned about not having enough range in an EV to complete these journeys. Drivers were asked to name their three most frequent long-distance fare destinations. **Figure 16** shows that the most common destinations were London Heathrow and London Gatwick Airports, both of which were mentioned considerably more than the next most common response (Bristol). Figures for Bristol, Southampton, London, and Exeter represent responses that mentioned a specific location within that city (e.g., cruise terminal, docks, or the port in Southampton), as well as mentions of the city itself.

Heathrow Airport has announced plans to introduce an Ultra Low Emission Zone (ULEZ) in 2022 which will apply to private hire vehicles (but not taxis)[12]. Bristol is also set to introduce a Clean Air

[12] Further information on the planned Heathrow ULEZ available at: https://mediacentre.heathrow.com/pressrelease/details/81/Corporate-operational-24/11116.

Zone (CAZ) in 2022 which will affect taxis and private hire vehicles[13]. As highlighted in **Figure 3**, more than half (54%) of all vehicles licensed in Dorset are not currently compliant with CAZ restrictions and may face charges when these planned zones come into effect. Drivers who frequently travel to London, which is already covered by an Ultra Low Emission Zone[14], may also face an additional daily charge if their vehicle is not CAZ compliant.

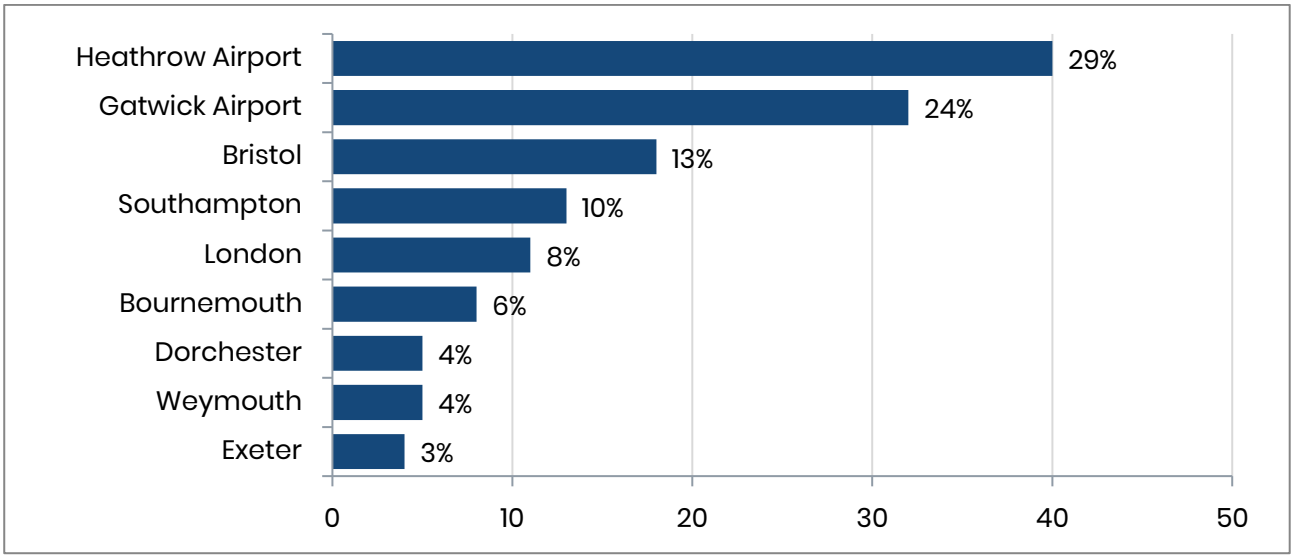

Figure 16 – Responses to the question: Please tell us your three most frequent long-distance fare destinations. Responses mentioned fewer than four times have been omitted here. (n=73 respondents; 136 answers shown here).

The distance from Dorchester to either London Heathrow or Gatwick Airport is more than 100 miles one-way. To build confidence among drivers who have an EV, or plan to switch, Dorset Council may wish to highlight charging facilities available at, or along the route to, popular destinations. This may provide drivers with greater assurance that they will be able to top-up the charge of an EV when carrying out long-distance trips. The council may also want to consider providing drivers with guidance on using chargepoint location websites or apps.

4.Down-time

Down-time during a shift can be an opportunity for drivers to top-up the charge of an EV. By understanding how much down-time, on average, drivers have during their working hours, it is possible to see what types of chargepoints could be used to top-up batteries. **Figure 17** reveals that three in four drivers (75%) stated they have at least 30 minutes of down-time on an average day, while 50% have over an hour of down-time. All operators surveyed stated that drivers had at

[13] Further information on the planned Bristol CAZ available at: https://www.bristol.gov.uk/streets-travel/bristol-caz.

[14] Further information on the London ULEZ, https://tfl.gov.uk/modes/driving/ultra-low-emission-zone.

least 45 minutes of down-time in a shift.

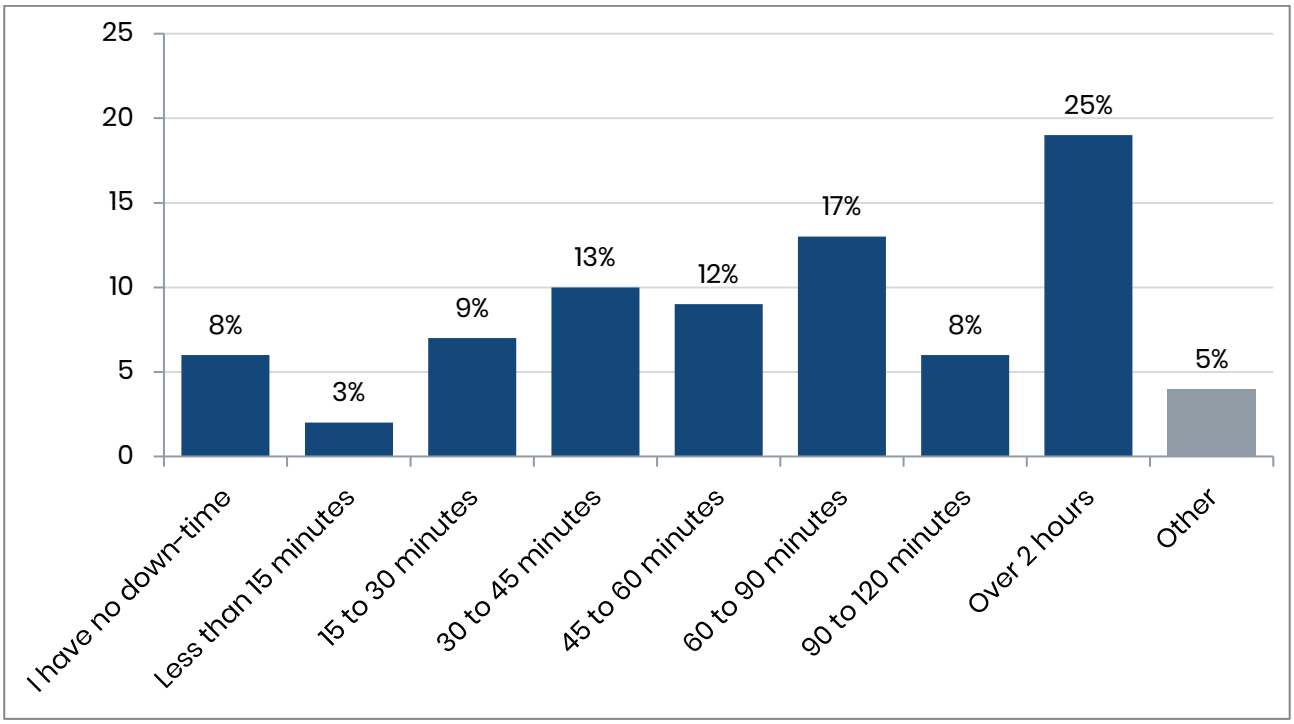

Figure 17 – Responses to the question: On a typical, approximately how much down-time do you have during your shifts (including breaks)? (n=76)

In just 45 minutes, it is estimated that a 50 kW rapid chargepoint could provide between 74 and 125 miles of additional range to the alternative EVs identified in **Table 2**[15]. Drivers may not always be able to plug-in an EV for the full extent of their down-time; some time may need to be spent travelling to and from a suitable charging location and a chargepoint may not immediately be available. However, **just 15 minutes connected to a 50 kW rapid chargepoint could add more than 25 miles** to the vehicles presented in **Table 2**. This may provide drivers with enough additional range to reach the end of their shift or, for those with particularly high mileages, sustain the vehicle until the next opportunity to charge.

Eight drivers (11%) stated that they have less than 15 minutes of down-time during a typical shift. If these drivers also have high daily mileages, they may struggle to switch to an EV without some changes to their current behaviour, as they are likely to rely on charging during their shift.

[15] Vehicle consumption rates (Wh/mile), taken from the EV Database, have been used to estimate the miles per hour delivered by a 50 kW rapid chargepoint. It has been assumed that a 50 kW chargepoint is able to deliver, on average, an 80% (40 kW) charge rate. Actual figures will depend on several factors, including the state of charge of the battery, the temperature and the vehicle's charging profile.

Table 2 – Estimated range added in various time periods using a 50 kW chargepoint for six alternative EVs.

Vehicle	Range added using a 50 kW chargepoint (in miles)			
	60 min	45 min	30 min	15 min
Skoda Enyaq iV 60	143	107	71	36
MG MG5 EV	148	111	74	37
Ford Mustang Mach-E (75.7 kWh)	127	95	63	32
Tesla Model 3	167	125	83	42
Citroen e-SpaceTourer	99	74	49	25
Peugeot e-Rifter	107	80	53	27

5. Charging infrastructure

Raising awareness of existing infrastructure can help to shift drivers' perceptions of access to chargepoints. As of 1 January 2022, there were 215 publicly available EV charging devices in Dorset (including Bournemouth, Christchurch and Poole), 50 of which were rapid chargepoints[16]. **Figure 18** and **Figure 19** show the distribution of chargepoints according to the EV charging point platform Zap-Map. While there is good coverage of fast charging across the county, all devices are concentrated in major towns, and there are fewer chargepoints in smaller towns and more rural areas.

The council is advised to consider whether there is scope to install additional infrastructure to support taxi and private hire drivers as they make the switch. The council is also advised to engage with chargepoint operators regarding the outcomes of the survey, informing them of any council plans to encourage EV uptake amongst taxi and private hire drivers. Some operators are currently looking for sites to install rapid chargepoints and may be in a position to offer incentives for taxi or private hire drivers using their network.

[16] According to Department for Transport statistics: *Electric vehicle charging devices by local authority, January 2022*. Available here: https://www.gov.uk/government/statistics/electric-vehicle-charging-device-statistics-january-2022.

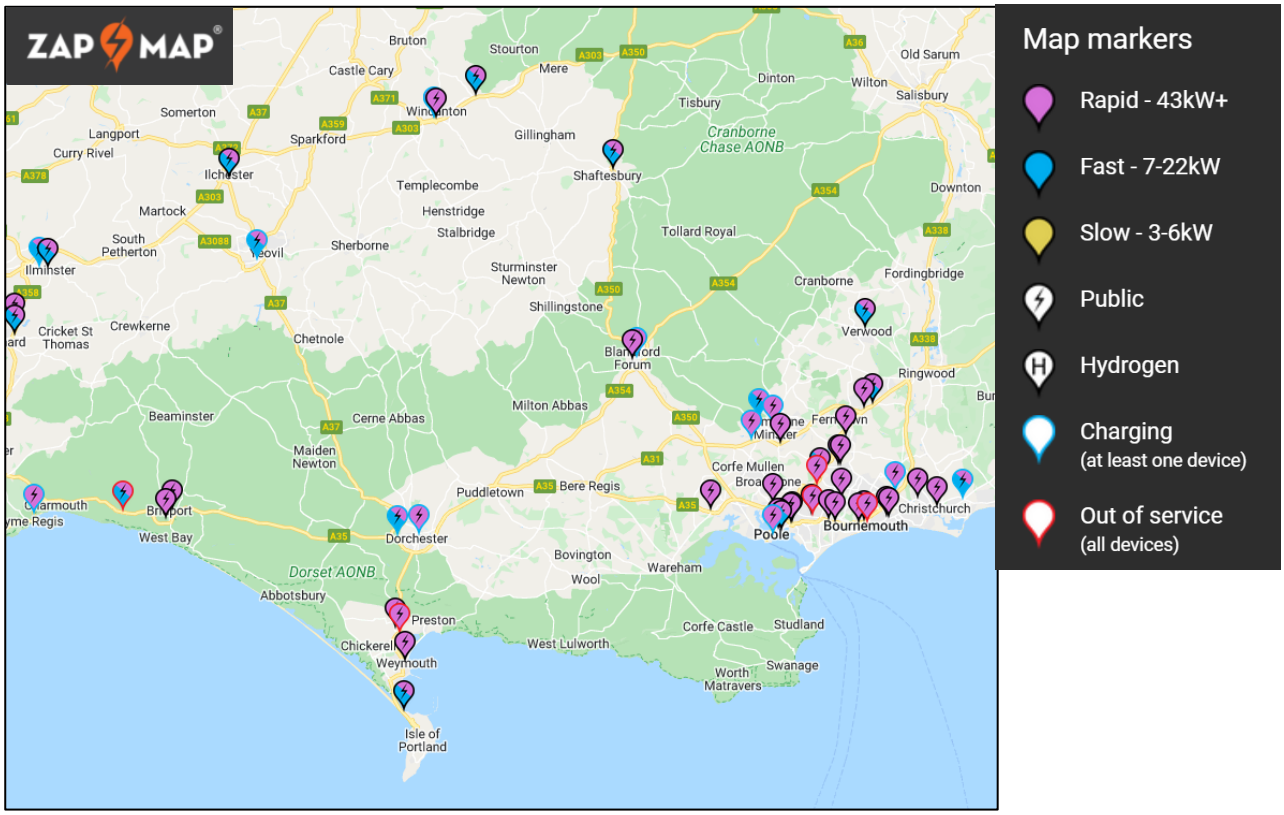

Figure 18 – Map taken from Zap-Map showing public rapid (50kW+) chargepoints across Dorset. Date: 03 March 2022.

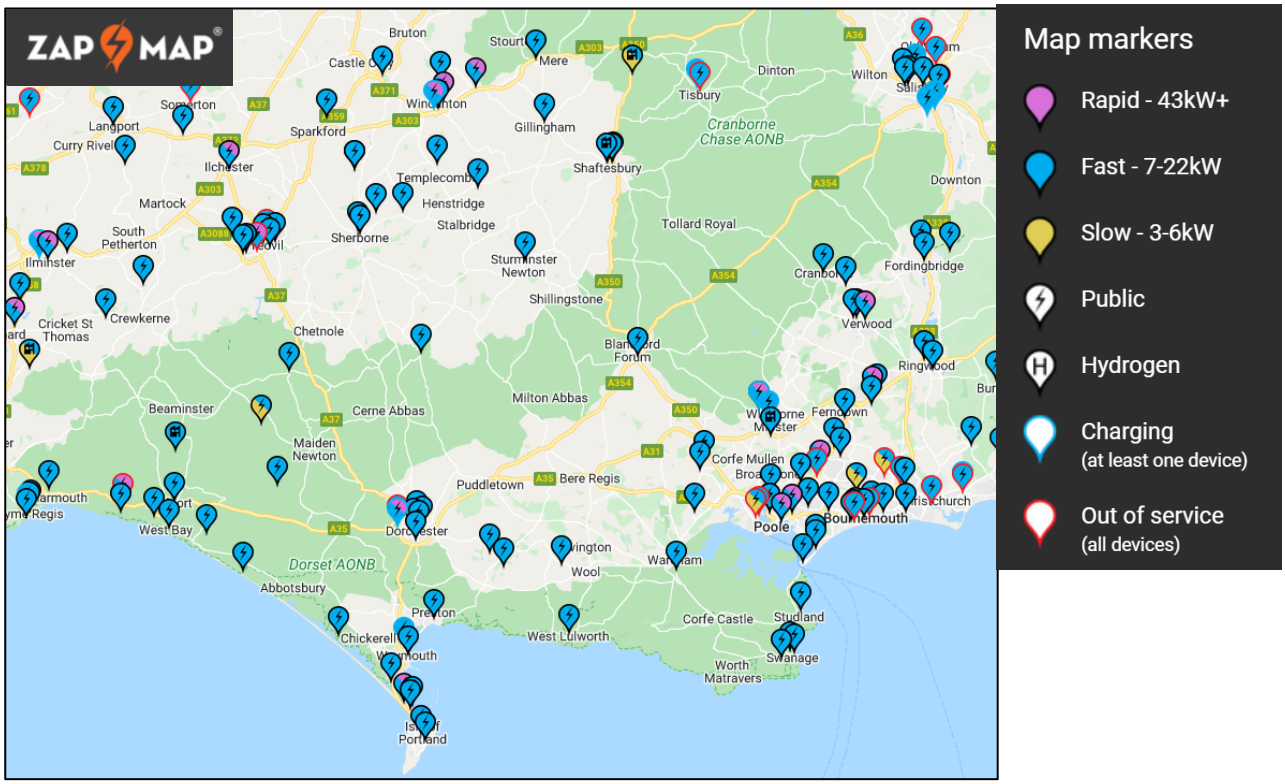

Figure 19 – Map taken from Zap-Map showing public fast (7-22kW) chargepoints in Dorset. Date: 03 March 2022.

6. Popular taxi ranks

Drivers with a hackney carriage licence were asked which three taxi ranks they use most frequently. 40 taxi ranks across Dorset were available for drivers to select. Responses are shown in **Figure 20**. Of the ten most popular ranks: three are in Weymouth (including the top two); two in both Dorchester and Bridport; and one each in Shaftesbury, Blandford Forum and Gillingham.

Identifying common pick-up locations can be an effective way of choosing sites to install chargepoints which are likely to be well-used and convenient for taxi drivers. The council may wish to install dedicated rapid chargepoints for taxis in parking bays or car parks close to these popular locations.

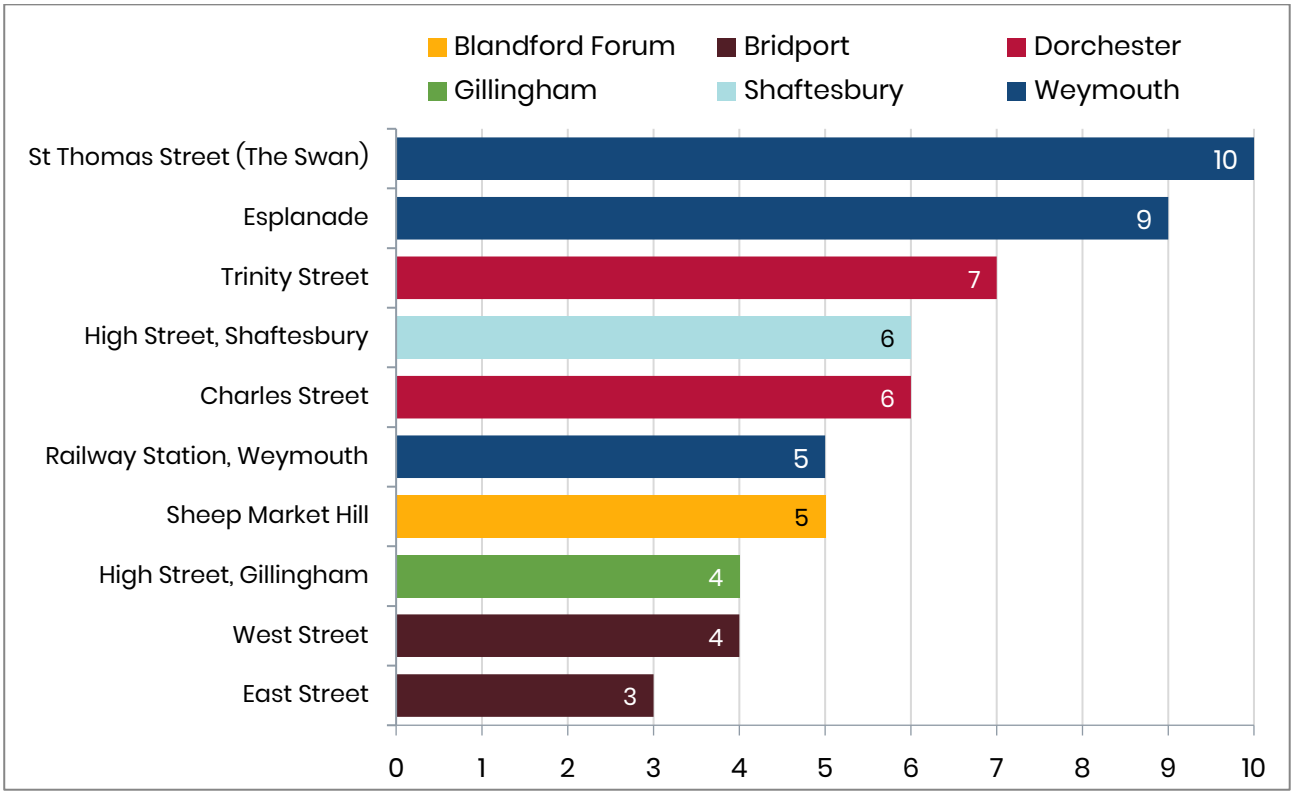

Figure 20 – Responses to the question: Please select the three taxi ranks that you use most often. Ranks that were selected fewer than three times have been omitted here. (n=33 respondents; 59 answers shown here)

The survey did not capture information from private hire drivers on locations where they typically stop for down-time between journeys. However, the survey did ask private hire drivers where they typically go between fares, as shown in **Figure 21**. There is an even distribution between private hire drivers who return to a base and move from job to job. For some this can vary, depending on the situation.

Those drivers who return to a depot may benefit from rapid charging based at their depot between jobs. The council may want to look at how operators can be supported to install appropriate infrastructure at their depots. Drivers who do not go to a depot may be reliant on

access to public charging infrastructure, should their battery require a top-up between jobs.

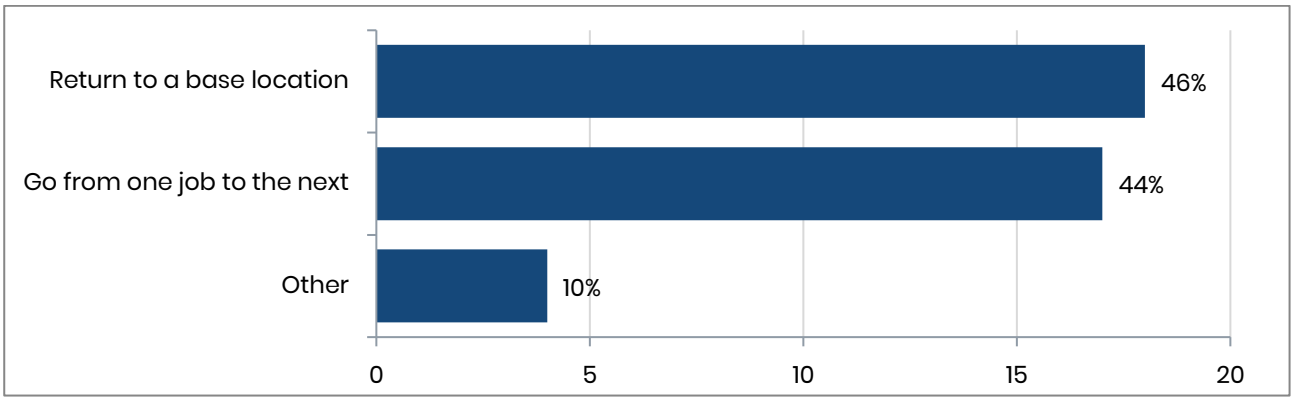

Figure 21 – Responses from private hire drivers to the question: Between fares, do you typically return to base or go to your next job? (n=39)

Opinions on EVs

The opinions of drivers and operators are crucial for understanding where further investment is needed to overcome barriers, real or perceived, such as charging infrastructure provision. We have explored some key considerations around switching to EV in the survey. While conclusions drawn here reflect the drivers and operators who responded to the survey, the opinions of this sample should provide a useful indicator of the wider trade's views on EVs.

1. Switching to an EV

Drivers and operators were asked whether they would consider switching to fully electric vehicles for work and in what time frame, as shown in **Figure 22**. While nearly one in five (19%) planned to switch in the next 5 years or had already done so, the majority (45%) of respondents were unsure about switching. One in four (26%) said that they will never buy or switch to an EV. The next section explores key barriers to switching to understand the underlying reasons why drivers are uncertain about switching or feel they will never switch.

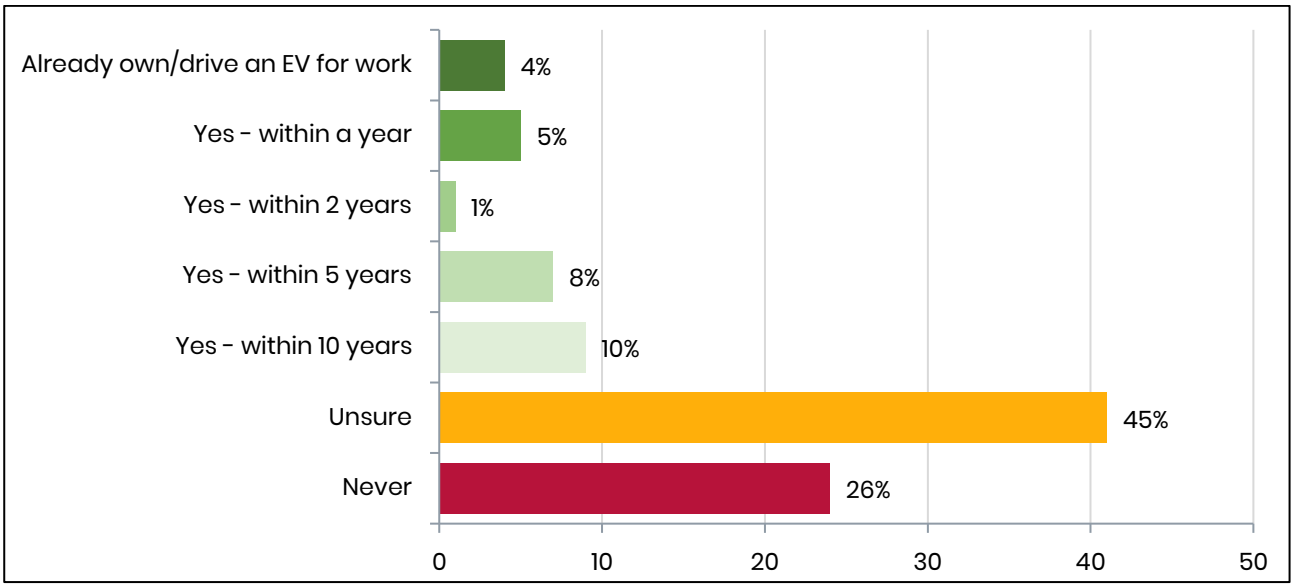

Figure 22 – Responses to the question: Are you thinking about buying or driving a pure electric vehicle(s) for your work? (n=91)

2. Barriers to switching

Survey respondents were asked to select one statement they felt was the biggest barrier to switching to an EV. As shown in **Figure 23**, most respondents claimed that EVs are too expensive, followed by concerns about the range of EVs. More than one in eight (13%) said their biggest barrier was a lack of places to charge. The following sections consider each of the top three barriers in turn.

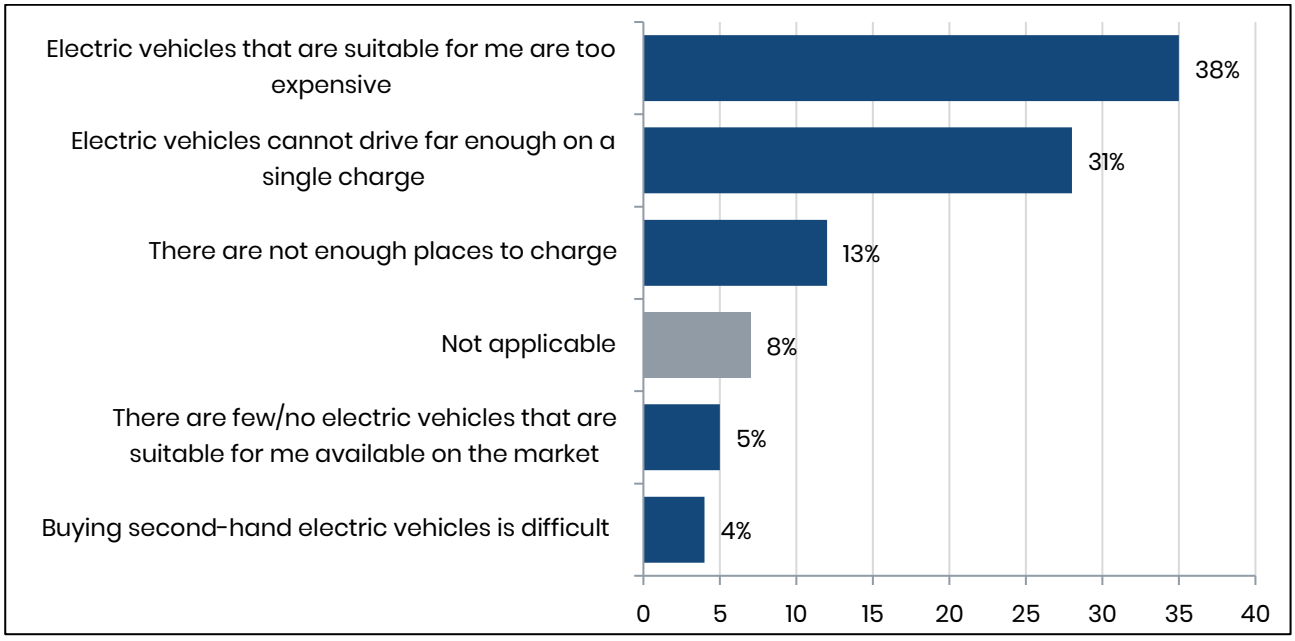

Figure 23 – Responses to the question: Which of these do you feel is the biggest barrier to switching to an electric vehicle? (n=91)

Barrier 1 – Financial concerns

Nearly two in five (38%) stated that the cost of suitable EVs is their biggest barrier to switching. While EVs are typically considerably cheaper to run than petrol or diesel equivalents, the increased upfront cost of purchase has put them out of reach for many drivers. Prices of EVs will continue to fall and are expected to reach parity (in terms of cost to manufacture) with fossil-fuel vehicles by 2027 at the latest, according to some industry analysts[17]. In the meantime, grants and subsidies, such as the plug-in grant, can help to provide the financial case for drivers switching to an EV. The council may also want to consider additional financial incentives to support the business case of switching to an EV. This could include offering drivers of EVs free or subsidised licensing fees, permits for certain taxi ranks, or parking in public car parks.

The second-hand vehicle market also offers a more affordable alternative for drivers looking to switch to an EV. While the council cannot directly impact the second-hand vehicle market, there is room for education around visiting reputable retailers and dealerships[18] and what to look for when purchasing.

Barrier 2 – Range anxiety

Just less than a third (31%) stated that the range of EVs on a single charge is the biggest barrier to

[17] Study conducted by BloombergNEF commissioned by Transport & Environment (T&E), published May 2021. Applies to light vehicle classes up to and including small vans.

[18] Drivers can search for *Electric Vehicle Approved* (EVA) vehicle retailers and dealerships on the EVA website: https://www.evapproved.co.uk/find-an-eva-member/.

switching. Both within and outside of the taxi and private hire trade, many drivers are concerned that EVs cannot drive far enough on a single charge. This is known as experiencing *range anxiety*. Improvements in technology in recent years have seen a rapid improvement in the average range of EVs. This development is illustrated in **Figure 24** which shows the growth in the number of EV car models available and the average range of these vehicles in the five years from 2015 to 2020.

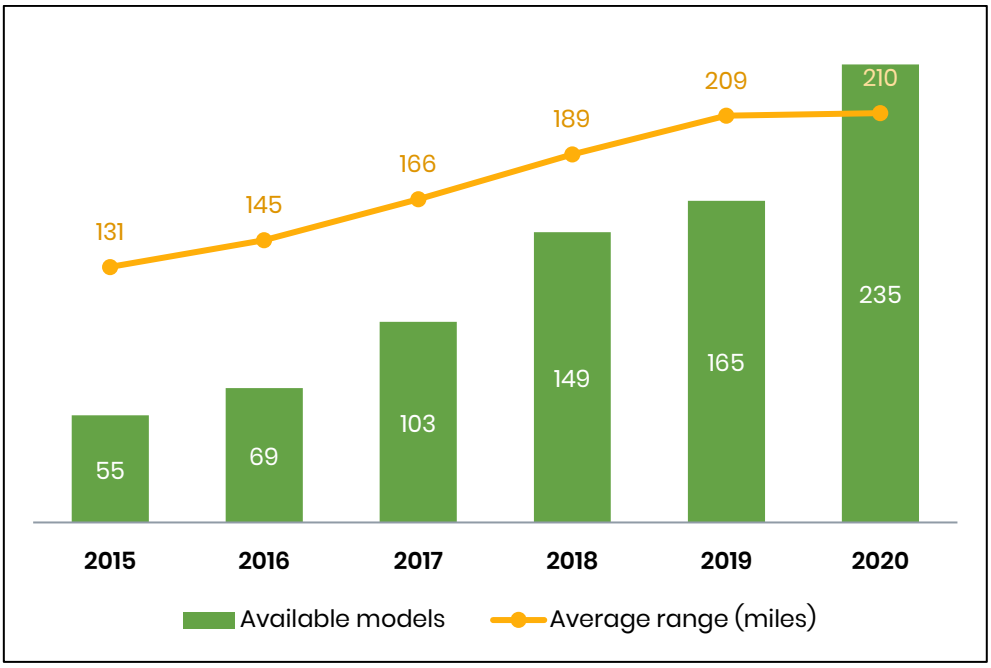

Figure 24 – Number of battery electric car models available globally and their average range, 2015-2020. Data from IEA, Paris. Link to source.

Barrier 3 – Lack of charging infrastructure

More than one in eight (13%) stated the fact there are not enough places to charge is the biggest barrier they face to switching to an EV. This barrier is closely associated to concerns about range and can be partly addressed by ensuring drivers and operators are fully aware of real-world mileages of EVs. Many drivers may not need to rely on public charging during a typical shift, which may help to ease concerns over a lack of places to charge.

Public charging, however, will still need to support those with high mileages, as well as increasing confidence among all drivers. While this survey has asked for typical daily mileages, even those with low mileages may have days where they travel considerably further. Convenient and accessible public charging will be crucial to ensure all drivers can easily find a place to re-charge should they require it. The council have an opportunity to build confidence in charging infrastructure by encouraging the private market to invest in the local area as well exploring options to install rapid and residential chargepoints to support taxi and private hire drivers.

3. Factors affecting EV opinions

Exploring trends between opinions on switching to an EV and responses to other questions in the survey can help to reveal barriers that may be preventing drivers and operators from switching. Trends with all questions were explored. Results have not been presented in cases where significant patterns were not observed.

Biggest barrier

As shown in **Figure 25**, the biggest barriers for those that already own or drive an EV, or are considering switching, are a lack of places to charge and the cost of purchasing an EV. Concern around cost remains the biggest barrier for those that are unsure about switching, however range anxiety has become more common: more than one in four who are unsure about switching stated this was their biggest barrier. Nearly two in three respondents who said they will never switch to an EV said concern about range is their biggest barrier to switching.

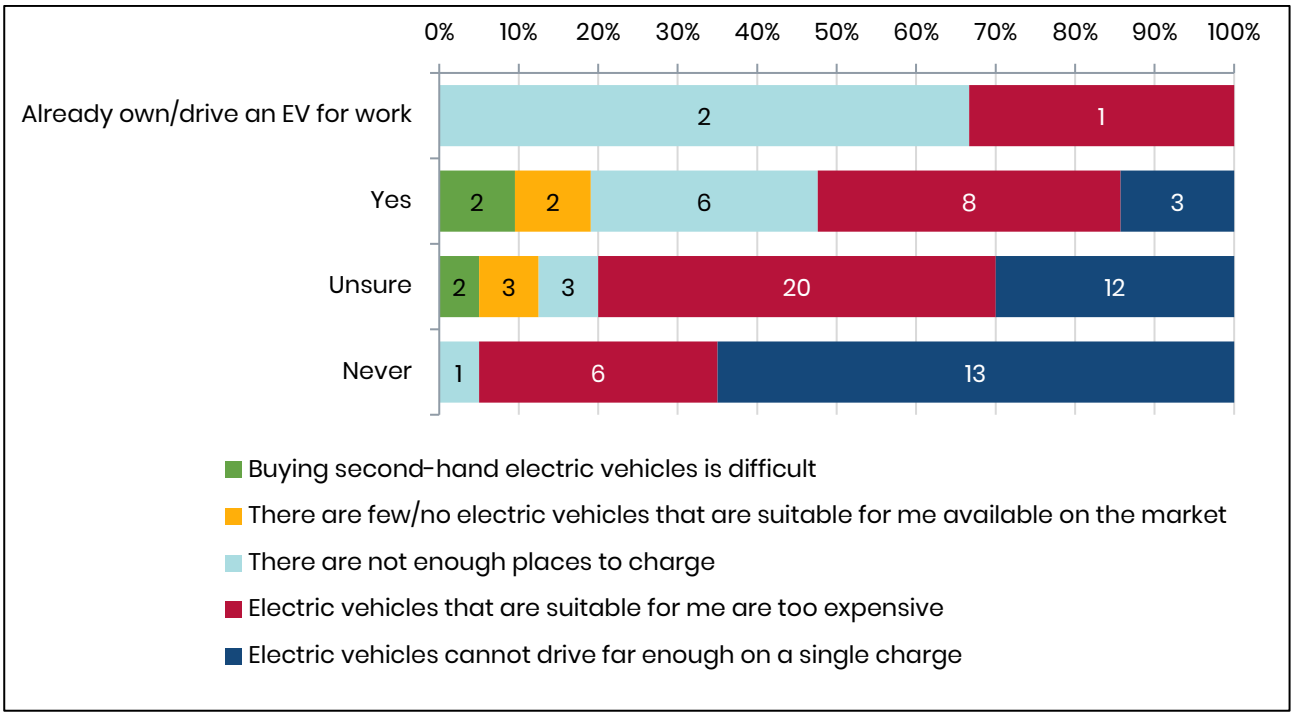

Figure 25 – Comparison between opinions on switching to an EV (grouped responses) and the biggest barrier to switching selected. (n=84)

Licence type

Figure 26 shows that private hire drivers were more likely to say they are planning to switch to an EV than hackney carriage drivers. Hackney carriage drivers may find it more difficult to switch to an EV because of the larger wheelchair accessible vehicles they often drive. Currently the number of EV alternatives suitable for a wheelchair conversion are limited; those that are available typically have a higher cost and lower range than estate or hatchback EVs.

In Dorset, hackney carriage drivers also tend to have higher mileages than private hire drivers which may explain why fewer hackney carriage drivers are planning to switch. While very high mileages can be a barrier to switching, higher mileages also improve the business case for switching as the potential savings from operational costs will be greater.

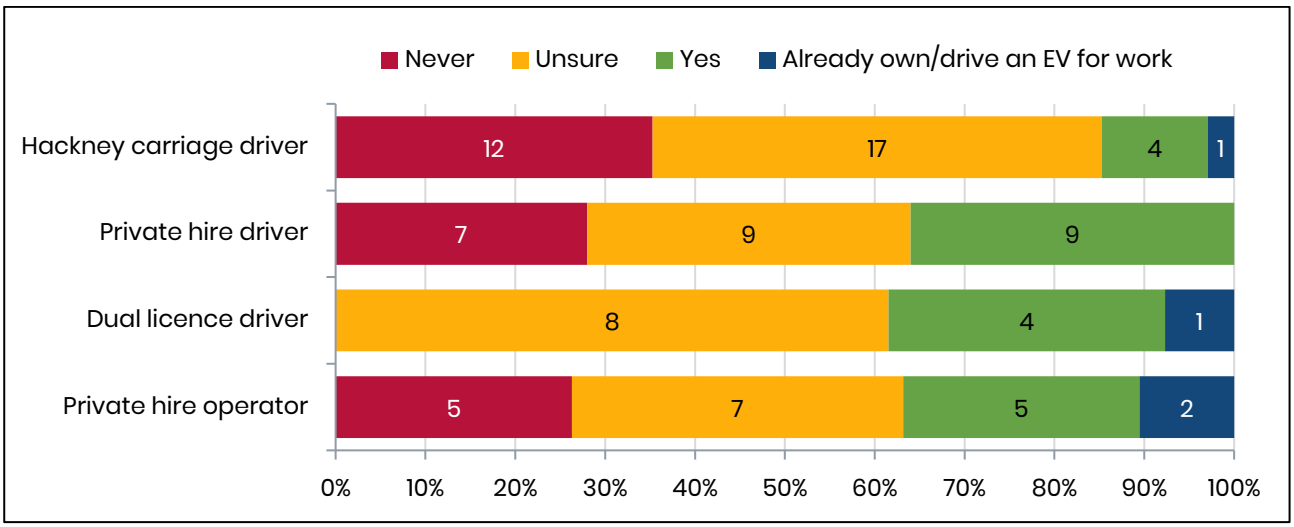

Figure 26 – Comparison between licence type and opinions on switching to an EV (responses have been grouped). (n=91)

Age group

While there was not a strong trend between age group and opinions on switching, younger respondents were more likely to say they are planning to switch, as shown in **Figure 27**. Those that already own or drive an EV for work purposes are all aged between 46 and 65. This may be due to typically high upfront costs of switching to an EV and the benefit of having access to off-street parking at home, which can make owning an EV less accessible for younger drivers.

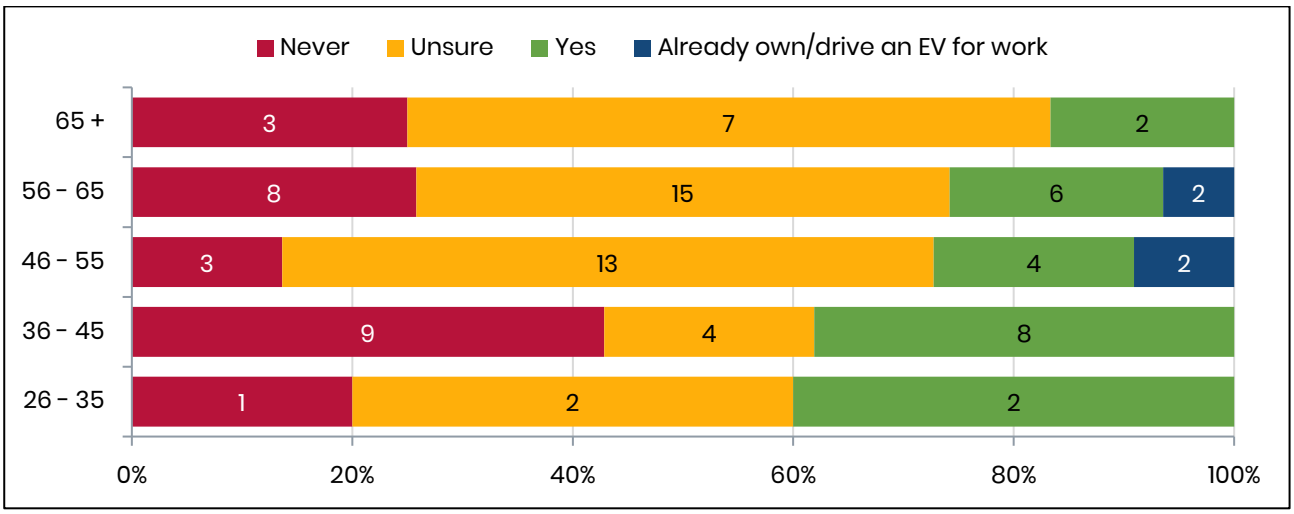

Figure 27 – Comparison between age and opinions on switching to an EV (responses have been grouped). (n=91)

Vehicle ownership

Drivers that own their own vehicle were more likely to say they would never switch to an EV compared to drivers that use their employer or operator's vehicle. This suggests that drivers may not feel the financial operational benefits of owning an EV do not outweigh the initial upfront costs of purchase. Drivers who do not own their vehicle may not need to cover these upfront costs and may therefore look on the benefits of switching more favourably.

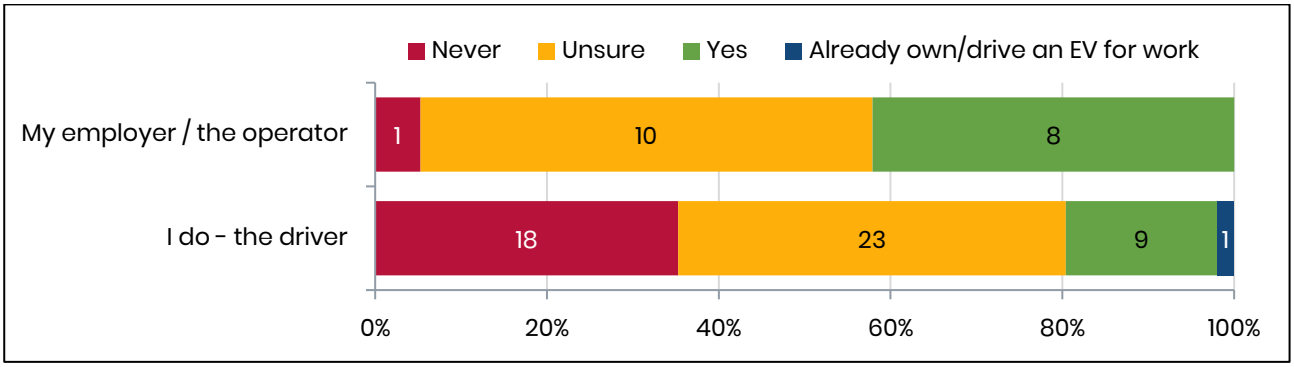

Figure 28 – Comparison between vehicle ownership and drivers' opinions on switching to an EV (responses have been grouped). (n=70)

4. Agreement with EV statements

Drivers and operators were asked to select to what degree they either agree or disagree with nine statements relating to EVs; six statements are commonly quoted barriers to switching to an EV and three are potential benefits of switching to an EV.

Barriers

As shown in **Figure 29**, nearly nine in ten respondents agree[19] that there are currently not enough places to charge an electric vehicle and that suitable EVs are too expensive. As discussed in section 2 (p.26), these are two of the most frequently quoted barriers.

Just over half (53%) agree[19] that there are no electric vehicles that are suitable for them available on the market. Agreement with this barrier was the lowest of all the barrier-type statements in **Figure 29**. As shown in **Figure 24** (above), the number of electric car models available globally has increased more than fourfold over the last five years. Some drivers may have observed the growing availability of models, particularly hatchback and saloon models. However, others are likely to still feel that the market is lacking, particular for larger WAVs. The interpretation of what constitutes a 'suitable' vehicle will also vary from one individual to another. This statement was intended to cover the features of the vehicle, such as size and range, excluding the price point. However, it is reasonable to assume some may have considered cost as a factor contributing to

[19] Those that selected 'Totally agree' or 'Somewhat agree'.

vehicle suitability.

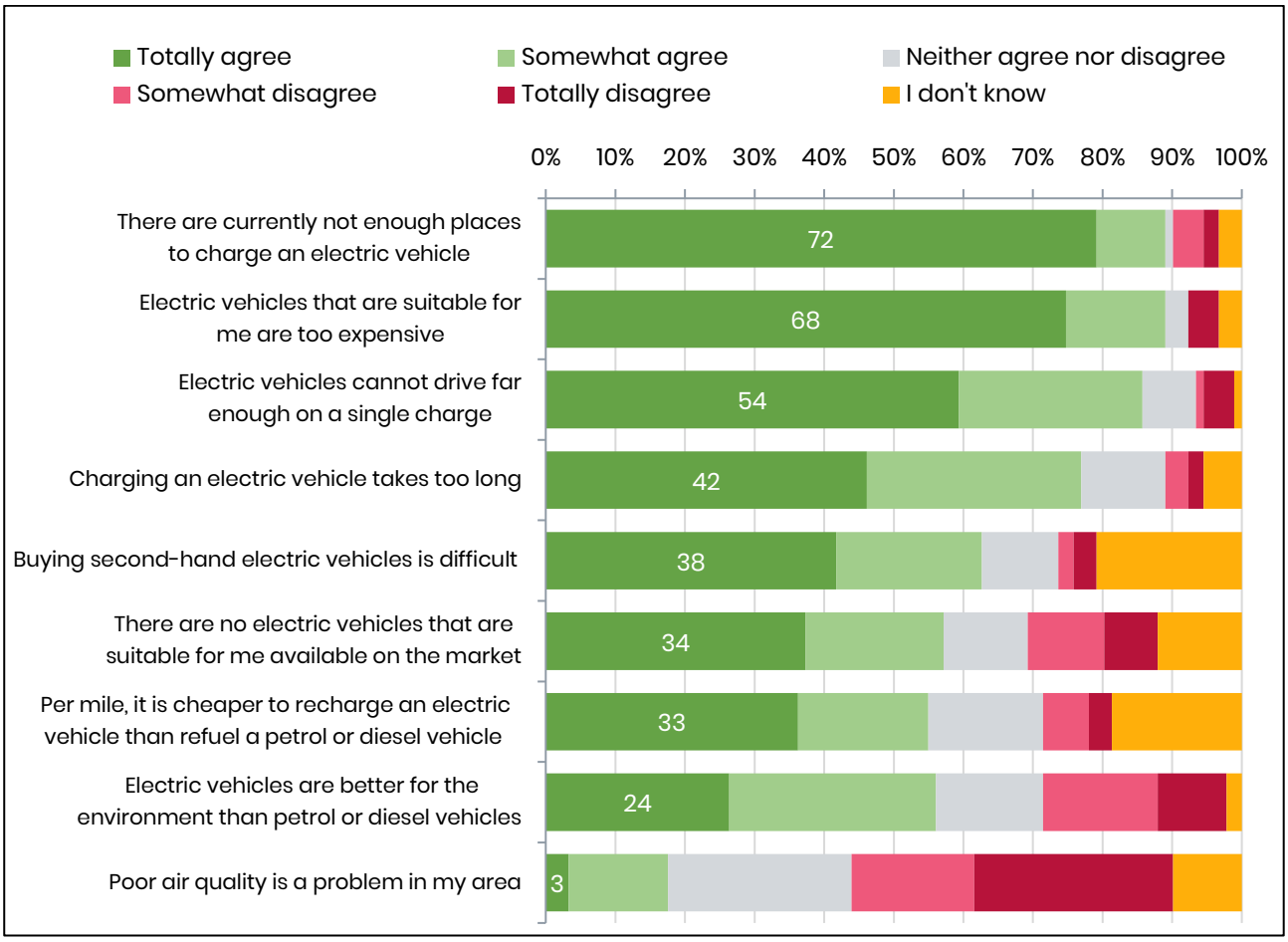

Figure 29 – Responses to the question: How much do you agree with the following statements about electric vehicles? Statements are ranked by the proportion of respondents that totally agree, from highest to lowest. (n=91)

Benefits

Fewer than one in five (18%) agree that poor air quality is a problem in their area. While air quality across Dorset may generally be good, there are certain hotspots failing to meet national standards. There may be a case for further education about air pollution in Dorset among taxi and private hire drivers. Often poor air quality is viewed as a problem solely affecting larger urban and city regions, meaning it can be overlooked elsewhere.

More than a quarter (29%) stated that they either don't know or disagree[20] that it is cheaper per mile to recharge an electric vehicle than refuel a petrol or diesel vehicle. Engagement with taxi and private hire drivers and operators is advised to ensure that potential long-term savings for EVs are fully understood. Looking at whole life costs often reveals that best-in-class EVs are

[20] Those that selected 'Somewhat disagree' or 'Totally disagree'.

cheaper to operate than conventional and older technology vehicles. Comparisons between typical diesel vehicles and suitable alternative EV models are presented in **Table 3** below, including potential financial savings associated with switching.

Similarly, just over a quarter (26%) do not agree that EVs are better for the environment than petrol or diesel vehicles. Some may have concerns over the manufacture of EV battery components or the environmental impacts of electricity generation. These are valid concerns, however there is strong evidence that EVs are responsible for considerably lower emissions over their lifetime compared to diesel or petrol vehicles[21]. As electricity generation continues to be decarbonised, driving emissions will fall for existing EVs and manufacturing emissions will fall for new EVs.

[21] Carbon Brief, '[Factcheck: How electric vehicles help to tackle climate change](#)', updated February 2020.

Recommended EVs

Six alternative EV models for taxi and private hire drivers have been identified in **Table 3**. These models have been selected as suitable alternatives to three vehicle models that are currently popular among taxi and private hire drivers in Dorset, as shown in **Table 1**. The average real-world range of the electric car models listed in **Table 3** is 209 miles, while the average range for larger vehicles (that could be converted to be wheelchair accessible) is 115 miles[22].

Nearly two in three drivers who provided an estimation of their mileage via the survey travel less than 200 miles a day. These drivers are less likely to need to charge an EV during their shift or working hours. For drivers who travel further than 200 miles, it may be feasible for top-up charging to take place during a shift, either between fares or during breaks. Drivers who require a larger passenger vehicle are more likely to rely on top-up charging during their shift.

The average time to charge the alternative EV models listed in **Table 3** from 10% to 80% using a 50kW rapid chargepoint is 55 minutes. Three in four drivers (75%) stated they have at least 30 minutes of down-time on an average day. This would be long enough to provide the EVs in **Table 3** with an additional 49-83 miles of range (as outlined in **Table 2**). Even just 15 minutes connected to a 50 kW rapid chargepoint could add more than 25 miles of additional range for these vehicles. More information on types of chargepoint and charging speeds is available in Energy Saving Trust's best practice guide for charging electric vehicles.

While pure EVs emit zero tailpipe emissions, there are still CO_2 emissions associated with electricity used to charge the battery[23]. Despite this, the suggested alternative EV models could all save over 5 tonnes of CO_2 a year based on an annual mileage of 26,661 miles[24].

Six-year operational costs have been calculated based on fuel or electricity costs and vehicle excise duty (VED), which is commonly known as road tax. Fuel and electricity costs are based on an annual mileage of 26,661 miles[24], an average diesel cost of £1.49 per litre, and a domestic electricity cost of 17p per kWh. Full details of fuel and electricity costs and assumptions used to generate these figures are presented in Appendix B (p.47). Over a period of six years, there is the potential for drivers to save between £16,000 and £24,000 by replacing their existing diesel vehicle with an equivalent EV. Drivers who rely on public charging infrastructure can expect to pay more to charge their vehicle, and the savings will be reduced.

[22] Ranges are an indication of real-world range, taken from the impartial EV Database: https://ev-database.uk/.

[23] Further details on emissions calculations are presented in Appendix B (p.47).

[24] Based on MOT data retrieved for all taxi and private hire vehicles licensed in Dorset.

Table 3 – Suitable alternative EV models for taxi and private hire drivers. Annual emissions and operational costs are based on an annual mileage of 26,661 miles, an average diesel cost of £1.49 per litre, and a domestic electricity cost of 17p per kWh. Further information on assumptions used on p.47.

Fuel	Vehicle model	Official CO_2 emissions (g/km)	Annual CO_2 emissions (tonnes)[23]	Real range (miles[22])	Battery capacity (kWh)	Rapid charge time (10-80%, 50kW)	6-year operational costs
Diesel	Ford Mondeo (2014)	129[25]	7.5	-	-	-	£27,318
Fully electric	MG MG5 EV[26] 	0	2.2	180	52.5	54 min	£10,975
		Saving:	**5.2**				**£16,343**
	Skoda Enyaq iV 60 	0	1.9	205	62	64 min	£9,388
		Saving:	**5.6**				**£17,930**
Alternative EV average		**-**	**5.4 (saving)**	**193**	**-**	**59 min**	**£17,136 (saving)**
Diesel	Mercedes E Class (2014)	129[25]	7.5	-	-	-	£27,318
Fully electric	Ford Mustang Mach-E 	0	2.1	215	75.7	75 min	£10,535
		Saving:	**5.3**				**£16,782**
	Tesla Model 3 	0	1.8	235	60	56 min	£8,780
		Saving:	**5.7**				**£18,538**
Alternative EV average		**-**	**5.5 (saving)**	**225**	**-**	**66 min**	**£17,660 (saving)**

Table 3 continued on the next page.

[25] Emissions data for the diesel vehicles shown here are based on values retrieved from the DVLA for real vehicles licensed in Dorset. For each popular vehicle model, the *median* vehicle was selected by ordering all vehicles of that model from oldest to newest.

[26] An MG5 Long Range model is also available with a 'real world' range of 210 miles.

Fuel	Vehicle model	Official CO_2 emissions (g/km)	Annual CO_2 emissions (tonnes)[23]	Real range (miles[22])	Battery capacity (kWh)	Rapid charge time (10-80%, 50kW)	6-year operational costs
Diesel	Ford Transit Tourneo (2018)	164	9.4	-	-	-	£34,949
Fully electric	Citroen e-SpaceTourer 	0	2.7	110	50	41 min	£13,165
		Saving:	**6.7**				**£21,785**
	Peugeot e-Rifter 	0	2.3	120	50	41 min	£11,394
		Saving:	**7.0**				**£23,555**
Alternative EV average		**-**	**6.9 (saving)**	**115**	**-**	**41 min**	**£22,670 (saving)**

Images sourced from www.whatcar.com/car-comparison and https://www.businesscar.co.uk/.

Further details on the EVs listed in in this section are available from the EV Database[27].

On 15 December 2021, the Government Plug-in Grant was updated with new grant rates and eligibility criteria. At the time of writing, cars must cost less than £32,000 (recommended retail price, including VAT and delivery fees) to be eligible for a 35% grant, up to £1,500. Those purchasing eligible purpose-built taxis will receive 20% of the purchase price, up to £7,500. There are also a limited number of grants available for converting a passenger vehicle into a wheelchair accessible vehicle. Further details about grants available for low-emission vehicles are available at gov.uk.

[27] Energy Saving Trust is unable to guarantee the accuracy of information provided by the EV Database. Alternative comparison websites are available.

Next steps

The findings contained within this report aim to provide Dorset Council with insight into the travel patterns and opinions of their hackney carriage and private hire drivers and operators to understand what is preventing them from making the switch to EVs.

Various barriers to EV uptake have been acknowledged, such as concerns from drivers and operators about the upfront costs of EVs, insufficient range of vehicles on the market and a lack of places to charge. Dorset Council is recommended to consider the following next steps:

Provide independent advice to drivers and operators

- Seek to improve drivers' understanding of the current EV market in terms of suitable models available, their typical range and overall running costs.
- Provide drivers with independent information on the benefits and potential long-term savings associated with owning or leasing an EV.
- Consider providing advice on purchasing second-hand EVs, such as visiting reputable retailers and dealerships.
- Raise awareness of grants available for purchasing EVs and associated home charging infrastructure. The council may also want to explore whether any additional financial incentives can be introduced to support the business case of switching to an EV.

Build confidence in charging infrastructure

- Ensure drivers are aware of the existing charging infrastructure available in Dorset, surrounding areas and common long-distance destinations.
- Provide guidance notes on using Zap-Map and similar chargepoint location websites and apps.
- Explore options for installing rapid charging infrastructure in public car parks, ideally close to taxi ranks and popular rest-stops, as well as residential charging to support drivers that park their vehicle on-street.
- Engage with chargepoint operators regarding the survey outcomes and any upcoming council plans to encourage EV uptake amongst taxi and private hire drivers.

Further support

The Local Government Support Programme can assist local authorities with their taxi policy and strategy development. For more information, please contact Technical Consultant, Abby McDougall (abby.mcdougall@est.org.uk).

As of 15 March 2022, the following grants and incentives are available which may help to encourage hackney carriage and private hire drivers to switch to an EV. Please be aware, all grants mentioned below may be subject to change as of 1 April 2022.

Plug-in vehicle grant

The Office for Zero Emission Vehicles (OZEV) offer discounts on the price of brand-new low-emission vehicles through a grant given to vehicle dealerships and manufacturers. OZEV maintains the list of eligible vehicles as well as full details of categories and the grants available at: https://www.gov.uk/plug-in-car-van-grants/overview.

On-street Residential Chargepoint Scheme

The On-street Residential Chargepoint Scheme (ORCS) provides grant funding for local authorities towards the cost of installing on-street or car park residential chargepoints for electric vehicles. Authorities can receive 75% of funding for the installation and procurement costs of chargepoints for residents without access to off street parking. For further details, please visit the Energy Saving Trust ORCS homepage.

Although this funding cannot be used to support the installation of chargepoints for the primary use of taxi fleets, unrestricted installations near individual taxi drivers' homes are eligible, where no off-street parking is available.

Electric Vehicle Homecharge Scheme

The Electric Vehicle Homecharge Scheme (EVHS) provides 75% of the cost of purchasing and installing a home charging point, up to a limit of £350 per installation. Those wishing to claim must own, lease or have ordered an eligible vehicle. Drivers can claim one chargepoint per eligible vehicle and are allowed up to two eligible vehicles per household. Further information available from gov.uk.

Please note, from April 2022, the EVHS will no longer be open to those who live in single-unit properties such as bungalows and detached, semi-detached or terraced housing. The scheme will remain open to homeowners who live in flats and people in rental accommodation.

Workplace Charging Scheme

The Workplace Charging Scheme (WCS) is a voucher-based scheme that provides support towards the up-front costs of the purchase and installation of electric vehicle chargepoints for eligible businesses, charities and public sector organisations. The contribution is limited to 75% of the purchase and installation costs, up to £350 for each socket, and up to a maximum of 40 sockets across all sites for each application. Further information available from gov.uk.

Defra Clean Air Grant

The Department for Environment, Food and Rural Affairs (Defra) Air Quality Grant Scheme provides funding to eligible local authorities to help improve air quality. Successful projects in the most recent round of funding included schemes to encourage the uptake of electric taxis. For further information, including when Defra will be accepting new applications, visit gov.uk.

Appendix A

The following tables and figures show more detailed results from the survey.

Table 4 – Responses to the question: What type of licence do you hold?

Licence type	Count	Percentage
Hackney carriage driver	34	37%
Private hire driver	25	27%
Dual licence driver	13	14%
Operator with dual driver licence	12	13%
Operator with private hire driver licence	7	8%
Grand Total	**91**	**100%**

Table 5 – Responses to the question: Please select your age bracket.

Age group	Count	Percentage
26 - 35	5	5%
36 - 45	21	23%
46 - 55	22	24%
56 - 65	31	34%
65 +	12	13%
Grand Total	**91**	**100%**

Table 6 – Responses to the question: Under your operator's licence, how many vehicles do you operate?

No. of vehicles	Count	Percentage
1	5	26%
2–5	10	53%
6–10	1	5%
11–25	3	16%
Grand Total	**19**	**100%**

Table 7 – Responses to the question: Who owns your vehicle?

Ownership status	Count	Percentage
I do - the driver	51	71%

My employer / the operator	19	26%
Other	1	1%
I lease (or rent) it	1	1%
Grand Total	**72**	**100%**

Table 8 – Responses to the question: Where is your vehicle kept when not on shift?

Location	Count	Percentage
On my driveway or garage	36	48%
On-street	21	28%
In a private car park	7	9%
At my operator's offices or premises	5	7%
Other	4	5%
In a public car park	2	3%
Grand Total	**75**	**100%**

Table 9 – Responses to the question: On a typical day, approximately how much down-time do you have during your shifts (including breaks)?

Down-time	Count	Percentage
I have no down-time	6	8%
Less than 15 minutes	2	3%
15 to 30 minutes	7	9%
30 to 45 minutes	10	13%
45 to 60 minutes	9	12%
60 to 90 minutes	13	17%
90 to 120 minutes	6	8%
Over 2 hours	19	25%
Other	4	5%
Grand Total	**76**	**100%**

Table 10 – Responses to the question: If you drive a hackney carriage, please select the three taxi ranks that you use most often.

Town	Taxi rank	Count
Blandford Forum		
	Sheep Market Hill	5
Bridport		
	West Street	4

	East Street	3
	No rank specified	1
Dorchester		
	Trinity Street	7
	Charles Street	6
	Dorchester South Railway Station	2
Gillingham		
	High Street, Gillingham	4
	School Lane	2
	Railway Station, Gillingham	2
Shaftesbury		
	High Street, Shaftesbury	6
Sherborne		
	The Station	1
	Cheap Street	1
Swanage		
	Station Road	2
	Pierhead, High Street	1
	Railway Station, Swanage	1
Wareham		
	North Street	1
Weymouth		
	St Thomas Street (The Swan)	10
	Esplanade (opposite Johnstone Row)	9
	Railway Station, Weymouth	5
	St Mary's Street (opposite Guildhall)	2
	St Thomas Street (Retina)	1
	The Town Bridge	1
	St Mary's Street (below W H Smiths)	1
Grand Total		78

Table 11 – Responses to the question: Please tell us your three most frequent long-distance fare destinations.

Destination	Count
Heathrow Airport	40
Gatwick Airport	32
Bristol	18
Southampton	13
London	11
Bournemouth	8
None or N/A	6
Dorchester	5
Weymouth	5
Exeter	4
Poole	3
Kent	3
Portland	3
Sherbourne	3
Bovington	3
Stanstead Airport	3

Lulworth	3
Plymouth	2
Tolpuddle	2
Yeovil	2
Sheffield	1
Wareham	1
Stockport	1
Beaminster	1
Exmouth	1
Littlemore	1
Shropshire	1
Liverpool	1
Grimsby	1
Birmingham	1
Wimbourne	1
Midlands	1
Shaftesbury	1
Blackpool	1
Bridport	1
Frome	1
Staffordshire	1
Blandford Forum	1
Swanage	1
Airport run	1
Town to town	1
Portsmouth	1
Westbury	1
Worth Matravers	1
Henstrige	1
Luton Airport	1
Preston	1
Cornwall	1
Romsey	1
Salisbury	1
Grand Total	**199**

Table 12 – Responses to the question: Between fares, do you typically return to base or go to your next job? (Private-hire drivers only)

Response	Count	Percentage
Other	4	10%
Go from one job to the next	17	44%
Return to a base location	18	46%
Grand Total	**39**	**100%**

Table 13 – Total daily mileage (drivers only)

Mileage	Count	Percentage
<100 miles	1	2%
100-149 miles	16	31%
150-199 miles	15	29%
200-249 miles	10	20%
250-299 miles	4	8%
300-349 miles	3	6%
350+ miles	2	4%
Grand Total	**51**	**100%**

Table 14 – Responses to the question: How many of the following vehicle fuel types are in your fleet? (Operators only)

Fuel type	Count
Diesel	77
Petrol	4
Hybrid	5
Plug-in hybrid	0
Fully electric	3
LPG	0
Other	0
Grand total	**89**

Table 15 – Responses to the question: Where are your vehicles kept when not on shift?

Location	Count	Percentage
Operator offices or premises	4	29%
Drivers take these home	10	71%
Grand Total	**14**	**100%**

Table 16 – Responses to the question: On average, how much down-time do your vehicles have during shifts (including drivers' breaks)?

Down-time	Count	Percentage
45 to 60 minutes	3	21%
60 to 90 minutes	1	7%
90 to 120 minutes	1	7%

Over 2 hours	8	57%
Other	1	7%
Grand Total	**14**	**100%**

Table 17 – Responses to the question: On average, what is the typical daily mileage of your vehicles?

Mileage	Count	Percentage
<100 miles	2	20%
100 - 149 miles	2	20%
150 - 199 miles	3	30%
200 - 249 miles	3	30%
Grand Total	**10**	**100%**

Table 18 – Responses to the question: Are you thinking about buying or driving a pure electric vehicle(s) for your work?

Response	Count	Percentage
Never	24	26%
Unsure	41	45%
Yes - within 10 years	9	10%
Yes - within 5 years	7	8%
Yes - within 2 years	1	1%
Yes - within a year	5	5%
Already own/drive an EV for work	4	4%
Grand Total	**91**	**100%**

Table 19 – Responses to the question: How much do you agree with the following statements about electric vehicles?

Response	Totally agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Totally disagree	I don't know
Poor air quality is a problem in my area	3	13	24	16	26	9
Electric vehicles are better for the environment than petrol or diesel vehicles	24	27	14	15	9	2

Per mile, it is cheaper to recharge an electric vehicle than refuel a petrol or diesel vehicle	33	17	15	6	3	17
There are no electric vehicles that are suitable for me available on the market	34	18	11	10	7	11
Buying second-hand electric vehicles is difficult	38	19	10	2	3	19
Charging an electric vehicle takes too long	42	28	11	3	2	5
Electric vehicles cannot drive far enough on a single charge	54	24	7	1	4	1
Electric vehicles that are suitable for me are too expensive	68	13	3	0	4	3
There are currently not enough places to charge an electric vehicle	72	9	1	4	2	3

Table 20 – Responses to the question: Which of these do you feel is the biggest barrier to switching to an electric vehicle?

Response	Count	Percentage
Buying second-hand electric vehicles is difficult	4	4%
There are few/no electric vehicles that are suitable for me available on the market	5	5%
Not applicable	7	8%
There are not enough places to charge	12	13%
Electric vehicles cannot drive far enough on a single charge	28	31%
Electric vehicles that are suitable for me are too expensive	35	38%
Grand Total	**91**	**100%**

Appendix B

Table 21 – Estimated emissions and operational costs for three popular vehicles used by taxi and private hire drivers in Dorset.

Vehicle	Ford Mondeo (Diesel, 2014)	Mercedes E Class (Diesel, 2014)	Ford Transit Tourneo (Diesel, 2018)
Annual fuel demand (litres)	2,968	2,968	3,723
Annual mileage (miles)	26,661	26,661	26,661
Official CO_2 emissions (g/km)	129	129	164
Annual CO_2 emissions (tonnes)	7.5	7.5	9.4
Average fuel cost (per litre)	£1.49	£1.49	£1.49
Annual fuel cost	£4,423	£4,423	£5,547
1st year vehicle excise duty (VED)	£130	£130	£895
Total 1st year costs	£4,553	£4,553	£6,442
6-year fuel or electricity cost	£26,538	£26,538	£33,279
VED over 6 years	£780	£780	£1,670
Total 6-year costs	£27,318	£27,318	£34,949

Table 22 – Estimated emissions, operational costs and potential savings for six alternative EV models.

Vehicle	Skoda Enyaq iV 60	MG MG5 EV	Ford Mustang Mach-E (75.7kWh)	Tesla Model 3	Peugeot e-Rifter	Citroen e-SpaceTourer
Comparison vehicle	Ford Mondeo		Mercedes E Class		Ford Transit Tourneo	
Annual energy demand (kWh)	8,992	10,512	10,091	8,410	10,914	12,610
Annual CO_2 emissions (tonnes)	1.9	2.2	2.1	1.8	2.3	2.7
Annual CO_2 emission saving (tonnes)	5.6	5.2	5.3	5.7	7.0	6.7
Average electricity cost (per kWh)	£0.17	£0.17	£0.17	£0.17	£0.17	£0.17
Annual fuel or electricity cost	£1,565	£1,829	£1,756	£1,463	£1,899	£2,194
Vehicle excise duty (VED)	£0	£0	£0	£0	£0	£0
1st year costs	£1,565	£1,829	£1,756	£1,463	£1,899	£2,194
1st year saving	£2,988	£2,724	£2,797	£3,090	£4,543	£4,247
Total 6-year costs	£9,388	£10,975	£10,535	£8,780	£11,394	£13,165
6-year saving	£17,930	£16,343	£16,782	£18,538	£23,555	£21,785

The following assumptions have been used to generate the figures in **Table 21** and **Table 22**:

- Annual CO_2 emissions include an uplift to reflect real-life driving style, based on a methodology developed by the Department for Business, Energy and Industrial Strategy (BEIS), 2020.
- Electric vehicle CO_2 emissions are calculated using BEIS and Department for Environment, Food and Rural Affairs (Defra) figures for average emissions from UK electricity generation.
- Diesel fuel price of 149p/litre based on typical retail prices as of 20 December 2021: https://www.gov.uk/government/statistical-data-sets/oil-and-petroleum-products-monthly-statistics.
- Average electricity cost is based on an average domestic tariff of 17p/kWh. Further savings can be made if off-peak charging is used. Savings will be reduced if public charging with higher tariffs are frequently used.
- Vehicle excise duty (VED), commonly known as road tax, figures are based on the date the internal combustion engine (ICE) vehicle was first registered. Brand new diesel vehicles will incur higher VED rates in their first year (based on their CO_2 emissions and fuel type), followed by a standard rate of vehicle tax (from year 2 onwards). For EVs, the most recent VED rates have been used.