

# Running out of road

Navigating the route to decarbonised  
business fleets

Jake Shepherd  
Gideon Salutin  
Danila Patti

**SMF**

**Social Market  
Foundation**

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## ABOUT THIS REPORT

This report explores electric vehicle adoption among businesses. To understand the views and experiences of those that manage commercial fleets, we conducted eight semi-structured interviews with small business managers spanning various sectors of the economy, including telecommunications, engineering, manufacturing, hospitality, sports, logistics, and transport. All interviews took place during February and March 2024.

## GLOSSARY

This report frequently employs terms commonly found in commercial electric vehicle literature. For readers who may not be familiar with these terms, the glossary table below provides explanations:

Term	Description
Types of vehicle usage	
Personal vehicles	Also referred to as ‘personal drivers’ or ‘private drivers’, Individuals who use vehicles for personal needs.
Business vehicles	Drivers or ‘fleets’ operating vehicles for commercial purposes, such as delivery or transportation.
Types of commercial vehicles	
Light goods vehicles (LGVs)	Also known as light commercial vehicles (LCVs), such as vans or small trucks, used for smaller deliveries and transportation.
Heavy goods vehicles (HGVS)	Trucks and tankers designed for transporting large quantities of goods and freight over long distances.
Types of electric vehicles	
Battery electric vehicle (BEV)	Powered solely by electricity stored in batteries, emitting zero emissions.
Plug-in hybrid electric vehicle (PHEV)	Combines electric power with a petrol or diesel engine for longer range but emits emissions.
Hybrid electric vehicle (HEV)	Combines petrol or diesel with an electric motor to improve fuel efficiency, and is unable to be plugged in for charging.
Hydrogen vehicle (FCEV)	Powered by a hydrogen fuel cell, they produce no harmful emissions, emitting only water vapour.

It is important to note that, due to data limitations, some terms are used interchangeably in this report. For instance, we may use ‘LGVs’ as a stand-in for the broader ‘business fleet’, acknowledging that vans are not used exclusively for commercial purposes.

Similarly, we occasionally use ‘electric cars’, which are predominantly used by individuals as passenger vehicles, interchangeably with ‘personal drivers’, even though these vehicles can also be owned by businesses. These assumptions reflect common practices in the literature to assess differences between personal and business EV trends, when specific distinctions are unavailable in the data.

## EXECUTIVE SUMMARY

This report explores electric vehicle (EV) adoption among businesses. It reviews literature on the UK commercial fleet, draws upon perspectives from small business managers, and discusses potential policy solutions to help navigate the green transition effectively.

The research was developed alongside a companion report – also published by the SMF in July 2024 – which explores the consumer adoption of EVs, focusing specifically on affordability.<sup>1</sup>

### **Business fleets disproportionately contribute to transport emissions**

- Business fleets are comprised of vehicles primarily used for commercial purposes, including vans, trucks, and other specialised vehicles.
- Due to having higher mileage and less fuel efficiency, these vehicles emit more pollutants than the average car.
  - In 2021, heavy goods vehicles (HGVs; 20%) and vans (17%) accounted for 37% of domestic transport greenhouse gas emissions.<sup>2</sup>
- As well as offering business benefits, the decarbonisation of business transportation represents a substantial opportunity for reaching net zero.

### **Electric vehicles account for a growing share of the business fleet, but remain a small minority**

- In the UK, the business uptake of EVs is on the rise. However, fleet numbers are lagging the uptake of passenger cars.
  - Between 2019 and 2023, the number of electric light goods vehicles (LGVs) licenses increased by 46,700 (reaching 56,000 overall) and electric HGVs increased by 1,701 (2,067), while electric cars increased by over 1 million (1.3 million).<sup>3</sup>
  - Over a longer 10-year period, from 2013 to 2023, registrations increased by 211% for electric HGVs and 1,356% for electric LGVs, compared to a 18,627% increase for electric cars.<sup>4</sup>
  - Electric van sales represented 5.9% of the market segment in 2023,<sup>5</sup> while green HGVs made up less than 1%.<sup>6</sup> In contrast, new electric personal cars represented 16.5% of their segment.<sup>7</sup>
  - The ZEV mandate, introduced to ensure all new cars and vans are clean by 2035, requires manufacturers to increase sales to 10% for vans and 22% for cars by 2024.<sup>8</sup> Cars (75%) are closer to this target than vans (59%).
- While personal EVs lead the way, the increasing uptake of commercial EVs suggests there is demand for electrifying fleets.

### **This growth has been enabled by effective subsidies, yet this support is set to be phased out**

- Business-oriented EV policies are scheduled to end or be scaled back in 2025, raising concerns about whether growth in the sector can be sustained.

- Benefit in kind tax, recognised by automotive businesses as the most effective policy intervention thus far for driving adoption,<sup>9</sup> is slated for modest increases of 1% year-on-year to a total of 5% by April 2028.
- The plug-in van and truck grant, which subsidises the purchasing of business EVs, has also been important to growth. It requires longer-term commitment from the government,<sup>10 11</sup> but is set to expire.
- Applications for the electric vehicle infrastructure grant, which supports SMEs with the cost of installing chargepoint sockets, are closing.
- Without extensions or replacements, businesses face the risk of increased costs and reduced incentives – which may lead to slower adoption.

### **Barriers to adoption – particularly battery capability – mean that progress will get harder in the years ahead**

- High upfront cost is currently an obstacle to the purchasing of EVs, but it is not the main cause of concern among businesses we spoke with.
- Insufficient charging infrastructure is a major cause of anxiety among businesses, and must be addressed.
- Unreliable battery life means EVs cannot always compete with fossil fuel vehicles. Higher range batteries are essential to making EVs viable for businesses, though it is unclear if they can be scaled up for widespread adoption.

### **Existing subsidies should be maintained to sustain progress, but funding charging infrastructure should be the priority**

- The government should extend key policies, ensuring that progress in commercial EV adoption does not drop off.
  - Benefit in kind car tax is expected to remain, despite incremental increases. This subsidy should remain in place to help employees with upfront costs.
  - The plug-in van and truck grant is considered to be effective at creating demand, and should continue beyond 2025.
  - Given SMEs' concerns around charging infrastructure, the electric vehicle infrastructure grant should also remain in place.
- Following Norway's example, funding should be expedited for public charging points, including fast charging, to ensure supply continues to meet demand.



## CHAPTER ONE – INTRODUCTION

Electric vehicles (EVs) are now at the forefront of the green transition, improving air quality and promoting cleaner, safer roads. A central feature of the government's net zero strategy, there has already been significant investment in EV technologies, manufacturing, and consumer subsidies.<sup>12 13</sup>

An often-overlooked aspect of the EV debate is the transition of commercial vehicles. Business fleets, comprised of vehicles primarily used for commercial purpose such as vans, trucks, and company cars, pose greater polluting concerns due to their higher mileage and lower fuel efficiency compared with the average car. Despite their relatively small numbers, commercial vehicles disproportionately contribute to transport emissions. In 2021, transport produced 26% of the UK's total emissions – its largest emitting sector. Cars were the biggest contributors, representing 52% of domestic transport greenhouse gas emissions, while HGVs (20%) and vans (17%) made up 37%.<sup>14</sup>

The decarbonisation of business transportation represents a substantial opportunity for the UK reaching its net zero goals. Developed alongside a companion report exploring the consumer adoption of EVs, focusing specifically on the affordability of EVs for consumers, this report examines electric vehicle adoption in commercial fleets. Drawing from existing literature on commercial fleet trends and insights from interviews with small business managers, it aims to provide a comprehensive understanding of the challenges and opportunities in the EV ecosystem.

A primary focus of this report is identifying the roadblocks that hinder commercial EV adoption, including upfront costs, charging infrastructure, and battery capabilities. While growth in the business EV sector has thus far been positive, adoption rates continue to lag those of passenger cars, indicating that these challenges serve as significant barriers to widespread adoption.

Meanwhile, existing EV business-oriented policies are set to be scaled back. Currently at a crossroad, these policies have the potential to grow or decelerate in the years ahead. This should prompt policymakers to reassess existing policies and consider implementing additional measures to accelerate adoption.

The structure of this report is as follows:

- **Chapter Two** presents the case for business EVs, highlighting the environmental and business benefits of decarbonising commercial transport.
- **Chapter Three** explores business adoption trends, showing recent sales growth and considering market share of commercial EVs.
- **Chapter Four** assesses the policy landscape for commercial EVs, highlighting domestic measures implemented to incentivise uptake.
- **Chapter Five** discusses roadblocks to future adoption, largely informed by the views of business owners interviewed as part of this research.
- **Chapter Six** navigates policy support options and proposes measures to help accelerate EV adoption.

## CHAPTER TWO – MAKING THE CASE FOR BUSINESS EVS

The UK's roads are not solely occupied by private motorists. Corporate fleets also add to traffic – and significantly contribute to carbon emissions. This chapter aims to shine a light on this important aspect of the EV debate. As we discuss, the decarbonisation of business transportation offers a pivotal opportunity for the UK to realise its net zero goals, and provides business benefits for employers looking to embrace sustainability.

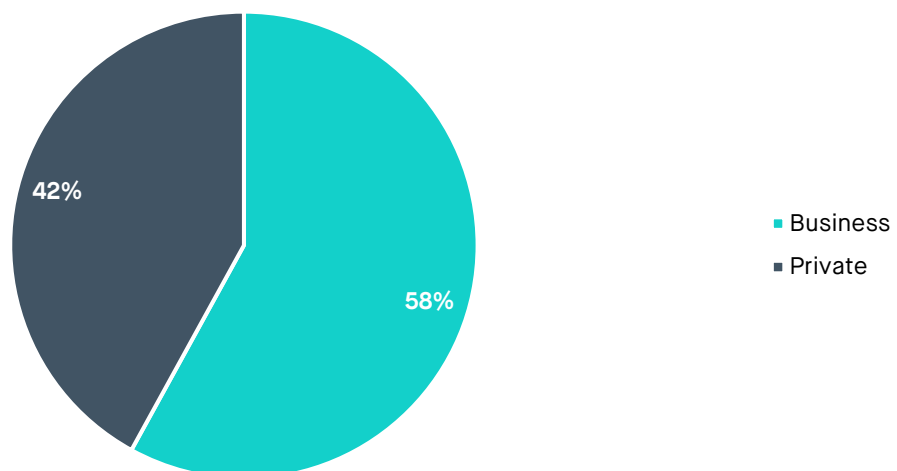
In this chapter and throughout this report, we present insights generated from discussions with those that manage commercial fleets. Overall, we conducted eight semi-structured interviews with small business managers spanning various sectors of the economy, including telecommunications, engineering, manufacturing, hospitality, sports, logistics, and transport. All interviews took place during February and March 2024.

### Business fleets disproportionately contribute to transport emissions

Business fleets are comprised of vehicles primarily used for commercial purposes, including vans, trucks, and other specialised vehicles with specific business needs. As well as representing considerable economic activity – vehicle leasing and rental alone is estimated to contribute £49 billion to the economy each year<sup>15</sup> – they play a crucial role in shaping the environment in the UK.

For instance, out of the 4.1 million licensed vans, which were driven 55.5 billion miles in total in 2019, 58% were deployed for business purposes such as equipment, tools, or materials transportation and goods delivery.<sup>16</sup> This means there were around 2.4 million vans registered among businesses. While this figure is significantly smaller than the total number of vehicles in the UK (41 million),<sup>17</sup> their higher carbon output compared to cars highlights their disproportionate impact on transport emissions.

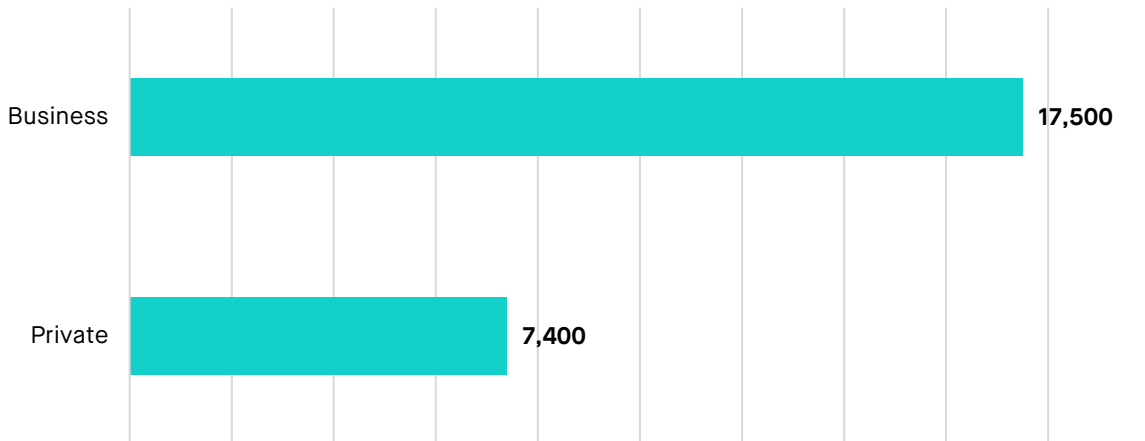
**Figure 1: Proportion of vans by keepership, 2019-20**



Source: Department for Transport

Not only are vans less efficient, but they also emit more pollutants due to travelling longer distances. Small vans typically achieve fuel efficiency in the range of 30-40 miles per gallon (mpg) of fuel, contrasted with the 40-65 mpg of cars.<sup>18</sup> Additionally, commercial vans tend to undertake more miles than those driven by personal drivers, with Department for Transport van statistics for 2019-20 showing business vans complete 17,500 miles a year on average, compared to private vans which cover 7,400 miles.<sup>19</sup>

**Figure 2: Van average annual mileage, 2019-20**

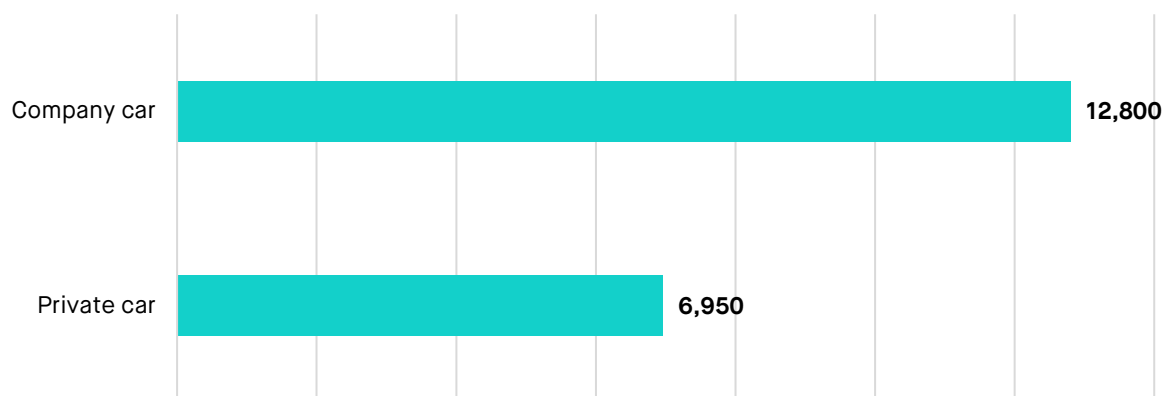


Source: Department for Transport

Heavy goods vehicles (HGVs) – large vehicles such as lorries and tankers designed for transporting heavy goods over long distances – also comprise the corporate fleet. They contributed 20% of all domestic transport CO2 emissions in 2021.<sup>20</sup>

Though it acknowledges that decarbonising freight presents challenges due to the weight of HGVs and long distances travelled – a challenge we discuss throughout this report – the Department for Transport has said “the road-based freight and logistics sectors therefore have a critical role to play in achieving our 2050 net zero emissions target”.<sup>21</sup> According to Gridserve, a sustainable infrastructure developer, switching the UK’s 400,000 HGVs to electric would amount to energy savings equivalent to powering two millions homes for a year.<sup>22</sup>

In addition to vans, lorries, and tankers, there is a considerable presence of commercial cars in the UK, with a further 900,000 licensed vehicles classified as company cars.<sup>23</sup> Department for Transport vehicle mileage statistics for 2022 show company cars cover 12,800 miles annually on average, almost two times that of private cars (6,950 miles).<sup>24</sup>

**Figure 3: Vehicle mileage, 2022**

Source: Department for Transport. Note: Results for company cars should be treated with caution as the sample is small.

There are broader trends that highlight the necessity for an electrified business fleet. One such trend is the continued growth in e-grocery, which is projected to continue growing with CAGR of around 7% until 2030.<sup>25</sup> While an increasing share of ‘trip chaining’ grocery e-commerce has the potential to mitigate the carbon emissions of individual consumer trips to supermarkets,<sup>26</sup> it is important to ensure this growth is as sustainable as possible and does not replace one source of emissions with another.

Meanwhile, the EU estimates that last-mile deliveries alone contribute to 20% to 30% of a city's emissions,<sup>27</sup> a proportion also likely to increase due to increasing e-commerce activity.<sup>28</sup> As this figure excludes the rest of the delivery chain and most other business sectors, it is reasonable to assume that the overall emissions from corporate fleets in urban areas are in fact much higher.

For these reasons, the decarbonisation of business transportation represents a substantial opportunity for achieving the UK's net zero goals. As articulated by the Climate Change Committee (CCC), an independent non-departmental public body formed to advise government on how to tackle climate change, “the private sector will be instrumental in the EV transition”.<sup>29</sup>

### **Business benefits are available to employers looking to go green**

In addition to wider sustainability benefits – decarbonising Britain's roads to make them cleaner and healthier – transitioning to EVs offers several potential business benefits. These include financial gains that can positively impact a business's bottom line and improve workers' personal finances.

#### **EVs offer cheaper lifetime costs than fossil fuel vehicles**

While EVs have higher upfront costs – discussed in greater detail in Chapter Five – electric vehicles generally have lower operating costs than traditional internal combustion engine (ICE) vehicles. According to the Energy Saving Trust, full charge in a pure electric vehicle provides a typical range of around 220 miles, and will cost

approximately £23 if charging at home. Driving 220 miles in a petrol or diesel car will cost around £41 in fuel.<sup>30</sup>

*“We have fuel-powered cars, which cost a fortune every month. I haven't got so much visibility on how much it would cost to charge EVs for longer journeys compared to normal petrol or diesel prices, but I'm estimating it would be cheaper.” – Janet, telecommunications<sup>i</sup>*

With fewer parts and functions, EVs also require less maintenance, which can result in additional long-term savings.<sup>31</sup> Analysis from the United States shows that the lifetime ownership costs of EVs are considerably lower than comparable ICE vehicles, resulting in savings of \$6,000 (£4,750) to \$10,000 (£7,900).<sup>32</sup> Additionally, businesses tend to have high utilisation rates, with commercial drivers tending to drive longer distances, which makes it faster to recoup costs.<sup>33</sup>

Extrapolated across a fleet, these savings can increase significantly. In a survey carried out by Volkswagen, 52% of van drivers said operating an EV would be more cost effective than a petrol or diesel equivalent.<sup>34</sup> Another major auto manufacturer, Ford, has revealed 56% of van drivers believe their business productivity could be improved by an electric van due to lower running costs.<sup>35</sup>

*“The major thing is managing costs, day-to-day running costs and overhead costs. If it's more economical, it would be a no-brainer to look at that. The same with charges and tax.” – Cameron, logistics and deliveries*

### They are exempt from some duties and charges

The lower emissions of EVs lead to reduced tax rates and charges compared to ICE vehicles. This includes fuel duty, levied per unit of fuel purchased, which even under repeated freezes leaves petrol drivers paying more to run their vehicles.<sup>36</sup> Currently, EVs are also exempt from vehicle excise duty (VED), a benefit that is set to change in 2025.<sup>37</sup> Initially, the first-year rate will be significantly lower at £10, in contrast to £120-£945 for petrol or diesel vehicles. Thereafter, all vehicles will be subject to a standard rate.<sup>38</sup>

Battery and hydrogen fuel cell vehicles are eligible for the cleaner vehicle discount, entitling employers with a fleet to a 100% discount on London's Congestion Charge until 2025.<sup>39</sup> Lower emission vehicles also qualify for lower charges from other clean air zones across the UK, including London's ultra-low emission zone (ULEZ). In some towns and cities, drivers may enjoy free parking, another potential cost saving for businesses.<sup>40</sup>

### They also offer enhanced business credentials and brand recognition

Contributing to broader sustainability goals can improve an employer's Corporate Social Responsibility portfolio, signalling to investors and customers they are dedicated to a responsible business ethos. Electrifying the fleet can help businesses comply with a number of sustainability schemes, such as the Energy Savings Opportunities Scheme.<sup>41</sup>

<sup>i</sup> Pseudonyms have been used to protect participants' identities.

A study by Centrica Business Solutions has found revealed that the motivating factor for EV adoption is to hit their sustainability targets (59%).<sup>42</sup> This is supported by Gridserve, which suggests 82% of van drivers want to see more companies be more environmentally friendly. Van drivers also believe that transitioning to EVs can lead to new business opportunities amid growing demand from socially conscious customers.<sup>43</sup>

*“We have to look at sustainability. We’re talking a lot about being environmentally friendly. From a business point of view, we’re also interested in economical cost savings and less use of petrol or diesel.” – **Safiya, hospitality***

Public attitudes towards business are evolving, with consumers increasingly prioritising sustainability. Research summarised by YouGov has found that 72% of consumers now consider it in their purchasing decisions, for example.<sup>44</sup> The UK ethical market is experiencing growth, expanding by almost 35% in 2021 to £141.6 billion – the largest increase since 1999.<sup>45</sup> Such findings suggest consumers are willing to support companies that demonstrate a higher commitment to social responsibility, potentially leading to increased business sales.

*“It’s a good marketing tool, we need to show we are green. It’s for sustainability and the future success of the business.” – **Louise, engineering***

### **EVs present employee benefits, and can lead to improved staff engagement**

EVs also offer benefits to employees. They can provide lower operating costs and reduce duties and charges, improving financial and mental wellbeing for those with a company car or van. Going green can also reassure environmentally conscious employees they are ‘doing the right thing’ at work. If staff come to reap these benefits, it is natural that their job satisfaction will also increase.<sup>46</sup>

*“We only allow petrol for business travel, so if employees use a car for the weekend, they have to fuel it themselves. Whereas with an EV, it’s going to be very minimal cost usage.” – **Kevin, manufacturing***

However, as Paul Hollick, Chair of the Association of Fleet Professionals, emphasises, electrification requires staff buy-in.<sup>47</sup> As noted throughout this report, policies need to be carefully designed to ensure adoption, especially among drivers who are sceptical of EVs. It’s important to acknowledge that not all drivers will be receptive to EVs, or may find them challenging to integrate into their day-to-work.<sup>48</sup>

**Table 1: Benefits of businesses adopting EVs**

	Summary
<b>Cheaper lifetime costs</b>	Fewer maintenance requirements and lower fuel costs than traditional vehicles contribute to considerable long-term savings.
<b>Lower duties and charges</b>	EVs benefit from reduced tax rates and charges compared to ICE vehicles, including VED, congestion charges, and free parking.
<b>Enhanced sustainability credentials</b>	Electrifying aligns with sustainability goals, enhancing CSR profiles and boosting appeal to customers, potentially increasing sales.
<b>Increased employee engagement</b>	Lowering operating costs while going green can increase job satisfaction and engagement among staff, contributing to a positive workplace culture.

Source: SMF analysis

Transitioning the UK's business fleets to EVs is an important step to achieving the UK's net zero emissions goals. The disproportionate contribution of commercial vehicles to transport emissions, largely propelled by the high carbon output of vans, HGVs, and company cars, emphasises the key role of the private sector in driving this shift. Meanwhile, the business benefits of EVs, including lower lifetime costs, reduced duties and charges, enhanced sustainability credentials, and increased employee engagement, presents a strong case for enterprises to embrace the transition.

*"We want to start moving into the direction of green energy." – Louise, engineering*

## CHAPTER THREE – BUSINESS EV ADOPTION TRENDS

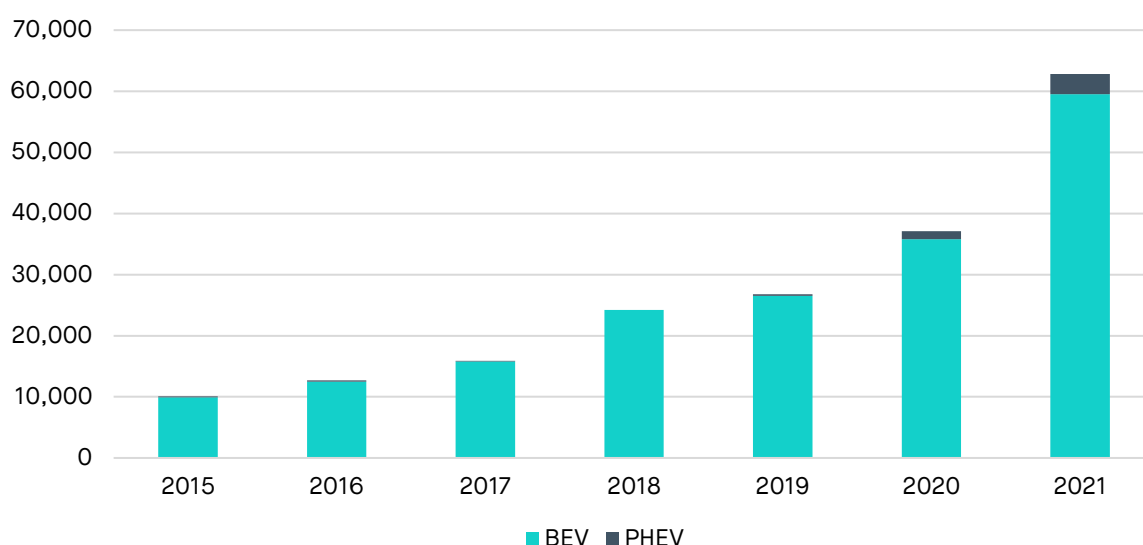
The adoption of EVs is gaining traction, with sales figures rising across the world.<sup>49</sup> However, this shift is driven primarily by demand from individual consumers, as the growth in commercial fleet uptake has generally been slower compared to personal vehicles.<sup>50</sup> This suggests the presence of market barriers that hinder businesses from fully embracing EVs, which may restrict future growth prospects.

In this chapter, we explore recent trends in EV sales, showing that sales, though steadily rising, only constitute a small market share overall. We also assess policy trends aimed at boosting growth, highlighting domestic measures implemented to incentivise business EV uptake. Currently at a crossroad, these policies have the potential to either maintain growth or risk decelerating adoption in the years ahead.

### Electric vehicles account for a growing share of the business fleet, but remain a small minority

According to McKinsey, electric personal cars accounted for 6% of all global car sales in 2021, compared to just 2% of electric LCVs.<sup>51</sup> This is supported by the International Energy Agency (IEA), which indicates that, although worldwide electric LCV sales increased by over 70% in 2021, the market share remains at 2%, approximately four times less than that of passenger cars.<sup>52</sup>

**Figure 4: Electric LCV registrations, Europe**



Source: International Energy Agency

In Europe, the commercial EV sector continues to expand. It has grown by a factor of 11 between 2016 and 2022, from 100,000 vehicles to more than 1 million.<sup>53</sup> With regard to the LCVs, IEA data (Figure 4) shows the number of BEV and PHEV vehicles in Europe has increased by 522% between 2015 and 2021, from 10,000 to 63,000.<sup>54</sup> Analysis from Charles River Associates suggests 1.4% of the total European commercial vehicle fleet is now electric.<sup>55</sup>



These trends are mirrored by individual countries' EV markets, including those with high EV adoption. In Denmark, for instance, latest sales figures show the number of electric cars registered in January 2024 was 21.2% of new cars registered; for new electric vans, it was 11.9%.<sup>56</sup> Attributed to its long-standing supportive policy environment and substantial public subsidies, Norway saw EVs comprise 82% of all new vehicles sold in 2023,<sup>57</sup> while 29% of LCVs sold were electric.<sup>58</sup>

### **The UK follows a similar pattern, with commercial sales also trailing behind those of personal vehicles**

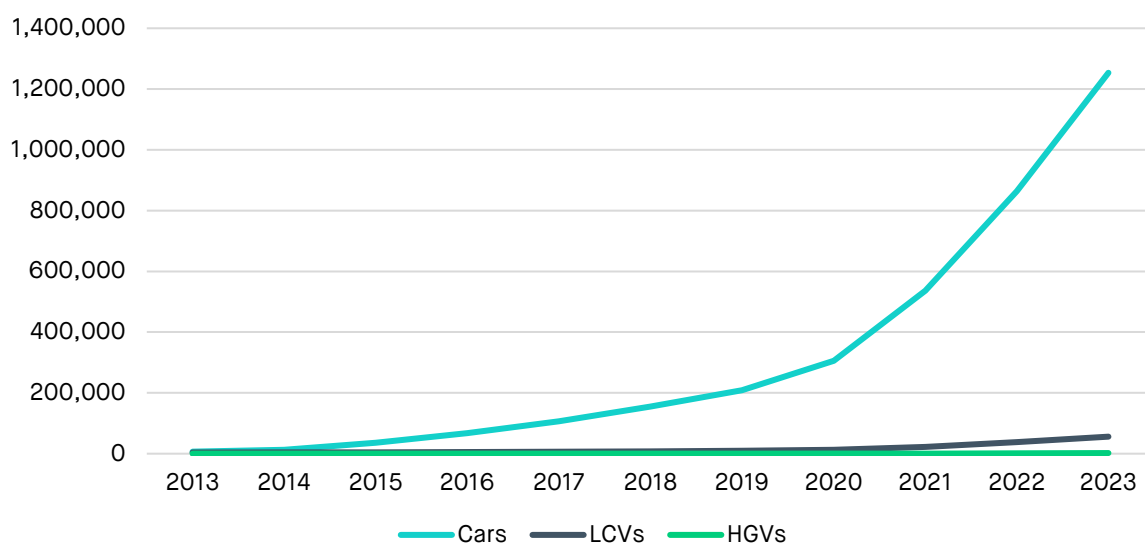
The commercial sector has played a significant role in driving EV sales growth. Evidence submitted to the House of Lords Environment and Climate Change Committee (2024) highlights that, in the UK, the “uptake of EVs thus far has been led by corporate fleets and early adopters”.<sup>59</sup>

This is supported by the OBR which, citing Society of Motor Manufacturers and Traders (SMMT) analysis in 2021,<sup>60</sup> demonstrates that private consumers have at times been adopting electric vehicles at a slower pace compared to businesses. In 2020, for example, 4.6% of car registrations by consumers were for BEVs, compared to 8.7% for corporate registrations.<sup>61</sup>

This jump is likely attributed to the implementation of a new benefit-in-kind rate in April 2020. HM Revenue and Customs data reveals that, in 2019/20, there were just 4,000 pure electric company cars; 12 months later, after the zero-percentage rate was introduced, it was 52,000 – a 1,300% increase. Even against a backdrop of a 10% reduction in company cars overall, the market share of BEVs increased from 1% to 7%.<sup>62</sup> The Environment and Climate Change Committee has declared this incentive a success, affirming that “favourable benefit in kind rates will continue to drive the uptake of new zero emission vehicles”.<sup>63</sup>

Despite this acceleration and relative policy success, business fleet numbers continue to lag behind personal EVs. Of the 1.2 million licensed electric vehicles in the UK in 2023 – a 45% increase since 2022 – 93% were BEV or PHEV cars, 4% were BEV LGVs, and 3% were other remaining categories including buses and coaches. Over a longer 10-year period, from 2013 to 2023, electric LGV registrations increased by 1,356% and HGV registrations increased by 211%, compared to a 18,627% increase in electric cars.<sup>64</sup>

**Figure 5: Ten-year growth of the number of EV licenses, UK**



Source: Department for Transport and Driver & Vehicle Licensing Agency. Note: Data is unavailable for Q4 2023, so yearly averages of Q1 to Q3 were used instead

This has some important implications. Sales of all kinds of EVs are steadily rising, showing positive momentum and resulting in environmental benefits. Estimates suggest that EV fleets are already reducing carbon emissions by more than 15 tonnes of CO<sub>2</sub> per vehicle – equivalent to a fuel saving of 5,665 litres – per year.<sup>65</sup> In comparison, the average house in England produces approximately 2.3 tonnes of CO<sub>2</sub> a year.<sup>66</sup>

The commercial sector represents a promising opportunity for growth. While personal EVs currently dominate the market, the increasing uptake of electric company cars, LGVs, and HGVs suggests there is recognition of and interest in the benefits of electrifying fleets. Additionally, the success of incentives such as the benefit-in-kind show the effectiveness of policies in driving uptake.

Table 2 illustrates the annual increases in the number of electric vehicle licenses over the past five years.<sup>67</sup> This ongoing growth demonstrates the burgeoning acceptance of EVs not just among consumers but also in business – LCVs and HGVs continue to hit record sales each year – and suggests that the sector would benefit from continued support to expand. With the right policies in place, the commercial EV market has the potential to make significant sustainability contributions to the UK.

**Table 2: Five-year growth of the number of EV licenses, UK**

	2019	2020	2021	2022	2023
Cars	<b>208,776</b> (+53,834)	<b>305,639</b> (+96,863)	<b>536,457</b> (+230,818)	<b>836,686</b> (+327,229)	<b>1,253,521</b> (+389,835)
LCVs	<b>9,232</b> (+1,861)	<b>13,282</b> (+4,050)	<b>22,332</b> (+9,050)	<b>38,555</b> (+16,223)	<b>56,022</b> (+17,467)
HGVs	<b>366</b> /	<b>358</b> (-8)	<b>447</b> (+89)	<b>794</b> (+347)	<b>2,067</b> (+1,273)

Source: Department for Transport and Driver & Vehicle Licensing Agency. Note: Data is unavailable for Q4 2023, so yearly averages of Q1 to Q3 were used instead

Ultimately, however, commercial EV growth lags significantly behind that of personal cars, resulting in a relatively small market share overall. SMMT data shows that sales of BEV vans represented only 5.9% of the market segment in 2023,<sup>68</sup> for example, while green HGVs<sup>ii</sup> made up less than 1% (0.8%) of their respective sector.<sup>69</sup> In contrast, new electric personal cars represented 16.5% of their segment.<sup>70</sup> This indicates there are barriers unique to businesses which, if addressed, could unlock significant growth. We identify these obstacles in Chapter Five.

<sup>ii</sup> SMMT HGV data includes hydrogen-powered vehicles as well as electric ones.

## CHAPTER FOUR – THE COMMERCIAL EV POLICY LANDSCAPE

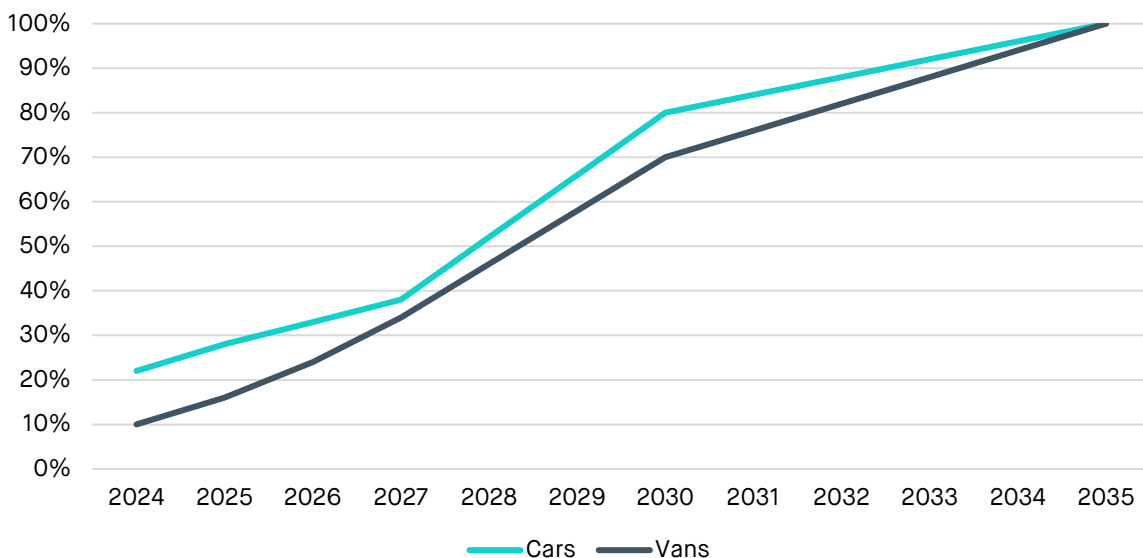
To meet its legally binding net zero 2050 target, reducing greenhouse gas emissions by at least 100% of 1990 levels, the government<sup>iii</sup> is seeking to move from early adopters of EVs to the broader population.<sup>71</sup>

This includes the blanket measures that apply to all motorists, regardless of whether they drive for personal reasons or for business purposes. The most significant is the zero emission vehicle (ZEV) mandate, a law introduced to ensure all new cars and vans are clean by 2035.<sup>72</sup>

Under ZEV, car manufacturers must increase their proportion of EV sales to achieve 100% market penetration by 2035, with interim targets of 80% for cars and 70% for vans by 2030, though targets from 2030 have not yet been passed in legislation.<sup>73</sup> A separate pledge by the Department for Transport has committed to phasing out new, non-zero emission HGVs weighing 26 tonnes and under by 2035, with all new HGVs sold in the UK to be zero emission by 2040.<sup>74</sup>

The mandate, which requires manufacturers to increase EV sales to 10% for vans and 22% for cars by 2024, aims to make EVs more accessible and reduce sales of ICE vehicles.<sup>75</sup> Automotive companies must pay the government £15,000 for each non-compliant vehicle, pushing the market to prioritise EVs. While businesses have time to adjust, the mandate ultimately dictates that within the next decade, new fleet purchases must be electric. Last year’s sales suggest cars (16.5% in 2023; 75% of the target) are closer to meeting this goal than vans (5.9%; 59%), assuming these trends continue throughout 2024.

**Figure 6: Zero Emissions Vehicle (ZEV) mandate targets**



Source: Office for Zero Emission Vehicles

<sup>iii</sup> This includes the central government car fleet, which has committed to being 100% zero emission by the end of 2027. Data from September 2022 suggests that 25.5% of all central government cars are ultra-low emission vehicles.

The government’s EV policy portfolio also encompasses vehicle excise duty, which grants exemptions to EVs to reduce upfront costs for owners. As mentioned above, this subsidy is set to be removed in 2025, at which point all vehicles will be subject to the same standard rate.<sup>76</sup> Another incentive is the cleaner vehicle discount, entitling employers with a fleet to a 100% discount on London’s Congestion Charge, also scheduled to expire next year.<sup>77</sup>

**Table 3: Legislated annual targets for ZEV van sales shares**

	2024	2025	2026	2027	2028	2029	2030
Target	10%	16%	24%	34%	46%	58%	70%

Source: Department for Transport and Driver & Vehicle Licensing Agency

**Table 4: Annual targets for ZEV van sales shares to be set out in future legislation**

	2031	2032	2033	2034	2035
Target	76%	82%	88%	94%	100%

Source: Department for Transport and Driver & Vehicle Licensing Agency

Below, we highlight a range of other incentives that can be taken advantage of by Britain’s corporate fleet. However, most are also set to be rolled back in 2025 – risking the creation of a significant policy gap with little long-term support for the commercial EV sector.

### **Commercial sector growth has been enabled by effective subsidies, which are being scaled back**

As illustrated in the preceding chapter, the commercial EV sector is experiencing considerable significant momentum following years of continued growth. This has partly been fuelled by effective business-focused government policies. The scaling back of these measures raises concerns about the sustainability of adoption, and whether it can be maintained in the years to come.

#### **Benefit in kind company car tax is recognised as the most effective policy intervention**

Leasing helps individuals and businesses manage the initial costs of vehicle ownership. One method is salary sacrifice, which operates similarly to cycle-to-work schemes. Here, an individual leases an EV through their employer from a third party, using a part of their salary before tax to reduce income tax and National Insurance contributions. Participants in this scheme are also subject to benefit in kind tax, also known as company car tax. The tax rate for EVs is significantly lower at 2%, compared to higher rates for more polluting cars, which can be up to 37%.

We have already highlighted the policy’s positive association with company EV sales, and the Environment and Climate Change Committee’s support for it. Further praise comes from the British Vehicle Rental & Leasing Association (BVRLA), which says the lower benefit in kind rate “has been the single most effective intervention to date” for the adoption of EVs.<sup>78</sup>

To illustrate this, it says 91% of new salary sacrifice cars in the first quarter of 2023 were battery EVs, while 43% of all new leased cars in the same period were battery EVs.<sup>79</sup> Further, HMRC statistics indicate that recipients of this benefit cover different income levels, with one in ten BEV company car drivers earning less than £30,000 annually.<sup>80</sup> The policy is expected to remain at 2% until April 2025, increasing to 3% in 2025/26, 4% in 2026/27, and 5% in 2027/28.<sup>81</sup>

### **The plug-in van and truck grant has also been important to growth**

The plug-in vehicle grant (PIVG) was launched in 2012 to make the cost of purchasing electric vans and trucks more affordable, with employers entitled to a discount on eligible vehicles. In 2016, it was extended to HGVs. The maximum discount available for some small vans is £2,500, for some large vans it is £5,000. For some small trucks it is £16,000, for some large trucks £25,000.<sup>82</sup>

EV cars are no longer available as part of the grant, while the level of the grant for remaining vehicles was cut in December 2021.<sup>83</sup> While opinions are varied on the impact of the grant on cars, with some stakeholders contending that it only benefitted those already able to afford them,<sup>84</sup> the sector view is that the policy has helped to drive demand for vans.<sup>85</sup> Survey data suggests six in 10 drivers feel that receiving a grant towards an EV would make them more likely to transition.<sup>86</sup>

Market experts interviewed by Frontier Economics for a May 2022 report suggest that PIVG has been crucial to growing the early market. Stakeholders contend that a major barrier to electric van uptake is product limitations – insufficient technological capabilities that prevent businesses to carry out operations as normal, see Chapter Five – and PIVG and its associated cost reductions will continue to be important in driving demand as new, better models enter the market.<sup>87</sup> According to the SMMT and the British Vehicle Rental and Leasing Association, a long-term commitment to the PIVG will be necessary.<sup>88</sup>

Experts also expressed concern around reduced uptake if the grant were to be scaled back, particularly if viable models become more available but a price premium remains. Indeed, the 2021 changes to PIVG have been identified as significantly impacting costs and limiting the speed at which businesses have been able to transition.<sup>89</sup> While Lizzie Culwick, Deputy Head of the Office for Zero Emissions Vehicles (OZEV), has acknowledged that “the plug-in van grant continues to be an important mechanism for helping to reduce the upfront cost,” she has failed to comment on whether the policy would continue beyond March 2025, when it is due to end.<sup>90</sup>

### **The electric vehicle infrastructure grant is targeted to SMEs, but it is unclear whether it has helped to increase demand**

The electric vehicle infrastructure grant for staff and fleets provides small and medium-sized businesses (249 employees or fewer) with money off the cost of building and installation work when installing multiple chargepoint sockets. The grant covers 75% of the work, up to a maximum of £15,000. Employers are entitled to up to £350 per chargepoint socket and up to £500 per parking space, receiving up to five grants across five different sites. It can be used at the same site as the Workplace

Charging Scheme, but not for the same charging points. The chargepoints must be exclusively for staff or fleet use.<sup>91</sup>

The closing date for applying for the grant is March 2025 – another EV policy set to end within the year.<sup>92</sup> While the targeting of SMEs to increase EV uptake among business that may otherwise lack the capital to do themselves seems positive, due to data limitations it remains unclear whether the policy has effectively increased demand. One reason for this may be a lack of communication, with none of the small business we spoke with aware of this scheme.

### **The Workplace Charging Scheme is thought to be ineffective – and has already expired**

The practicalities of charging electric vehicles are a significant barrier to adoption. In order to improve local infrastructure and accessibility, the government's Workplace Charging Scheme offers voucher-based financial support to eligible businesses, charities, and public sector organisations for upfront expenses.<sup>93</sup>

Started in 2016, the grant covers up to 75% of the combined cost for purchasing and installing charging points, with a cap of £350 per charging socket for a total of 40 sockets for employee and commercial fleet use.<sup>94</sup> OZEV states that 42,000 chargepoints have been installed as of 1 April 2023 – equating to a total grant value of £15.8 million.<sup>95</sup> The Workplace Charging Scheme can be used in conjunction with the EV infrastructure grant for staff and fleets.<sup>96</sup>

The closing date for applications was March 2024. During discussions on whether to extend the scheme, the Environment and Climate Change Committee was told that the direct subsidy for workplace charging should end, allowing for the reallocation of public funding to areas less commercially viable for private investment, such as rural communities, instead. Additionally, it has been noted that uptake may be lower than expected due to limited awareness among stakeholders, with a lack of monitoring for the exact number of workplace chargepoints leading to uncertainty around whether or not pace is meeting expectations.<sup>97</sup>

### **A range of local initiatives have been implemented**

There are also local programmes in place to help encourage the business adoption of EVs. For example, the Greater Manchester Electric Vehicle Network, established in 2013, offers free charging for a membership fee, with the costs absorbed by Transport for Greater Manchester.<sup>98</sup> Mayor Sadiq Khan has also expanded London's EV-charging network infrastructure, making it simpler to access charging points.<sup>99</sup>

A number of local authorities in the UK also host 'EV experience days', which allow businesses to test drive a range of EVs and learn more about their benefits.<sup>100</sup> Councils can also offer business leasing schemes for EVs, spreading the cost of the vehicle over a number of years.<sup>101</sup> There are more innovative schemes; Leeds City Council offers an electric van and car 'try before you buy' scheme for organisations in West Yorkshire, for instance.<sup>102</sup>

**Table 5: Workplace EV policies**

	Summary	End date
<b>Benefit in kind car tax</b>	Applies to employees who receive a company car as a perk, with lower rates for EVs.	Rates increase from April 2025.
<b>Plug-in van and truck grant</b>	Offers financial incentives to businesses purchasing electric vans and trucks.	Due to end March 2025
<b>Electric vehicle infrastructure grant</b>	Supports the installation of charging points for small- and medium-sized businesses.	Applications close March 2025.
<b>Workplace Charging Scheme</b>	Provides businesses with funding towards the installation of EV chargepoints at their premises.	Applications closed March 2024.
<b>Local initiatives</b>	Various local governments offer support for EV adoption, promoting them at the community level.	N/A

Source: SMF analysis

### **Businesses face the prospect of increased costs and reduced incentives**

The ZEV mandate demands that all sales of petrol and diesel vehicles will be phased out by 2035, with 10% of every van manufacturer’s sales in the UK required to be electric by the end of this year. Though this indicates a strong commitment to the transition towards EVs, the scaling back of incentives and subsidies – across the board policies, such as the removal of vehicle excise duty, as well as business-specific measures like the plug-in van and truck grant – sends mixed messages.

The government’s rationale for discontinuing support remains unclear, although fiscal constraint is clearly a factor.<sup>103</sup> Another is the (mis)perception that sufficient momentum has already been achieved in EV adoption, justifying the withdrawal of further incentives. In the context of the ZEV mandate, a market mechanism intended to bring the upfront of costs of new cars down, policymakers may anticipate that ongoing public subsidies will soon become unnecessary.

It is not our place to speculate. Either way, unless some policies are extended or new ones are created in their place, there is a risk that action falls behind ambition, particularly with regard to the commercial sector.

With the initial honeymoon period for several EV policies set to end, businesses face the prospect of increased costs and reduced incentives, which may well lead to challenges in convincing them to continue investing in EV fleets – particularly if technological limitations and other barriers (unpacked in Chapter Five below) remain unaddressed.

In the words of the SMMT, “as the UK’s ambitious mandate for electric van sales comes into effect, every lever must be pulled to make the switch accessible for



fleets”.<sup>104</sup> To ensure the UK is able to meet its targets, uptake success hinges on the availability of supportive policies that incentivise businesses to transition their fleets – yet that support appears to be drying out.<sup>105</sup>

## CHAPTER FIVE – ROADBLOCKS TO ADOPTION

While commercial EV adoption has thus far been positive, there are concerns that sustained growth will be restricted by a range of factors. As put forward by the Environment and Climate Change Committee, corporate fleets have helped to develop EV uptake – but there continues to be major barriers which put EVs out of the reach of drivers.<sup>106</sup>

*“We have been considered a slightly more environmentally responsible approach by considering changing our vans to electric within the next 12 months. That said, there is an issue of upfront costs and distance, as well as charging points.” – Kevin, manufacturing*

Fleet managers have to make more cautious purchasing decisions to effectively run a business and ensure service levels are not disrupted. While these challenges also apply to individual consumers, their significance is often amplified by the business imperative. We discuss these roadblocks, with substantiation from the views of business owners interviewed as part of this research, in detail below.

### High upfront cost is an obstacle to the purchasing of EVs, but it is not the main cause of concern among businesses

Upfront costs are frequently cited as a barrier to EVs competing with conventional vehicles. This includes expensive purchase price points, an insufficient range of affordable EVs, and high initial cost of the second-hand market – all of which deter individuals and business from opting for green transportation over those which run on fossil fuel.<sup>107</sup>

While Auto Trader, cited by OBR, has highlighted that the purchase price difference between EVs and ICE vehicles has narrowed in recent years, it notes the rate of decline has become more sluggish. There was a 15 percentage point fall in the two years prior to March 2022, but only a six percentage point fall since then. The OBR says that, “in the absence of low cost EVs, the steep sales growth of the past years, boosted by (usually high-income) early adopters, is expected to slow.”<sup>108</sup>

*“For small companies like mine, it’s not easy. I don’t think EVs are so affordable for small businesses.” – Evan, transportation*

Further analysis by Auto Trader in 2023 has found that, on average, EVs are 33% more expensive than ICE vehicles.<sup>109</sup> This is supported by the Advanced Propulsion Centre which shows a significant price difference between a mid-range EV car and an ICE car is between £7,000 and £10,000.<sup>110</sup> Auto Trader has also found that upfront cost is considered the most common barrier to adoption among consumers, mentioned by 56% of surveyed drivers.<sup>111</sup>

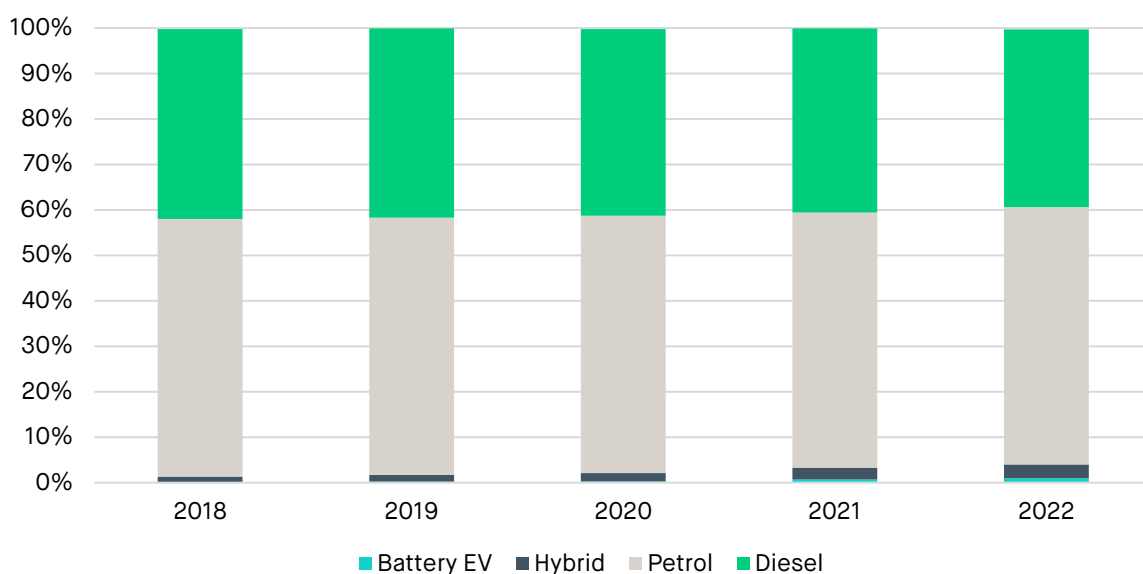
These higher upfront expenses equate to higher fleet costs and greater expenditure overall, meaning businesses have to carefully evaluate whether the long-term savings of running EVs justify the initial cost. The Society of Motor Manufacturers and Traders has argued that there are currently not enough purchase incentives to boost uptake, estimating that cutting VAT for three years, for example, would put around

270,000 more EVs on Britain’s roads.<sup>112</sup> The energy provider, Octopus, has said interventions targeting upfront cost would have the greatest impact on the transition for consumers.<sup>113</sup>

Another barrier is the purchase of used EVs, a market that remains immature. Evidence submitted to the Environmental and Climate Change Committee suggests the majority of second-hand EVs are of higher value, appealing to early adopters rather than the wider population. This is significant because the majority of people rely on the second-hand vehicles market, which is three to four times larger than the new car market.<sup>114</sup>

Although used EV prices have declined in recent months, leading to growing demand<sup>115</sup> – year-on-year prices up to April 2024 declined by 17%, while sales increased by 66%<sup>116</sup> – EVs represent only a fraction of the used car market overall, and offer limited product variety.<sup>117</sup> According to Auto Trader, there is still a lack of “truly” affordable EVs. In 2023, seven in 10 of all used cars sold in the UK were priced under £15,000, yet only one in 10 used EVs sold for less than this amount.<sup>118</sup> The current state of the second-hand market means firms are likely to face higher initial costs, and may struggle to find EVs that meet their specific business needs.

**Figure 7: Used car transactions, market share by fuel type**



Source: Society of Motor Manufacturers and Traders via the Environment and Climate Change Committee

While high costs understandably represent a significant hurdle for businesses considering EV adoption, they may only be a temporary challenge. Projections indicate that price parity between EVs and traditional vehicles is just around the corner, with estimates suggesting it could be achieved in cars by 2027, according to the Department for Transport, and by 2030 as put forward by the CCC.<sup>119</sup> In the EU, parity is also expected between 2027 and 2030.<sup>120</sup> Research suggests that vans can reach parity even sooner than cars, from as early as 2025.<sup>121</sup>

*“A small business is either buying second hand. Second-hand electric vehicles are probably not reliable, or we go brand new and that’s very*

*expensive. We can't afford that outright. My current fleet of vans is all second hand.” – Louise, engineering*

It is important to acknowledge the immediate significance of upfront costs, which will be an issue for some businesses. However, there is some reassurance in the possibility that EV prices become more competitive. This barrier may therefore become less imposing in the near future, and implies that other roadblocks to growth may be more prominent and more in need of support.

While projections suggest that EVs will achieve price parity with traditional vehicles by 2030, this timeline is by no means guaranteed, and is contingent on a number of complex economic factors. And even if the price of new EVs does reach parity with traditional vehicles, those cost reductions must trickle down to the second-hand market to drive widespread adoption, particularly among SMEs, which we were told many businesses rely on.

Among small business managers we interviewed as part of this research, the costs of purchasing EV came up surprisingly infrequently as a barrier to widespread adoption, with very few respondents mentioning it directly. Challenges which directly impact the day-to-day operations of running a business, such as charging infrastructure and technological limitations, were much more commonly cited.<sup>122</sup> As one participant from the engineering sector pointed out, the practical concerns of having a commercial EV often outweigh its costs.

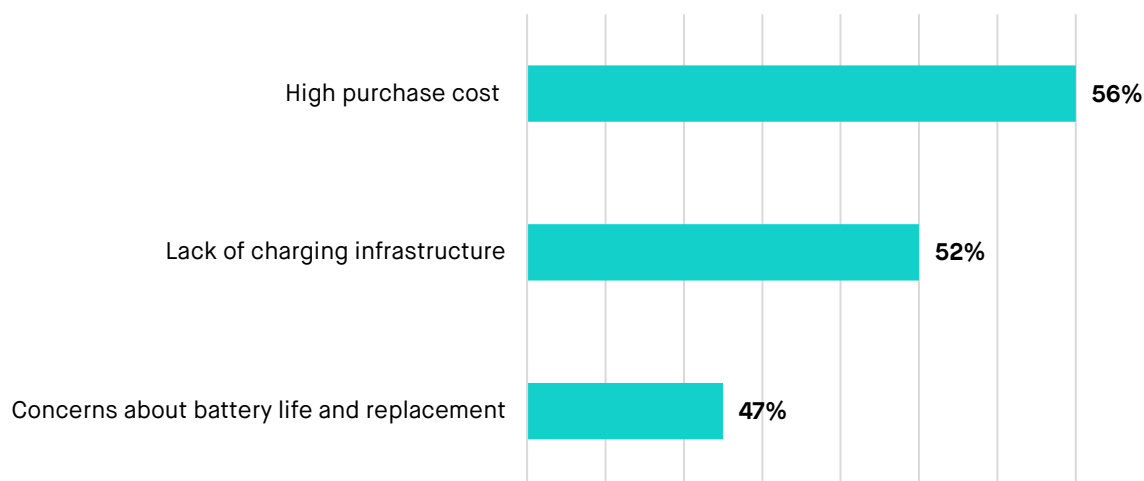
*“It does not matter if EVs are in a price range that suits us. It is not practical for us. There are a lot of things that don't work for us.” – Robert, engineering*

### **Insufficient charging infrastructure is a cause of anxiety among businesses, and must be addressed**

Insufficient charging infrastructure and the anxiety that comes with it is a significant barrier to widespread EV adoption, especially among firms with large fleets and operational and commercial goals.

While individual consumers also worry about whether they will be able to charge EVs reliably (Figure 8),<sup>123</sup> these concerns are amplified by the need for firms to carry out their business operations smoothly without loss of productivity. Charging infrastructure emerged as the largest cause of concern of interviewees, and was identified as the biggest obstacle to stifling EV demand among businesses.

*“Infrastructure and range is the biggest problem.” – Louise, engineering*

**Figure 8: Concerns for UK consumers who consider buying an EV, 2023**

Source: Kantar

Research has found that businesses have been investing in infrastructure (£11.6 billion on EVs and supporting infrastructure combined).<sup>124</sup> Together with government support, which has committed £1.6 billion to chargepoints by 2030,<sup>125</sup> this represents a significant step to ensure business fleets have access to EV charging and are not deterred by potential productivity losses.

*“If 2024 is to be the year of the electric van, investment in chargepoint infrastructure is mission-critical.” – **Society of Motor Manufacturers & Traders***<sup>126</sup>

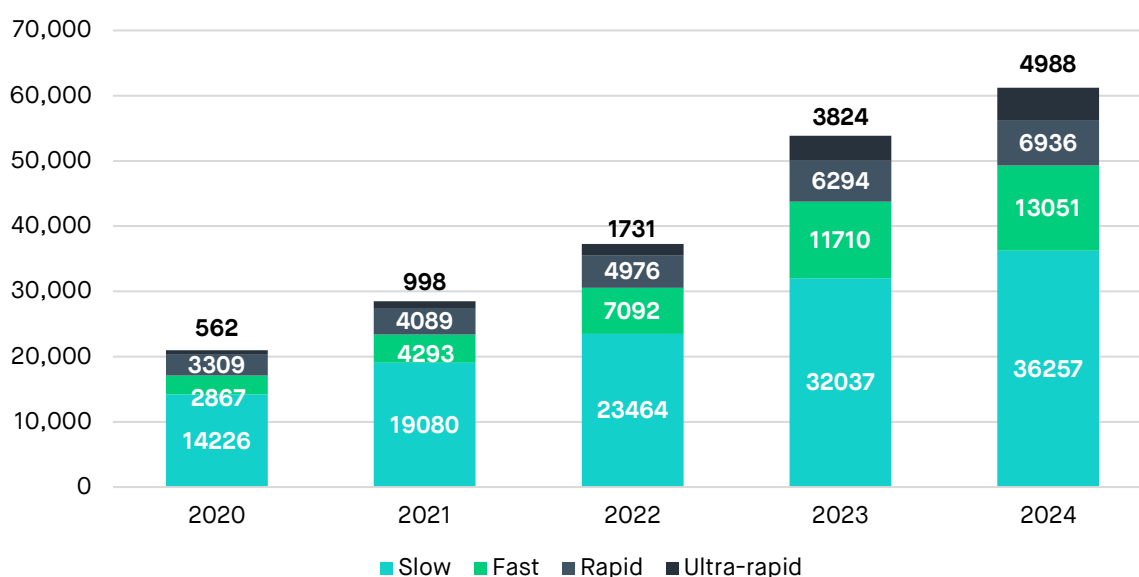
Despite this, research has found that the majority of fleet operating businesses (63%) are concerned about access to public charging points.<sup>127</sup> And if charging points are not paid for by government, firms must bear the costs themselves, adding to the upfront expense of EVs. Though the ballpark cost for a standard 7kW charger is around £1,000,<sup>128</sup> the installation of more powerful, faster commercial EV chargepoints can soar up to £40,000, with additional costs for electrical upgrades, groundworks, signage.<sup>129</sup> Though these costs may be offset by lifetime savings compared to traditional vehicles, this represents a significant investment – especially for smaller businesses.

*“I don't think the infrastructure is there yet to have an all-electric fleet. We're all over the country, relying on an extensive network of charging points is crucial for us.” – **Janet, telecommunications***

Charging speed has been identified by McKinsey as the leading consideration in public charge point selection, more so than costs.<sup>130</sup> Among van drivers, a major issue is that the current number of van-suitable public chargers with fast charge rates is insufficient,<sup>131</sup> with charging time being the number one concern around purchasing an EV.<sup>132</sup> Ford has also found that charging time is the leading concern for purchasing an EV among van drivers,<sup>133</sup> and in a separate study has revealed around half (51%) think that current charging infrastructure is not ready to support electric commercial vehicles.<sup>134</sup>

SMF analysis has shown there are currently just 61,000 public chargepoints, 59% of which are slow (less than 8kW) and take about eight hours to recharge the battery.<sup>135</sup> Less than 20% of public chargepoints are considered rapid or ultra-rapid, which typically take between 20 minutes and an hour to charge a car. In contrast, Norway, which leads the world in EV uptake, has rapid capacity on 36% of its public chargepoints and on all main roads in 50km increments.<sup>136</sup> Further, while the number of chargepoints has increased overall, chargepoint deployment in the UK has slowed, as the number of chargepoints per EV fell during the pandemic from 1:10 in 2020 to 1:18 in 2022 and has not recovered since,<sup>137</sup> despite the EU recommending a maximum ratio of 1:10.<sup>138</sup>

**Figure 9: Total number of chargepoints in the UK**



Source: Zapmap

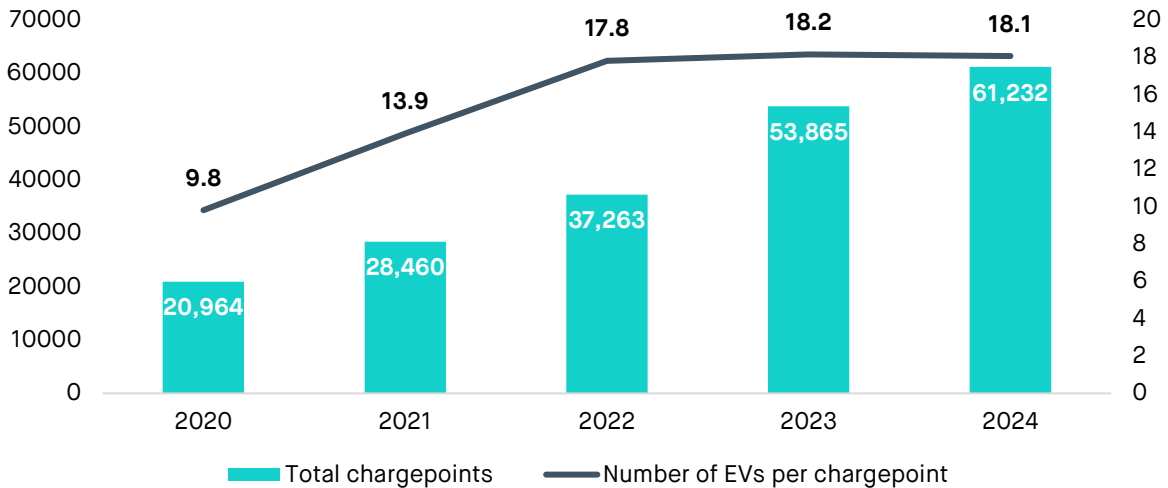
If businesses could be assured of the ability to recharge their EVs swiftly and conveniently at any location, concerns around mileage become less daunting – increasing the appeal of adoption. The SMMT says that to ensure supply meets demand, infrastructure investment is needed in every UK region.<sup>139</sup>

Evidence submitted to the Environment and Climate Change Committee suggests the UK is currently on track to meet the government’s target of 300,000 chargepoints by 2030. However, there are concerns this figure may be insufficient, and the current trajectory may fail to keep up with the number of EVs set to enter the market under the ZEV mandate.<sup>140</sup>

Forecasts by the Competition and Markets Authority suggest up to 480,000 chargepoints will be needed by 2030.<sup>141</sup> Meanwhile, the SMMT believes the ratio of cars to chargepoints has been worsening and estimates at least 2.3 million chargepoints will be needed by 2030 – a target shortfall of 2 million.<sup>142</sup> Given that the country is expected to hold between 8 and 11 million EVs by that point,<sup>143</sup> 300,000 public chargers equates to one for every 32 EVs, well above the EU-recommended maximum of 1:10.

The Committee recommends that to eliminate disincentives for those looking to make the switch to EVs, with survey results provided by McKinsey suggesting many buyers (42%) would be unwilling to consider purchasing an EV until the availability of chargers is equivalent to that of petrol stations,<sup>144</sup> the government must expedite the rollout of funding schemes for charging infrastructure.<sup>145</sup>

**Figure 10: Total number of chargepoints in the UK and number of EVs per point**



Source: Zapmap and SMF analysis

There appears to be little strategy in place for delivering charging infrastructure locally. According to evidence provided to the House of Lords by the Renewable Energy Association, as many as 70% of local authorities do not have a plan to develop EV charging infrastructure.<sup>146</sup> Meanwhile, the Local Government Association says “there are currently no targets in place for delivery of EV charge infrastructure, nor specific powers or duties for local authorities in relation to the provision of EV charging.”<sup>147</sup> Recognising this problem, Labour has pledged to set itself binding targets to accelerate rollout, with plans to delegate responsibilities at regional and local levels, if elected to government.<sup>148</sup>

*“The distribution of charging points for EVs is the real problem, especially when you have to travel long distances. The cost of EVs is also a factor, but when we don’t have reliability problems, it will be less of an issue.” – Jack, sports and fitness*

With regard to larger commercial vehicles such as HGVs, a sector that is especially prone to range anxiety due to long-haul journeys and heavier or time-sensitive loads, most businesses are unable to even consider decarbonising their fleets. This is because Britain’s roads lack dedicated charging points, complicating efforts in the transition to EVs.<sup>149</sup> Despite this, the SMMT says it has seen little enthusiasm for HGV recharging, and has called for more public infrastructure and a distinct HGV infrastructure strategy by Spring 2024.<sup>150</sup> The Stockholm Environment Institute has pinpointed a potential solution to achieving commercial competitiveness among HGVs, the development of fast charging networks.<sup>151</sup>

*“If we did have to go on longer trips, we’d have to plan the route to be able to find out where the chargers are. Right now, it’s not feasible.” – Robert, engineering*

While such infrastructure remains limited – the UK’s first public fast charger for HGVs was installed in 2022<sup>152</sup> – there are plans within the private sector to accelerate the UK’s transition to electric HGVs and “lay foundations for one of the most advanced electric HGV charging networks in the world”. The industry-led Electric Freightway project, partly funded by the Department for Transport and operated by Gridserve, aims to install depot charging locations for eHGVs, charging hubs at motorway service areas, and over 200 chargers by 2030.<sup>153</sup>

The project was announced as recently as late 2023, and its impact is yet to be observed. But as the 2040 deadline for zero emission HGVs approaches, it holds a great deal of promise in addressing the current gap in infrastructure and has the potential to catalyse the otherwise sluggish transition to electric HGVs.

*“Without a reliable and well-distributed network, range anxiety and charge anxiety will persist.” – The Environment and Climate Change Committee<sup>154</sup>*

## **Unreliable battery life means commercial EVs cannot compete like-for-like with fossil fuel vehicles**

Another challenge lies with manufacturing and technology limitations, specifically EV batteries. Not only does the cost of batteries make EVs more expensive to produce,<sup>155</sup> usually accounting for around 40% of the original vehicle's price,<sup>156</sup> there are also concerns around their effectiveness in commercial settings.

*“We were looking for an electric van, but there were some concerns about reliability.” – Jack, sports and fitness*

Range and charging anxiety, which stems from how far EVs can travel without running out of battery, is one of the biggest psychological barriers that deters people from getting EVs.<sup>157</sup> This is supported by an Auto Trader survey, which has identified battery range as the foremost concern among consumers, 61% expressing apprehension.<sup>158</sup> A survey by the Green Finance Institute has revealed that 62% of respondents were reluctant to purchase an EV due to concerns around battery life.<sup>159</sup>

*“I’m in the business of reliability. I need my tools to work.” – Cameron, logistics and delivery*

For some private consumers, issues around battery life may be a perceived risk, rather than one grounded in the actual capabilities of modern EVs.<sup>160</sup> As noted by the National Grid, “nearly 99% of all driven journeys are under 100 miles, with every EV on the market capable of handling this distance on a limited charge”.<sup>161</sup> Octopus has said that the average EV range in the UK is 211 miles, while some models can reach 300 miles.<sup>162</sup> This is not to say that battery limitations should be dismissed entirely – many drivers do undertake long journeys and require a reliable energy source to reach their destination without inconvenience – but it is important to acknowledge that, rightly or wrongly, there may be some misconceptions around battery life.



*“If our business was completely local, absolutely. It would be a no brainer. But at the moment we can’t afford to stop and charge.” – Louise, engineering*

That said, business vehicles have distinct use patterns and do not have ‘normal’ journeys, increasing the risk of batteries running out of charge. They tend to cover longer distances than typical passenger cars. When weight is added to an EV, such as with large vans or freight, it requires more power from the battery to achieve the same range.<sup>163</sup> Other factors such as how the vehicle is driven and environmental issues like temperature can also reduce the actual range of EVs,<sup>164</sup> while vehicles used to transport goods at specific temperatures – such as refrigerating perishable goods – require further battery power.<sup>165</sup>

*“Charging the battery takes too long, and we pay drivers per hour.” – Evan, transportation*

*My concern would be when it’s a dark winter’s night, you’ve got the heating blaring, you’re stuck in a traffic jam, and you have low battery. You have got to be so, so careful.” – Kevin, manufacturing*

*“We don’t carry only small packages, we can carry pallets up to 1 tonne. This is worse for batteries.” – Evan, transportation*

Consider a scenario where an electric van has to cover a large area for a job. If fully loaded and driven in winter, this can see some models’ ‘real-world’ range fall by almost half. The Peugeot e-Expert, for example, could see its official range of 186 miles fall to around 100 miles – a significant reduction. The limited availability of large electric vans with the battery power capable of carrying heavy payloads, such as white goods or heavy machinery, over longer distances means most businesses will likely struggle to find a vehicle that meets the demands of their tasks.<sup>166</sup>

Due to these hurdles, there is the view within the commercial sector that EV batteries cannot currently compete with ICE vehicles.<sup>167</sup> The reason for this is simple: watching a battery deplete and then waiting for a vehicle to charge when on the job, which can take up to 12 hours,<sup>168</sup> is not good for business.<sup>iv</sup> While many corporate vehicles will travel limited distances, fleets tasked with transporting bulky cargo over long journeys can experience additional strain on their batteries, resulting in faster depletion rates.

*“You need a bit more of a choice around what sort of engine size and what you are getting. Are you able to get four-wheel drive? A lot of our transportation has to negotiate hills and muddy country lanes.” – Jack, sports and fitness*

Until manufacturers can produce more powerful, longer lasting batteries,<sup>169</sup> employers are faced with a dilemma: continue using fossil fuel-powered vehicles for

<sup>iv</sup> According to Octopus Energy, charging an electric car at home, charging from 20% to 80% can take between 8 and 12 hours. If using faster public charging, it can take up to 8 hours. Charging an electric car using a 3-pin plug, which is the slowest way to charge and should only be used for occasional or emergency use, can take up to 20 hours. Having larger batteries, vans can take longer to charge at any particularly charging rate.

proven reliability; or transition to EVs, which are contingent on battery range and the accessibility of charging infrastructure, potentially jeopardising their business imperative. In time-sensitive situations, such as making delivery deadlines, additional logistical challenges may arise.

This raises concerns related to the suitability of EVs in commercial settings and whether necessary technical advancements can be realised in good time. However, the expectation from the ZEV mandate is that manufacturers will have to innovate to meet mandated targets, boosting technological progress, competition with ICE vehicles, and, as a consequence, demand for EVs.

*“With current batteries you can't drive more than X amount of miles, and we're doing long runs. Sometimes we go to Europe, we can't do that with electric vans.” – Evan, transportation*

The importance of effective batteries in the commercial EV debate should not be overlooked. As reported by the *Financial Times*, the global transition of transport away from fossil fuels hinges upon the development of better, longer-lasting batteries. Currently, EVs are powered by lithium-ion batteries which, due to plummeting costs, have helped to propel car sales. The problem is that the fundamental technology has remained more or less unchanged since being commercialised.<sup>170</sup>

*“The environmental stuff is something customers will ask us about, and we're mindful of it. But in the realms of small business, things actually have to work. We're as good as our last job, and customers won't prioritise sustainability over reliability, especially given urgency of the work we do. It's not viable.” – Cameron, logistics and deliveries*

A manufacturing breakthrough is considered by some to be on the horizon: solid state batteries. This “holy-grail” technology could drastically increase the range of EVs and deliver ultra-fast charging periods as early as 2027.<sup>171</sup> The impact of this would be disruptive, stamping down on concerns around battery energy density, lifetime, and charge time, barriers which make EVs unviable for many businesses.<sup>172</sup>

While manufacturers are working on developing these new technologies, the performance of lithium batteries – and costs – is also improving.<sup>173</sup> Table 6 below suggests that the future of EV battery technology is promising, with expected advancements in both price and range.<sup>174</sup>

**Table 6: Expected EV battery milestones**

Year	Expected battery price (£/kWh)	Expected battery range (miles)
2023	87.1	300
2024	95.4	500
2025	78.7	600
2026	64.2	621
2027	55.3	745

Source: GreenMatch

While batteries are set to improve in the coming years, with automotive manufacturers racing to develop even better innovations, there are issues around scaling up. This leads to some uncertainty about when technological advancements will lead to the widespread adoption of EVs.<sup>175</sup>

Amid all the hype around solid-state batteries, there are some critics who question their scientific feasibility, making them commercially viable and safe within a reasonable timeframe. Another challenge is with regard to the rapid and mass production of these technologies, as the complex manufacturing process may require longer-term investment and optimisation. Additionally, there are concerns that any future breakthroughs may be unable to bring down production costs, creating overly expensive products for consumers.<sup>176</sup>

*“I’m not sold on the technology that’s out there.” – Cameron, logistics and deliveries*

*“If there were a van on the market right now that had 400 miles without charge I could look at it, but not at the moment.” – Evan, transportation*

*“It’s just not convenient. It doesn’t warrant the hours we pay the workers.” – Louise, engineering*

Despite the promise of potential advancements, it is uncertain whether batteries can meet requirements for the global rollout of commercial EVs, especially larger vehicles. If technical, production, and cost barriers persist, the best technologies may be limited to select, higher-cost vehicles. With this in mind, and acknowledging anticipated breakthroughs, it may be pragmatic to adopt a wait-and-see policy approach to battery improvements, prioritising more immediate solutions to ensure the growth and viability of business EVs. We discuss this approach in further detail below.

**Table 7: Key challenges of businesses EV adoption**

	Summary
<b>High upfront costs</b>	Both new and second-hand EVs are priced higher than traditional vehicles, making them less affordable.
<b>Insufficient charging infrastructure</b>	Due to the lack of charging points and dedicated infrastructure for large commercial vehicles, limited charging accessibility risks stifling demand.
<b>Battery limitations</b>	With specific use patterns, long distances travelled, and heavy loads, battery limitations are a major cause for concern among commercial drivers who do not have time to wait to charge.

Source: SMF analysis

## CHAPTER SIX – NAVIGATING POLICY SUPPORT

Growth in the business EV sector has thus far been positive, pushed along by effective government policies. However, adoption is more sluggish than with passenger cars, while some key market barriers – high upfront costs, insufficient charging infrastructure, and battery limitations – currently serve as roadblocks to future adoption. What’s more, existing EV business policies are set to be scaled back, which further threaten to decelerate progress.

As noted by the CCC, the EV transition can only take place provided there are effective, long-term policies in place and concerted efforts within the wider EV ecosystem to sustain market transformation.<sup>177</sup> The IEA makes a similar argument, saying that policies, which are for the most part directed to personal EV uptake, need to be broadened out.<sup>178</sup>

With key policies about to expire, achieving continued uptake and long-term environmental sustainability may become increasingly difficult. This should prompt policymakers to reassess existing policies and consider implementing additional measures to accelerate adoption.

### **Existing subsidies should be maintained to sustain progress**

Several business-oriented EV policies are scheduled to end or be scaled back in 2025, raising concerns about sustained market growth. This includes the plug-in van and truck grant, earmarked as requiring long-term commitment; and the electric vehicle infrastructure grant, aimed at SMEs. Broader policies such as vehicle excise duty are also due to end.

Without extensions or replacements, businesses face the risk of increased costs and reduced incentives, potentially resulting in staggered adoption. In our view, it is too soon to withdraw these incentives, particularly as price parity has not yet been reached. Policy has played a significant role in driving uptake, and given the ongoing increase in sales any fiscal support should also be sustained. While the Workplace Charging Scheme is deemed ineffective and may be better left to phase out, there is still a place for policies that encourage businesses to make the switch.

Even the benefit in kind company car tax, considered the most effective policy intervention for driving EV adoption, is shrouded in uncertainty. Currently, the benefit in kind rate will increase by 1% every year until 2028, beyond which future plans remain unclear. While the incremental increases are modest, it is possible they will accelerate in four years’ time or the policy may expire altogether. This lack of clarity may discourage some drivers from opting for electric company car under the scheme.

There is little to suggest a reversal in demand among commercial fleets, therefore retracting good policies are likely to be unhelpful to the cause. There is still progress to be made, and businesses require confidence of support, especially those that remain on the fence about transitioning to EVs. Otherwise, demand – and adoption rates – may plummet from as early as next year.

## Funding should pivot towards addressing infrastructure issues

Charging infrastructure has emerged as the primary concern among business owners interviewed as part of this research, a sentiment supported by considerable literature. With there being significant business interest in transitioning, together with the impending increase in the flow of EVs, as mandated by the ZEV policy, it is crucial to ensure Britain's roads are adequately prepared to accommodate this influx and that commercial drivers are not caught short while carrying out their business operations.

This requires investment in EV charging infrastructure. There are already concerns that the number of chargepoints in the UK may struggle to keep pace with the number of EVs set to enter the market under the mandate, with estimates suggesting a potential shortfall of 2 million, according to the SMMT.<sup>179</sup>

Recognising this significant gap, the Environment and Climate Change Committee has urged the government to accelerate the rollout of funding schemes for charging infrastructure to prevent discouraging drivers from making the switch.<sup>180</sup> As well as improving the availability of charging points, there may also be scope for standardising equipment – improving interoperability and accessibility – through regulation, like in the United States.<sup>181</sup>

Given these concerns, the improvement of charging infrastructure must be a priority for the government and the Office for Zero Emission Vehicles. Ensuring adequate power supplies and widespread public charging networks, particularly for use in commercial settings, is crucial for electrifying fleets. This includes vans, which, despite progress, lag in sales and remain very much off course of ZEV targets.

Already considered a key barrier to adoption, the continuous flow of new EVs into the market dictated by the ZEV mandate means supporting infrastructure will soon become essential to meet escalating demand. It is important to note that investing in charging infrastructure would not only benefit businesses but also support the needs of hundreds of thousands of personal drivers on the road, stimulating demand among consumers.

### Box 1: Norway has heavily subsidised its EV charging infrastructure

Norway is recognised as a shining example of EV adoption, attributed to its long-standing supportive policy environment.<sup>182</sup> For over three decades, the country has provided incentives such as tax exemptions for EVs,<sup>183</sup> resulting in the highest share of electric car registrations worldwide,<sup>184</sup> impressively reaching 88% in 2022.<sup>185</sup> Recent estimates also indicate that 29% of LCVs sold in Norway are electric.<sup>186</sup>

One part of Norway's success is its increasingly dense EV charging network, heavily subsidised by the government.<sup>187</sup> With around 16,000 charging points across the country,<sup>188</sup> it boasts more than 9% of Europe's total charging stations, an impressive achievement considering its fractional population share. This includes the strategic placement of fast-charging stations every 50km along all main roads, including what is dubbed the "world's number one fast-charging station".<sup>189</sup>

While Norway has faced challenges in scaling up, it has reaped the benefits of "taking early, decisive action", in the words of McKinsey, to keep pace with rapidly increasing demand. It has swiftly installed chargers at various locations including shopping centres, gyms, universities, and on highways, even replacing traditional gas pumps at stations. It is reported that 200 super-fast chargers have been installed at public charging stations.<sup>190</sup>

Lessons of effective chargepoint development can also be gleaned from other countries with advanced infrastructure approaches. China, for instance, has expanded its fast-charging infrastructure to accommodate its growing commercial fleet.<sup>191</sup> Similarly, the Netherlands has outlined a roadmap for charging infrastructure tailored to medium- and heavy-duty vehicles, acknowledging their role in significantly reducing local pollutants and emissions.<sup>192</sup>

A critical consideration is the charging capabilities of EVs, with commercial entities requiring faster charging to ensure reduced downtime.<sup>193</sup> According to van drivers, charging time remains the number one concern around purchasing an EV.<sup>194</sup> While a dense network of charging points provide convenient access for drivers, to ensure commercial fleets and vans in particular are not excluded from any future infrastructure advancements a more appropriate metric may be the availability of fast charging points.

Norway's infrastructure commitment serves as a valuable model for the UK to emulate. Indeed, the EU is already following in Norway's footsteps, mandating fast-charging stations every 60 kilometres, with at least one 150kW super-fast output over this distance.<sup>195</sup>

The government's rapid charging fund (RCF), announced in 2020, intends to support this effort by providing funding of almost £1 billion to the grid connections required for fast charging networks. It aims to futureproof grid capacity and accelerate the

availability of high-powered chargers,<sup>196</sup> with the goal of ensuring drivers are always within 30 miles (48 km) of an ultra-rapid charging station.<sup>197</sup> Modelled on the charging profile of the UK's HGV fleet, the RCF aims to support the development of 2,500 high-powered charge points across the country's motorways and major roads by 2030, increasing to 6,000 by 2035.<sup>198</sup>

Despite the ambitions of the initiative, known as 'Project Rapid',<sup>199</sup> the fund has been rolled out slowly,<sup>200</sup> with a £70 million pilot scheme starting from December 2023.<sup>201</sup> Even if the fund and the promise of better underlying infrastructure were to become fully operational, a critical gap remains: the need for actual charging points.

### **Any new EV policies should be directed to consumer subsidies, which are likely to be most impactful for encouraging widespread adoption**

The recommendations provided address two of the three challenges identified in this report. First, they help to tackle the upfront cost of EVs, by proposing the continuation of effective government policies beyond 2025. Secondly, they aim to alleviate insufficient infrastructure concerns and charging anxiety through greater development and investment.

The third challenge relates to limitations in current battery technology. Unreliable battery life represents a significant barrier to adoption, as it prevents commercial EVs from competing like-for-like with fossil fuel vehicles and renders them unviable for some businesses. While advancements in battery capabilities are expected, there are challenges regarding scalability and uncertainties about their readiness for widespread EV adoption.

It is also worth noting that the UK already has a battery strategy, which has committed £2 billion in funding to support the development of globally competitive British EVs and their batteries.<sup>202</sup> This is happening against the backdrop of a global race among manufacturers to develop superior batteries.<sup>203</sup> Given budget constraints and other pressing concerns, such as purchase costs and charging infrastructure, prioritising battery development may not be necessary for boosting adoption at this time.

Acknowledging anticipated breakthroughs in battery technology, the pragmatic approach to encouraging EV growth is to focus on more immediate solutions. Until the promises of better batteries materialise, the business fleet should be deprioritised in new policy decisions – though not neglected entirely. While R&D investment could potentially help to hasten development, we believe the allocation of public funds should be directed to areas where they can have the most rapid impact.

We suggest the most impactful form of new support would be focused on consumers, specifically through the implementation of 'social leasing' policies. In this report's counterpart study<sup>v</sup> examining the affordability of EVs among personal consumers, we

<sup>v</sup> See the SMF report, *Electric avenue*, for full details.



proposed that while direct subsidies and tax incentives can effectively narrow the price gap between EVs and ICE vehicles, they come at a high cost.

This is because many drivers who use these programmes may have bought an EV anyway, or would have done so for less subsidy. Social leasing, on the other hand, targets low-income households. Drawing inspiration from France’s approach to social leasing, we recommend the introduction of social leasing for EVs in the UK.

### Box 2: France’s social leasing approach to targeting SMEs and consumers

France’s social leasing program aims to address affordability concerns by subsidising EV leases for low-income households. Under this programme, eligible households – based on their income, annual mileage, and distance from workplace – can lease an EV for an average of €100 per month.<sup>204</sup> The household then pays €50 to €150 per month depending on the model, with the government paying the difference between that amount and the market rate.<sup>205</sup>

At the end of the contract, the household has the ability to give the vehicle back to the leasing company or purchase it at its market rate minus the payments already paid during the lease. This means households also benefit from the depreciation the car goes through over the first three years, effectively allowing them to buy a used car.<sup>206</sup> By participating in this programme, low-income households can lease a car for less than they would otherwise spend on an ICE vehicle, while also benefiting from operational savings.

The scheme attracted enormous demand. Applications opened in 2024, and immediately provoked more interest than policymakers had expected. Facing high demand, eligibility was doubled from 25,000 to 50,000, before policymakers announced the program was closed for new applications until the next year. The government claims it received more than 90,000 applications before the end of January.<sup>207</sup> A French policymaker interviewed by the SMF claimed this success “showed that the French are ready for EVs if they are affordable.”

Following in France’s footsteps, we propose the introduction of social leasing for EVs in the UK, priced at £100 per month. By targeting funding to low-income households, helping to increase EVs adoption among hard-to-reach drivers, the benefit of social leasing is threefold: it minimises costs for the state, aids those most at risk of transport poverty, and reduces greenhouse gas emissions.

We estimate that implementing a similar scheme for 100,000 EVs would initially cost £175 million per year, rising to £522 million as the programme takes on more and more people over the course of three years. If properly targeted, this could pull over 500,000 people out of poverty, while taking between 900,000 and 1.5 million tonnes of carbon out of the atmosphere every year.

## Policy recommendations for driving EV adoption

Growth in the business EV sector has thus far been positive, pushed along by effective government policies. However, adoption is more sluggish than with passenger cars, while some key market barriers – high upfront costs, insufficient charging infrastructure, and battery limitations – currently serve as roadblocks to future adoption. We recommend that:

1. The government extends key EV subsidies, ensuring that adoption in the commercial sector does not plummet.
2. Following Norway's example, expedite funding to the rollout of EV charging infrastructure to ensure supply continues to meet demand.
3. Implement social leasing that targets funding to low-income households, encouraging adoption while pulling thousands of people out of transport poverty.

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