

# 4. Purchasing and Leasing Electric Vehicles



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### 4.1 Current Market Context

Monthly new vehicle registration statistics divide new registrations into two categories – vehicles registered by Fleets (including businesses, leasing companies and vehicle rental companies) and those registered by Retail (i.e., consumers). Historically, the split is approximately half and half<sup>19</sup>.

To date, the majority of EV registrations have come from the corporate fleet market, driven by a combination of corporate sustainability targets and progressive fiscal policies, such as low benefit-in-kind (BiK) rates, which together with lower running costs of EVs compared to ICE cars, have helped boost demand. New car registrations by business fleets are important as these vehicles are typically operated for 3–4 years and then enter the used car market for consumers. This growth is expected to continue if fiscal policies continue to favour EV over ICE and if the UK's charging infrastructure keeps pace with a growing vehicle parc. Our analysis showed little need for financial innovation within the corporate fleet market for purchase and leasing of the vehicles themselves, although businesses and vehicle rental companies do require finance solutions for more costly charging infrastructure.

To achieve mass adoption of EVs in the UK, growing uptake within the corporate fleet market needs to be matched by accelerated growth in the retail (consumer) market, particularly in the used car market. To date consumer adoption has been slower because of the higher upfront cost of the vehicles, consumer concerns about access to reliable charging infrastructure and lenders' concerns about the risks relating to EV residual valuations<sup>20 21</sup>. The cost issue is compounded by the fact that total cost of ownership (i.e. the combined cost of the vehicle and running costs, which in some instances can be less than an equivalent ICE vehicle, see Table 2) is not clearly understood by consumers. In addition, nervousness around the suitability and useability of the new technologies and the perceived complexity and inconvenience involved in switching to an EV creates consumer inertia in relation to switching. These barriers apply to both the new and used market, with the added barriers of ageing technology and battery health concerns in the used car market, caused by the fact there is no trusted methodology to demonstrate battery reliability to a potential used EV buyer.

Incentives are needed to help consumers overcome these technology-related concerns. Where they have been used they have been effective – as demonstrated by strong growth in salary sacrifice fleets in 2021<sup>22</sup>. Bundled packages (i.e., financial products covering the cost of both charging and the vehicle cost and simplifying the acquisition process) are a convenient and attractive way to address perceptions of higher cost; however, existing consumer credit regulation is a barrier to realising the offering of such packages.

<sup>19</sup> SMMT (2021) Vehicle data: car registrations.

<sup>20</sup> Residual value can be defined as the forecast value of the vehicle at the end of the finance contract period.

<sup>21</sup> Ofgem (2021) Insights into consumer attitudes to decarbonisation and future energy solutions.

<sup>22</sup> BVRLA (2021) Road to Zero Report Card 2021.

If solutions can be developed, the prize is large. We forecast there is potential for the EV consumer financing market to be worth £31 billion annually by 2030, with cumulative growth of £140 billion between 2021 and 2030<sup>23</sup>. Most of this value will come from the sale of new EVs (see Figure 6). Alternatively car clubs such as Zipcar, and ride-hailing solutions such as Uber, are available for drivers who need occasional use of an electric vehicle.

*“94% of new cars, and an increasing percentage of used cars, are bought using consumer finance. This means that, if the Government’s 2030 target is to be met, it’s not sufficient just for ‘sticker’ price parity between ICE cars and EVs to be achieved but also ‘pocket’ price parity – taking into account finance, maintenance, and running other costs as well.*

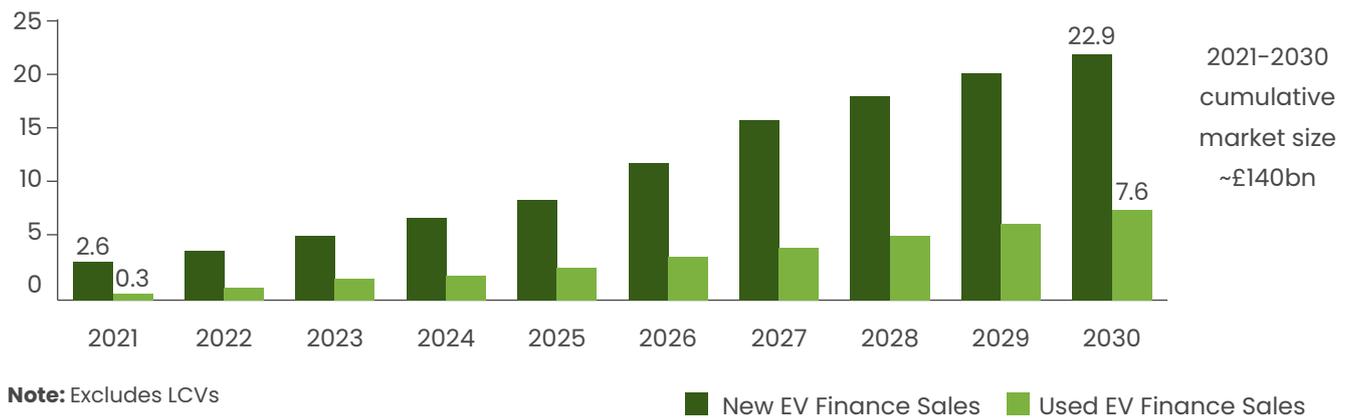
*This means recognising that we’re starting from a position where financing EVs currently attracts a range of elevated credit risks, including residual value risk. Where credit risks are higher, so are credit prices and credit availability.*

*We have no doubt that solutions can be found to address these risks. While we recognise that managing risk is what our sector does best, we also believe that Government has a place to underwrite some of these risks on a transitional basis as part of a credible plan to achieve the 2030 target.”*

**Adrian Dally**, Finance and Leasing Association (FLA)

**Figure 4**

**Forecasted value of new and used consumer EV financing market, (£bn)**



<sup>23</sup> CDRT analysis – projection based on modelling of number of transactions x average deal size.

A range of established consumer financing options are available to retail customers wishing to access a vehicle today. These include personal loans; hire purchase, conditional sales or personal contract purchases (PCPs); hire products (including personal contract hire); subscription products; and salary sacrifice (see Box 1). Alternatively car clubs such as Zipcar, and ride-hailing solutions such as Uber, are available for drivers who need occasional use of an electric vehicle.

**Box 1**

- 1. Personal loans** – Consumers can take out personal loans from their bank and pay for a vehicle with the equivalent of cash. That gives the consumer a loan relationship with their bank but is ultimately a cash purchase, where the consumer takes the asset risk.
- 2. Hire purchases, conditional sales or PCP** – These are credit products where the lender takes the asset risk throughout the duration of the contract term.
- 3. Personal contract hire** – The consumer uses the product and gives it back at the end of the hire term, often for a replacement on a new contract. Once again, the lender takes the asset risk.
- 4. Subscription products** – These products, offering shorter term, more flexible vehicle usership, are also growing in popularity, but often come with a price premium. The provider takes the asset risk.
- 5. Salary Sacrifice** – Employees can finance a fully maintained and insured car through payroll deductions. Typically, only available to employees of large organisations, although providers for SMEs are beginning to emerge. Again, the lender takes the asset risk.

Theoretically, these consumer finance mechanisms can be used to purchase EVs. However, there are – in some cases – some significant challenges to rolling them out from the lenders' perspective. One of the biggest issues is the nascent nature of the EV market, which means there are fewer data points from which lenders can price for asset risk. The absence of such data can lead to higher monthly costs for consumers financing or leasing vehicles, due to the need for lenders to make cautious assumptions about future residual values. For the consumer focused on price, this can make an EV a less attractive option than an ICE, due to the higher monthly repayments. In addition, concerns around the longevity of batteries in used vehicles – which is a key input to determining residual value – means some independent lenders are unwilling to offer finance on used EVs at all.

Currently almost all new retail car sales are facilitated by consumer finance products (92% up from 54% in 2010); in the used market consumer finance products support around 32% of sales<sup>24</sup>. Thus resolving the challenges faced by lenders in rolling out EV consumer finance products in the new and used market is key to increasing the adoption of EVs in the UK.

<sup>24</sup>. CDRT Analysis

**Box 2****What is a Residual Value?**

In the context of motor finance, residual value refers to the expected resale value of the vehicle at the end of a finance or leasing agreement. The estimated residual value is calculated by the lender or lessor at the start of the agreement, either by a third party (such as CAP HPI) or by internal teams and is a key factor in determining the monthly finance or lease payments.

**How are Residual Values calculated?**

To calculate the expected residual value, a variety of data points are assessed including but not limited to:

- Vehicle specific data – manufacturer, model, vehicle specification, fuel type, fuel efficiency
- Economic data – registration volumes, GDP, inflation, unemployment, interest rates, exchange rates
- Editorial data – peer vehicle comparisons, expected regulatory changes, latest used values, future trends

For ICE vehicles, robust data points exist going back more than 15 years. For EVs, there remains very little editorial data due to relatively low registrations to date, and with added factors such as battery health and the ability of some manufacturers to increase a vehicle's battery range via a software update, the residual value setting process requires a greater degree of subjectivity.

**Why is Residual Value important?**

Predicting a used car price some way ahead is therefore critical to car manufacturers, leasing companies, fleet operators and private car buyers so they can budget reliably as to what a car will be worth in the future when economic and legislative conditions might be totally different. The confidence with which lenders can predict residual values impacts the provisions which need to be held on the balance sheet to mitigate future residual value losses and therefore the amount of residual value risk lenders are willing to hold.

**4.2 Barriers**

The Coalition considered the barriers to scaling up consumer finance for EVs from the perspective of the three sets of market participants: consumers, lenders (both banks and captive finance houses owned by manufacturers) and market intermediaries (i.e. car dealers and leasing brokers). The barriers fell into five categories that apply to all market participants, albeit not equally.

- (1) EV list price premiums
- (2) Residual value uncertainty
- (3) Technology obsolescence and longevity of batteries
- (4) Availability of charging infrastructure; and
- (5) Regulation

**1. EV list price premiums****Table 2:** New Car Total Cost of Ownership Comparison

Model	Vauxhall Corsa (Petrol)	Vauxhall Corsa-e (Electric)	Delta £	Delta %
Manufacturer's List Price (after grant)	£21,814	£30,690	£8,876	29%
Annual Lease Cost	£4,406	£5,267	£861	20%
Annual fuel cost	£1,100	£400	-£700	-64%
Annual tax and maintenance	£585	£177	-£408	-70%
Annual insurance	£423	£566	£143	34%
Total annual running cost	£6,514	£6,410	£104	-2%

**Source:** Lex Autolease, Vauxhall Corsa Hatchback 1.2 Turbo Elite Nav Premium 5dr & Corsa-E Hatchback 100kw Elite Nav Premium 50kwh 5dr Auto on personal contract hire for 36 months, 10,000 miles per annum.

As noted in Table 2, the total cost of ownership can be similar or even lower for EVs versus a comparable ICE vehicle due to the lower running costs associated with EVs (which includes lower maintenance, road tax and fuel bills). Despite this, list price is still the primary driver of many consumers' decision making, even when they use consumer finance or leasing solutions instead of outright purchasing. Today's EVs carry a list price premium and are not expected to reach list price parity with ICEs until the mid-2020s, based on projected reductions in the cost of batteries<sup>25</sup>. On average, volume hatchback cars are 73% more expensive than ICE equivalents, and volume SUVs 25% more expensive<sup>26</sup>. This price premium also extends to today's used car market. As a priority, the lack of widespread understanding of the total cost of ownership concept and how this relates to list price needs to be tackled, both in the new and used markets. This is because to achieve mass adoption, the creation of a viable second-hand market for EVs is essential for the majority of consumers who will be buying used<sup>27</sup>. Solutions such as the savings calculator provided by Electric Car Guide should be more widely promoted<sup>28</sup>.

The list price premium challenge is compounded by manufacturers focusing on the higher end of the market for new product development. The premium end of the market is inaccessible to the majority of consumers today and access is often contingent on having a high credit score. In addition, manufacturers continue to provide significant discounts on new ICE vehicles in order to boost new vehicle sales and grow market share. An increased supply of more affordable EVs is needed – and is expected to be forthcoming as demand grows<sup>29</sup>.

Another price lever lenders can use to reduce the cost of access to an EV is simply to reduce interest rates on consumer finance products. These interest rates are typically higher for used vehicles than for new vehicles because new vehicles benefit from manufacturer-backed subsidised finance and, typically, a higher credit-quality customer base. Solutions that lower the cost of capital for lenders in the used EV market will benefit consumers if those pricing benefits can be passed through to them.

In terms of addressing these barriers, solutions that focus on tackling the list price premium in the new and used markets, simplify the acquisition process, and provide better information on the total cost of ownership, are needed. The Coalition's demonstrator solutions 2 (0% Consumer Finance Loans), 3 (Means Tested Subsidised Loans) and 8 (Salary Sacrifice for SMEs) aim to reduce the cost of financing an EV. Demonstrator solutions 5 (Total Cost of Ownership Principles) and 7 (Bundled Finance) can provide information and simplify the acquisition process for consumers.

<sup>25</sup> BNEF (2021) Electric Vehicle Outlook 2021.

<sup>26</sup> AutoTrader advertised sale prices, October 2021.

<sup>27</sup> Department for Transport (2021) VEH0253: Cars registered for the first time by propulsion and fuel type – In 2019 there were 2.3 million new cars registered, accounting for 22% of total car transactions, with ultra-low emission vehicles making up just 3.4% of those registrations. In comparison, used car transactions amounted to 7.9 million, representing 78% of total transactions, with alternatively fuelled vehicles making up just 1.8% of that, proving that the second-hand market for EVs is still somewhat underdeveloped.

<sup>28</sup> Electric Car Guide (2021) Savings Calculator.

<sup>29</sup> Transport & Environment (2021) Explained: Are we ready to switch to emissions-free cars?

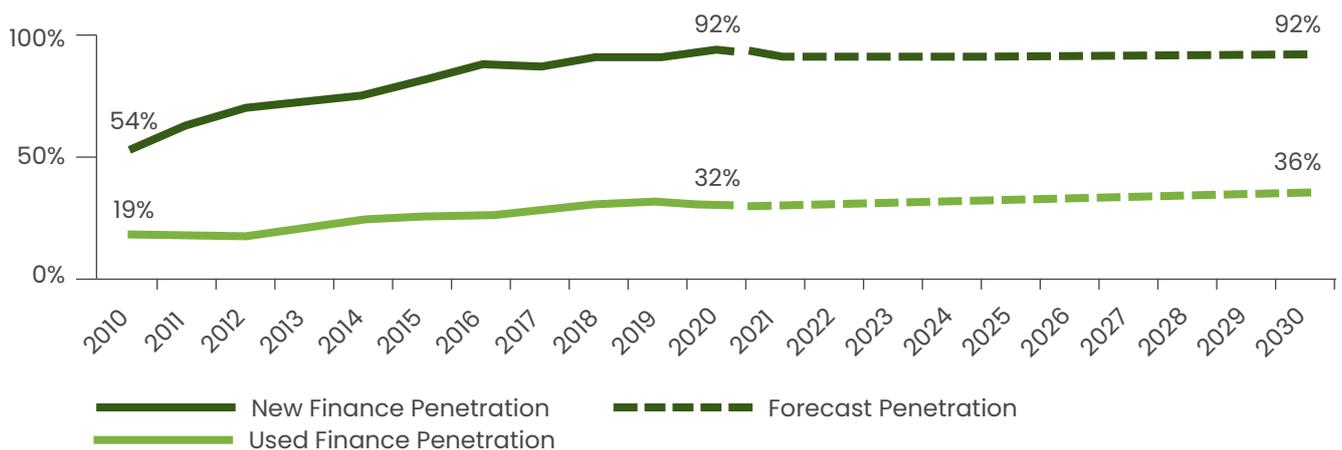
## 2. Residual value uncertainty

Due to limited data on resale values of EVs into the used market, lenders are reportedly taking a more cautious approach to setting residual EV values compared to ICE vehicles; this is a key driver of higher monthly finance repayments for EVs.

To date, the low number of vehicles entering the used market, coupled with low demand from consumers for used EVs, particularly premium models, has resulted in volatile residual values. This volatility is beginning to fall as consumer demand grows, and more data becomes available. But as new car sales return to their pre-pandemic levels (an increasing proportion of which are electric), demand for used EVs needs to increase rapidly in line with supply if used EV prices are not to be depressed. As presented below in Figure 7, around a third of used cars are bought using consumer finance, which is why making finance providers comfortable with residual values is critical to ensure that supply of competitively priced finance can support forecast market growth. While there is market consensus that lenders are responsible for managing residual value risk, there may be a role for government to intervene in the short term to offer lenders comfort and enable additional balance sheet lending.

**Figure 7**

**Historical and forecasted new customer vehicle finance penetration rate, (%)**



**Source:** CDRT Analysis

To achieve this, the Coalition is developing solutions focused on the most immediate issue for lenders: mitigating existing residual risk and identifying ways to reduce volatility of future residual values. Demonstrators 1 (EV Loan Securitisation) and 6 (Battery Value Guarantee) both aim to mitigate residual value risk on lenders’ balance sheets through guaranteeing an element of residual value.

In due course there may also be a need to develop different approaches to setting residual values, with novel data inputs such as battery health and charging history, which are not reflected in ICE depreciation curve modelling, and which have traditionally focused on vehicle age and mileage.

### 3. Technology Obsolescence and Battery Longevity

Uncertainty around the future technology roadmap for road transport decarbonisation and pace of technology innovation is exciting but also risky. Both consumers and lenders often see the pace of innovation mainly as a risk, based on concerns that they are investing in technology that may quickly become outdated. The possibility of hydrogen fuel cell vehicles competing as a major alternative to EVs and the expectation of solid-state batteries with 500+ mile ranges are often cited as reasons some consumers are unwilling to invest today, and one of the reasons for continued uncertainty about future residual vehicle values. Unique to used EVs is concern about the remaining useful life of the battery and, more particularly, what range can be achieved over time compared to the range manufacturers state for a new vehicle – and how that should be reflected in the used list price.

This is a legitimate concern. In the EV market, falling prices of new EVs combined with longer ranges for these new vehicles currently make a used EV less attractive to consumers both from a price and technology perspective, in turn making them harder to sell. Figure 8 sets out how technology-related risks are reflected in monthly finance costs, as advertised in AutoTrader. This has a knock-on effect on residual value setting, creating further demand uncertainty both in the used and new sales market. Coalition members therefore identified building confidence in the used EV market as a priority area of focus. Demonstrators 4 (Battery Health Certificate) and 6 (Battery Value Guarantee) seek to do this by independently certifying a used battery's condition and providing a minimum value to which a vehicle depreciates.

**Figure 8**  
**Comparing Finance ICE (Clio) vs EV (Zoe); New, Nearly New, Used**  
**Monthly payment when applying consistent parameters**

	New Clio	<1 Year Clio	3 Year Clio	New Zoe	<1 Year Zoe	3 Year Zoe
<b>Monthly Payment</b>	<b>£173</b>	<b>£100</b>	<b>£53</b>	<b>£255</b>	<b>£316</b>	<b>£90</b>
Customer Deposit	£3,750	£3,750	£3,750	£3,750	£3,750	£3,750
Cash Price	£16,595	£12,000	£8,550	£29,995	£22,995	£11,950
Government Grant	-	-	-	£3,000	-	-
OEM Contribution	£1,000	-	-	£3,000	-	-
Total Amount of Credit	£11,845	£8,250	£4,800	£20,245	£19,245	£8,450
Optional final payment	£7,001	£6,854	£4,209	£13,029	£11,983	£7,553
Total amount payable	£17,994	£14,209	£9,866	£28,966	£27,143	£14,286
Duration	37 months					
Representative APR	4.9% APR	9.9% APR	9.9% APR	3.9% APR	8.9% APR	9.9% APR
Annual Mileage	10,000 miles					

**Note:** Figures correct at April 2021. Although vehicle pricing, Government Grant and OEM contribution will change, the used EV remains expensive compared to new, with no incentives to support. The Plug in Car Grant has since reduced to £2,500.

**Source:** Autotrader.co.uk, Renault.co.uk

Concerns about obsolescence are a common feature in new technology markets and should fall away as more EVs are successfully deployed. However, given the short timeframe in which the market needs to transition to EVs, there is a strong value case for intervening. In the short term, more active education programmes to raise awareness of the UK's future technology roadmap and the key role of EVs can help alleviate concerns about the pace of change for consumers, intermediaries, and lenders. Raising awareness of the benefits of consumer finance products such as personal contract purchase and personal leases in transferring this risk to the lender (via a guaranteed future value) could also support consumer adoption. In addition, the Coalition identified a need for solutions that build confidence in the health of a used vehicle battery, for both lenders and consumers: Demonstrators 4 (Battery Health Certificate) and 6 (Battery Value Guarantee) seek to do this by independently certifying a used battery's condition and providing a minimum value to which a vehicle depreciates.

#### 4. Charging Infrastructure

Aside from the vehicles themselves, consumer confidence about transitioning to an EV is hampered by a lack of widespread and suitable charging infrastructure within the UK today, a lack of clarity about the cost of public charging, the complexity of paying for multiple providers, and a general lack of understanding of expected charging patterns. This is often exacerbated by media articles citing the issues with existing infrastructure. Charging infrastructure concerns are significant and addressed in the second part of this report.

#### 5. Regulation and Public Policy

Coalition members highlighted some areas where regulation represents a barrier to providing finance to consumers for EVs, and where public policy interventions can facilitate increased private investment.

The regulatory backdrop of the Consumer Credit Act represents a barrier to creating innovative new financial mechanisms that could make it easier for consumers to finance or lease an EV, such as bundling the financing of the vehicle with access to charging infrastructure into one payment.

For example, lenders cited concerns about the risk of increased numbers of sales quality disputes, for which they are liable under s75 of the Consumer Credit Act. This is underpinned by perceptions of a high risk of dealers and brokers selling unsuitable EVs to consumers, the latter of whom can then exercise their right of return. Right of return and voluntary termination protections for consumers also make it difficult for lenders to provide bundled solutions that would enable consumers to wrap purchases of home chargers, vehicles and green energy tariffs into single monthly payments, which would help make more visible to consumers the lower total cost of ownership compared to ICEs. Updating consumer regulation to work for rather than against the EV finance market should be considered a priority area of focus for regulatory change.

##### **The importance of regulation in financial product design**

The regulatory backdrop of the Consumer Credit Act represents a barrier to creating innovative new financial mechanisms that could make it easier for consumers to finance or lease an EV, such as bundling the financing of the vehicle with access to charging infrastructure into one payment.

*“It is entirely possible to maintain existing high standards of consumer protection, at the same time allowing for financial services legislation to be relaxed, and exemptions to be offered. The current financial services legislative regime does not support government policy around road transport decarbonisation. It is in the Government’s interests to invest time and effort in giving the financial services industry customers certainty, clarity and simplicity”.*

**Stephen Dawson**, Partner at Shoosmith’s,

As noted earlier, fiscal measures including reduced rates of benefit-in-kind tax for EV company car drivers and vehicle excise duty have helped stimulate demand from business drivers through offering financial incentives to offset the risks and the cost of switching to an EV. As the EV market remains at an early stage of development, clarity on how such incentives might continue to be targeted through to 2030 would enable the leasing sector, for example, to provide full and accurate pricing on contracts beyond 2021, supporting demand for new finance agreements. These new business registrations will remain important to supply the used EV market for consumers. The application of reduced rates of BIK tax to salary sacrifice is helping employees who do not usually qualify for a company car to access EVs, as evidenced by strong recent market growth reported by scheme providers<sup>30</sup>. Such schemes should be more widely promoted and thought given to how they could be accessed by smaller businesses with a lower administrative burden. Clarity on how the Government's income from fuel duty might be replaced with new income streams is also important as it would give consumers and businesses confidence to transition ahead of 2030.

Further barriers, some specific to particular market participants, were identified by Coalition members as being important to address. These include a general lack of awareness of the environmental impact of switching to an EV or plug-in hybrid, which is compounded by misleading media articles, and mean that many consumers believe that EVs are no better than ICE vehicles for air quality and the environment. The added complexity of learning how to charge an EV and fears about the capacity and cost of using public charging network means that many consumers remain nervous about choosing an EV. Dealer showrooms represent an opportunity to educate and inform consumers, but in an already complex sales process it can be difficult for dealers, particularly independent dealers without access to manufacturer franchise support, to feel incentivised to promote EVs as an attractive alternative to ICE. Facilities such as the EV Experience Centre in Milton Keynes<sup>31</sup> and the Arnold Clark Innovation Centre<sup>32</sup> in Glasgow and organisations such as EVA England can be valuable educational resources for consumers and should be more widely promoted as sources of information to build consumer confidence. Tools such as the EV8 Switch app<sup>33</sup> launched by DfT in September 2021, with support from NatWest, can also help consumers understand the suitability of an EV based on their individual driving needs.

### 4.3 Demonstrator Solutions

Many of the barriers set out in the previous section are expected to dissipate as the market matures, particularly once purchase price parity is reached between EVs and ICEs. However, without intervention to accelerate the time taken to reach price parity, there is a risk consumers wait, failing to send demand signals to manufacturers producing EVs, resulting in the market failing to make an orderly transition to exclusively electric new car and van sales in 2030. Scaling up financial solutions will be key in this process.

The Coalition has selected the most promising interventions for helping facilitate this, which have emerged from discussions to date. The solutions require a mixture of adapting existing products, amending legislation and developing new financial mechanisms. They were conceived by Coalition members to address the barriers identified to widespread consumer adoption of EVs by enabling consumers to access EVs at a lower cost, simplifying the purchasing process, or allaying fears of technology obsolescence. Some solutions build on existing market offerings developed for other sectors or jurisdictions; others originated from the collective creativity of Coalition members.

The following section sets out the list of potential demonstrator solutions in more detail and provides further information on each. Each template includes an overview of the project, its intended outcomes, key delivery partners and potential policy levers.

<sup>30</sup> BVRLA (2021) Road to Zero Report Card 2021.

<sup>31</sup> <https://evexperiencecentre.co.uk/about-us/>

<sup>32</sup> <https://www.arnoldclark.com/innovation-centre>

<sup>33</sup> <https://apps.apple.com/gb/app/carbondiem/id1512971216>

<b>Demonstrator Solution 1:</b> <b>EV Loan Securitisation</b>	<b>Consumer</b> 	<b>Lender</b> 
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**Overview:** EV securitisation will enable larger EV loan lenders to aggregate loans or leases for sale in the secondary market. The balance sheet released can then be deployed toward further EV loans or leases. A residual value risk guarantee provided by a government entity/third party would mitigate the residual value risks relating to EV loans, currently the key barrier to pure EV securitisations.

For smaller originators, a residual value risk guarantee can be provided to a warehouse facility set up to aggregate smaller standardised EV loans or leases in which multiple originators’ loans are grouped, packaged, tranching and sold to investors. This will need to be underpinned by green loan and lease principles to facilitate the standardisation and bundling of contracts.

**Outcome:** Green loan and lease principles combined with guarantees address risk and facilitate bundling and aggregating of securities, freeing up capital for lenders to provide further loans and leases, as well as creating more green bond investment opportunities.

**Delivery partners include:**

- EV Loan Originators / Banks
- Securitisation platform provider
- Secondary auto loan market investors
- Rating agencies
- HMT

**Policy levers to support demand and scale up:**

- In the early stages of market development, UK government could provide a residual value risk guarantee structure to insure investors against market failure. This would recognise the societal benefit accruing from stable used EV prices in creating consumer confidence in the used market

<b>Demonstrator Solution 2:</b> <b>0% Consumer Finance for EVs</b>	<b>Consumer</b> 	<b>Lender</b> 
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**Overview:** To overcome the list price premium for new and used EVs, a pilot is proposed, building on the key lessons from the Scottish Government 0% EV loan scheme<sup>34</sup>, to provide 0% motor finance that would lower the cost of acquiring an EV and drive greater demand for EVs.

A time-bound pilot 0% or very low interest rate offer has been funded by Quadrature Climate Foundation and operated by Energy Saving Trust. It is similar to that provided by the Scottish Government, which provides unsecured loans of up to £28K to purchase an EV. In effect, the structure would guarantee the additional credit risk associated with EV compared to ICE loans. Building on lessons learned from the 0% EV loan in Scotland, the pilot scheme will identify the barriers faced by consumers in the sales process and put in operational processes that overcome some of the challenges identified. The project will also cover e-bikes and could extend to other forms of mobility.

**Outcome:** Reduces the cost of finance for consumers, narrowing the price premium of EVs vs ICE. Initially focused on one city in England, the initiative would stimulate demand for EVs in a demographic not expected to be early adopters and raise awareness of the lower running costs associated with EVs, stimulating further demand.

**Delivery partners include:**

- Energy Saving Trust
- EVA England /Consumer groups
- Motor finance providers/brokers
- Credit Reference Agencies
- Motor dealers

**Policy levers to support demand and scale up:**

- N/A

<sup>34</sup> Energy Savings Trust. Interest-free electric vehicle loan.

Demonstrator Solution 3: <b>Means-Tested Subsidised Loans for Used EVs</b>	Consumer ✓	Lender ✓
<p><b>Overview:</b> To expand the used EV market and facilitate access to EVs for a wider range of income groups through providing means-tested subsidies for both consumer loans and for leasing agreements. Loans would be provided based on a maximum income threshold, thus ensuring public funding is targeted in a progressive manner.</p>		
<p><b>Outcome:</b> Financial support targeting lower income households would accelerate a more inclusive transition to mass EV adoption, particularly if targeted to groups least likely to switch from older ICE vehicles, given the financial barriers.</p>		
<p><b>Delivery partners include:</b></p> <ul style="list-style-type: none"> <li>• Energy Savings Trust</li> <li>• HMT</li> <li>• Credit reference agency</li> <li>• Motor finance providers</li> </ul>	<p><b>Policy levers to support demand and scale up:</b></p> <ul style="list-style-type: none"> <li>• N/A</li> </ul>	

Demonstrator Solution 4: <b>Battery Health Certificate</b>	Consumer ✓	Lender ✓
<p><b>Overview:</b> A compulsory battery health certification scheme to inform potential buyers of the remaining battery life and expected maximum range of a used vehicle, giving confidence they are purchasing a vehicle that is suitable for their needs. The certification could also facilitate commercial extended warranty products beyond the standard 8 year/100,000-mile warranty provided by OEMs today.</p> <p>A key determinant of battery life is the way it is treated – e.g., driving, charging, and parking behaviour. Battery management systems typically track this information, but it is not readily accessible to car buyers. The only visible evidence of the range of a battery is the dashboard display when the vehicle is fully charged, but this can be influenced by recent driving history. In the absence of more detailed information, it is likely that buyers will assume the worst possible battery treatment and range, reducing demand for used EVs.</p>		
<p><b>Outcome:</b> Certifying battery health provides confidence to consumers, creating increased demand for used EVs and helping build a viable second-hand market. The existence of a certification process would also provide greater confidence to new car residual value setters about future resale values, reducing lender risk. It could also be an enabler for alternative residual value forecasting methodologies.</p>		
<p><b>Delivery partners include:</b></p> <ul style="list-style-type: none"> <li>• OEMs</li> <li>• Car dealerships</li> <li>• MOT centres</li> <li>• DVLA</li> <li>• Consumer groups</li> <li>• CAP HPI</li> <li>• OZEV</li> </ul>	<p><b>Policy levers to support demand and scale up:</b></p> <ul style="list-style-type: none"> <li>• Regulation to mandate battery health certificate displayed for all used car sales</li> </ul>	

<p><b>Demonstrator Solution 5:</b> <b>Total Cost of Ownership Principles</b></p>	<p><b>Consumer</b> ✓</p>	<p><b>Lender</b></p>
<p><b>Overview:</b> Total cost of ownership is often cited as the way in which consumers should consider the ‘real’ cost of an EV compared to an ICE. However, there is no standard approach to calculating this, with a variety of methods used by different players in the market. Coalition members, including consumer groups, advocate for a concise, comparable set of principles outlining the total cost of ownership for EVs compared to ICEs, including the environmental impact. This will require an official, central database of manufacturer information for every available car.</p>		
<p><b>Outcome:</b> A single approach, agreed by OEMs, dealers, and motor finance providers, would simplify and standardise the terminology for consumers and allow for comparison of the real cost and emissions impact of switching to an EV, supporting increased adoption.</p>		
<p><b>Delivery partners include:</b></p> <ul style="list-style-type: none"> <li>• Motor finance providers</li> <li>• Car dealerships</li> <li>• Consumer groups</li> <li>• OEMs</li> <li>• DfT</li> </ul>	<p><b>Policy levers to support demand and scale up:</b></p> <ul style="list-style-type: none"> <li>• Mandating consistent data collection on cost of EVs</li> <li>• Passenger Car Regulations to mandate display of electronic information</li> </ul>	

**Box 3**

**Existing Initiative Spotlight**

The Coalition supports a project led by Zemo Partnership to create an “electronic information tool for new and used cars”<sup>35</sup>. This project aims to become a mandatory electronic label which provides all car buyers with clear, engaging and meaningful information they can trust, to help them compare and choose the most environmentally friendly car for their needs. The CDRT will contribute to the working groups developing the product.

**WHAT'S ON THE NEW CAR ENVIRONMENTAL LABEL?**

- RUNNING COSTS**: Instantly see what your monthly fuel and annual VED costs could be for this car, making it easy to compare different models. Lowest zero-emission cars cost less. For pure electric and plug-in hybrids this total includes the cost of the electricity to charge the car at home.
- ELECTRIC RANGE**: For a pure electric or plug-in hybrid car, this tells you how far it may be able to drive on electricity only. If you're a company car driver, this also may affect the benefit in kind tax you pay.
- TAILPIPE EMISSIONS**: The precise CO<sub>2</sub> emissions for this car. The lower the figure, the less first year VED and company car tax you pay. It'll also see if the car qualifies as an 'Ultra low Emission Vehicle', the exact Euro Standard and that it can drive free in Clean Air Zones and London's ULEZ.
- FUEL ECONOMY**: This car's official 'miles per gallon' figures for different types of driving, from city to motorway. You can use these to choose the most economical car for the journeys you usually do.
- ELECTRICITY CONSUMPTION**: How many miles a pure electric or plug-in hybrid car can travel on one kWh of electricity. The higher the figure, the more efficient the car is.

The infographic also shows a digital car label interface with the following data:

- Running costs**:
 

Calculated monthly fuel cost	Calculated monthly electricity cost	<b>Total monthly energy cost*</b>
£27	£29	£56
- Equivalent electric range**: 30 miles
- Relative Emissions**: CO<sub>2</sub> emissions per litre (g/km) for different fuels. Includes a 'Green' badge for low emissions.
- Fuel economy**:
 

Fuel type	City (l/100km)	Urban (l/100km)	Extra-urban (l/100km)	Combined (l/100km)
Gasoline	8.8	11.8	6.8	8.5
Electricity	11.8	11.8	11.8	11.8
Plug-in hybrid	11.8	11.8	11.8	11.8
- Electricity consumption**: 11.8 kWh/100km

<sup>35</sup> This shows the current paper-based dealership new car label only; this project aims to develop a more sophisticated electronic version for use across digital platforms, for both new and used cars.

<b>Demonstrator Solution 6: Battery Value Guarantee</b>	<b>Consumer</b> ✓	<b>Lender</b> ✓
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**Overview:** A mechanism for a battery within an EV to have a guaranteed end-of-life value, ensuring a minimum depreciated value for the vehicle. The guarantee provider could also include a mid-cycle swap mechanism in the event of battery failure (through an extended warranty), providing additional confidence to consumers.

When a new car list price is set, the battery itself would be assigned a final value and final owner. The final owner is likely to be OEMs (that are liable to dispose of batteries), battery recyclers or second life storage facilities. A unique identifier on the battery, also required to establish battery health certificates (see Demonstrator Solution 4), would allow the battery to be triaged at end of life to either have a secondary use (such as energy storage) or be recycled for component parts, dependent on the battery’s condition.

**Outcome:** The guarantee can flatten depreciation curves by giving each vehicle battery a residual value at the end of its life, reducing the balance sheet risk of the most expensive component of the EV and hence the cost to the consumer. Furthermore, it ensures a supply of batteries into second life facilities (either storage or recycling), reducing waste and the cost of disposal.

<p><b>Delivery partners include:</b></p> <ul style="list-style-type: none"> <li>• Battery manufacturers/OEMs</li> <li>• Recycling / Second life users</li> <li>• Faraday Institute</li> <li>• Data provider to host and track battery passport data</li> <li>• CAP HPI</li> </ul>	<p><b>Policy levers to support demand and scale up:</b></p> <ul style="list-style-type: none"> <li>• Regulation requiring all vehicle batteries have a passport or unique identifier</li> </ul>
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<b>Demonstrator Solution 7: Bundled Finance Solutions</b>	<b>Consumer</b> ✓	<b>Lender</b> ✓
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**Overview:** Building on the total cost of ownership concept, bundled finance solutions both facilitate a one stop shop for EV purchasers and provide clarity on the potential for lower running costs. Bundled finance packages can simplify the process of switching to an EV offering consumers as a minimum a combination of a vehicle, with home charge-point infrastructure. Packages could also be extended to include financing for related items such as home solar panels, battery storage and energy supply, all in one monthly payment. This would ensure that consumers benefit early from a more efficient home, as well as smarter charging, and are then able to pay the loan back over time.

If bundled finance products can be sold under the Consumer Credit Act, this ensures consumers have protection from mis-selling and can build market confidence. However, in order to create consumer friendly products, reform to the act is required.

**Outcome:** A streamlined framework for offering bundled charging, vehicle and home solutions will enable more lenders to enter this market in a way that ensures consumers retain all the existing protections offered via the CCA. Importantly it can also allow consumers to compare and contrast financial offers more readily.

<p><b>Delivery partners include:</b></p> <ul style="list-style-type: none"> <li>• Law firms</li> <li>• HMT</li> <li>• Financial Conduct Authority</li> <li>• Financial Institutions</li> <li>• Chargepoint operators</li> <li>• Dealer networks</li> <li>• Energy providers</li> <li>• DfT</li> </ul>	<p><b>Policy levers to support demand and scale up:</b></p> <ul style="list-style-type: none"> <li>• CCA reforms</li> <li>• OZEV could consider how existing and future grant systems interact with this type of financing</li> </ul>
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Demonstrator Solution 8: <b>Salary Sacrifice for SMEs</b>	<b>Consumer</b> ✓	<b>Lender</b> ✓
<p><b>Overview:</b> Widening the access to salary sacrifice schemes for zero emission cars can enable more affordable EV pricing by leveraging existing tax benefits to reduce costs.</p>		
<p>Schemes that allow employees of smaller organisations (16.8m employees work in SMEs<sup>36</sup>) to benefit from the tax and national insurance advantages of sacrificing salary in return for an EV, with minimal operational administration, can bring a wider customer base to vehicle leasing providers than exists today.</p>		
<p>Vehicles are typically provided with maintenance and insurance, and in some instances home chargepoints, simplifying the process of acquisition. In addition, employees of smaller organisations will be able to benefit from the purchasing power of large leasing companies, typically only available to large corporates. Existing salary sacrifice schemes offered by numerous vehicle leasing providers including Lex Autolease, Octopus Electric Vehicles and Fleet Evolution should be more widely promoted and consideration given to finding new routes to market to widen access.</p>		
<p><b>Outcome:</b> Opening the product to a wider audience through new routes to market without increasing the administrative burden on small businesses can allow more consumers to access an EV at a reduced cost compared to existing retail consumer finance products. This creates a wider customer base for vehicle finance providers.</p>		
<p><b>Delivery partners include:</b></p> <ul style="list-style-type: none"> <li>• HMT</li> <li>• Vehicle leasing providers</li> <li>• Payroll providers</li> <li>• Car insurance providers</li> </ul>	<p><b>Policy levers to support demand and scale up:</b></p> <ul style="list-style-type: none"> <li>• Continued provision of BIK rates, with at least 3 years advance notice of extension given</li> <li>• Continued provision of Salary Sacrifice regulation</li> </ul>	

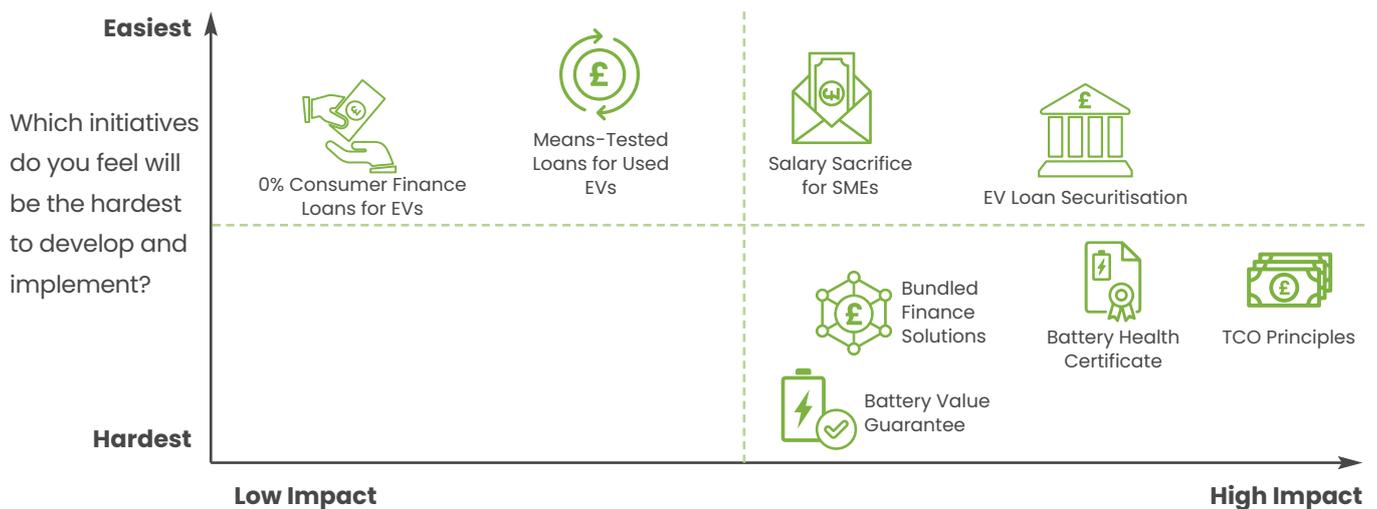
Coalition members have ranked the demonstrator solutions set out above in order of scale of impact on EV uptake and ease of implementation. The results are shown in Figure 9 below. Those thought to have the highest potential impact were those that closed the price premium between EVs and ICEs (either by reducing the cost of finance for the consumer or the cost of finance for the lender, which could then be passed on); made it simpler for consumers to access an EV and the associated infrastructure (through bundled finance); or reduced the residual value risk. These are the Demonstrator solutions that will be prioritised by the Coalition.

*The current BiK taxation structure is the single biggest driver of zero emission vehicle uptake in the UK. Low BiK rates for EVs have made it financially viable for huge numbers of company car and salary sacrifice drivers to shift from internal combustion engine cars to EV. Drivers and fleets must be certain of their future tax liabilities for this momentum to be maintained. Foresight of the taxation glide path to 2030 is urgently needed.*

**Gerry Keaney**, Chief Executive, British Vehicle Rental and Leasing Association

<sup>36</sup> House of Commons Library (2021) Business Statistics.

**Figure 9**  
**Impact vs Ease of Implementation**



Source: CDRT

Which initiatives do you feel will have the most impact on EV adoption?

#### 4.4 Policy Recommendations

To date, the Government has offered a range of grants and fiscal incentives to reduce the upfront and total cost of ownership for EVs, as described earlier. Listed below are several areas of government policy that could be refined to create an environment conducive to enabling the market to deliver the solutions identified above. High level recommendations are as follows:

- Working with the Financial Conduct Authority (FCA), the government should seek to **reform the Consumer Credit Act** on a number of fronts, particularly to make it easier to offer bundled finance solutions (i.e., to finance an EV and a chargepoint in the same lending agreement) to consumers.
- **Finalising the rapid implementation of the ZEV mandate**, as per the Net Zero Strategy, which proposes setting targets for a percentage of manufacturers' new car and van sales to be zero emission each year from 2024. This has contributed to accelerating the rates of EV adoption in California and China, and it could also lead to more competitive prices over time as economies of scale are achieved.
- **Tax and VAT changes should be considered to make second-hand EVs cost competitive** with used ICE vehicles and newer EVs. Consideration should be given to the case for exempting EVs from VAT to accelerate uptake. Working with industry on the development and display of mandatory **battery health certificates** would also boost consumer confidence in the second-hand EV market.
- **The Government should develop a clear BiK roadmap beyond 2025 to provide visibility for businesses looking to electrify their fleets.** Lower BiK rates for EVs compared to ICE vehicles are a strong motivator to continue incentivising EV uptake, as EV owners can save more than £1,000 per year. The reduction in BiK rates for EVs resulted in EVs making up 19% of new lease car registrations in the first quarter of 2021, three percentage points more than diesel according to the BVRLA. This is attractive for employees who are able to access an EV via a salary sacrifice arrangement, and these schemes should be more widely promoted.
- **Introducing a scrappage scheme for the oldest and most polluting diesel and petrol vehicles, with the money earmarked for the purchase of a new or second-hand EV**, could drive further consumer uptake and help the UK meet its phase out target in an orderly fashion.
- The Government should continue to support the roll out of **Clean Air Zones which have a role to play in signalling to consumers and businesses** the need to drive the cleanest vehicles possible and can incentivise an earlier transition.
- **Expansion of the OZEV funded Electric Vehicle Approved scheme**, an education and training programme for motor dealers and intermediaries, would help build knowledge within the sector and support consumers in the transition to an EV, helping to stimulate demand for used EVs.