OZEV Used Electric Vehicle Working Group | Finance & Data

September 2023

Green Finance Institute

Introduction

The used EV market is critical to the UK's transition to zero emission road transport. In June 2022, OZEV brought together a group of leading industry organisations to identify key barriers and solutions to support the growth of the UK's used EV market. The group are initially analysing six key areas, each managed by a different organisation: battery health, consumer information, technician skills, independent motor dealers, auction houses, and finance & data.

The Green Finance Institute (GFI) are leading the finance & data workstream and have engaged three key stakeholder groups (lenders and lease companies, consumers, and dealerships) with the aim of:

1. Understanding whether finance is a barrier to growth of the used EV market, and
2. Identifying what data might help finance to be an enabler of EV adoption.

Executive Summary

1. **Lenders and lease companies**
    a. We surveyed 20 motor finance lenders and four lease companies to understand if they provided finance or leasing options for new and used EVs, and if so, how terms compared with internal combustion engine (ICE) vehicles.
    b. **Key Findings:** Progress has been made toward aligning internal policies which impact pricing and other contract terms across different fuel types. Availability of data for forecasting used EV values has improved and was not cited as a significant barrier to lenders and lease companies offering finance and leasing options for used EVs.
2. **Consumers**
    a. We surveyed 2,000 UK drivers to understand the barriers consumers experienced when accessing used and new EVs.
    b. **Key Findings:** 73% of consumers who would purchase an EV would consider buying a used EV. Those who wouldn't cited concerns about battery health, reliability, charging infrastructure and purchase price as ranking higher than any access to finance issues. Financial products could have a role to play in reducing friction for consumers looking to make the switch from an ICE vehicle.
3. **Dealerships**
    a. We spoke to 21 dealerships to find out if they have access to the necessary data to sell used EVs, and whether the finance options available support this.
    b. **Key Findings:** Battery health, EV range and purchase cost ranked as more significant barriers for their customers accessing used EVs, than access to finance. Dealerships want more access to reliable information about new and used EVs to enable them to advise consumers.

Key Takeaways

- The availability of finance is not a barrier to growth of the used EV market.
- Whilst more data will improve the ability of residual value (RV) seters to predict used EV values, access to data is not a significant barrier to lenders offering RV-based finance products.
- The alignment of financing policies between ICE vehicles and EVs has improved, and it is unlikely that differences in policies is impacting leasing/financing costs for consumers or directly prohibiting growth of the used EV market.
- Battery health, charging infrastructure, and affordability are the key considerations affecting consumer decisions in the used EV market.

Recommended Next Steps

1. Share this report with lenders and lessors to encourage further progress towards alignment of EV lending policies across the market.
2. Share this report with dealerships to provide an updated view on the state of the finance market.
3. Conduct follow-up research annually to monitor market development.

Lender & Lease Company Survey

Table 1: Average quoted consumer finance contract terms across twenty lenders. **NB:** not all lenders provided details for every term.

	Electric Vehicles		ICE Vehicles	
Contract Term	**Average**	**Range**	**Average**	**Range**
Guaranteed Future Value (GFV) % - New	87%	70% - 95%	87%	70% - 95%
Guaranteed Future Value (GFV) % - Used	83%	70% - 90%	86%	70% - 90%
Max Vehicle Age at Start of Contract (Months)	60	36 – 84	62	48 – 84
Max Vehicle Age at End of Contract (Months)	113	60 – 180	124	60 – 180
Max Mileage at Start of Contract ('000 Miles)	71	50 – 93	70	50 – 102
Max Mileage at End of Contract ('000 Miles)	127	100 – 150	132	100 – 150
Min Annual Mileage ('000 Miles)	7	5 – 9	7	6 – 9
Max Annual Mileage ('000 Miles)	31	28 – 35	31	28 – 35
Min Contract Term (Months)	31	24 – 36	31	24 – 36
Max Contract Term (Months)	53	48 – 72	55	48 – 60
Min Driver Age, New & Used (Years)	20	18 -25	20	18 - 21

Lender Survey Summary: Prior to the survey, anecdotal feedback suggested the lending policies or contract parameters of finance providers were impacting the competitiveness of finance options available for EVs and slowing adoption amongst consumers. However, this survey, supported by interviews with lenders and leasing providers, did not identify significant variations in the parameters set by lenders for EVs and ICE vehicles; instead, the results indicate that EV buyers are generally being offered the same selection of financial products on comparable pricing and terms.

Monthly Finance Costs

Part A: Explanation of Residual Value & Guaranteed Future Value

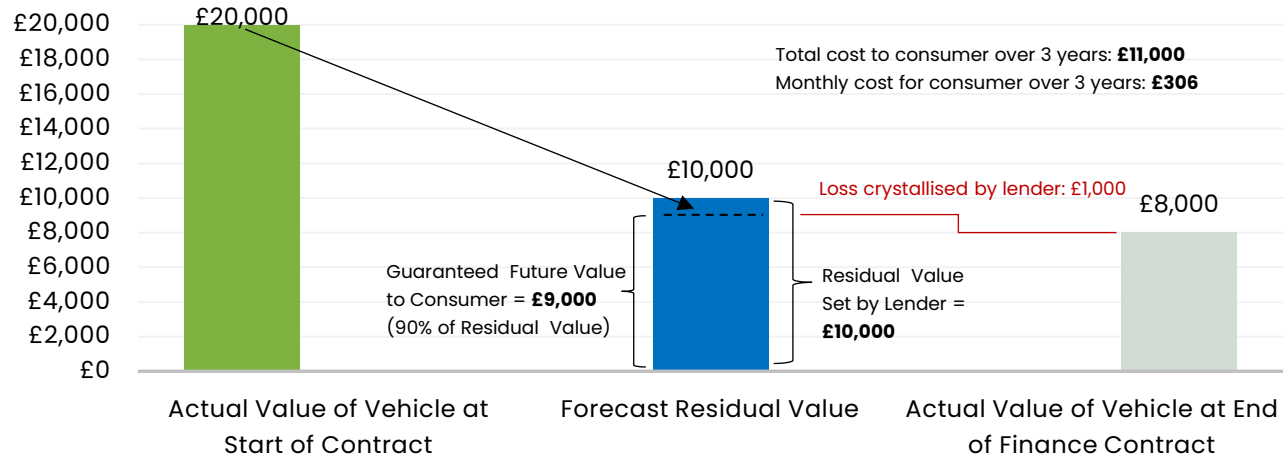
Residual value (RV) and guaranteed future value (GFV) are two key terms set by lenders to determine the monthly cost of finance for consumers acquiring vehicles using Personal Contract Purchase (PCP). PCP is the most common form of finance for consumers used for approximately 90% of new retail car sales[1] and up to 50% of used car sales.[2]

PCP enables lenders to reduce monthly costs for consumers because customers are charged for the amount the vehicle depreciates (i.e., how much it loses in value) over the contract period rather than the whole value of the vehicle. However, calculating depreciation requires lenders to forecast what the value of the vehicle will be at the end of the finance contract, also known as the **RV**.

At the end of a PCP agreement, a customer has the option to either return or acquire the vehicle outright for a price which is agreed at the outset, known as the **GFV** or "balloon payment", typically expressed as a percentage of the RV. In the example in **Figure 1**, the lender has set the GFV at 90% which means at the end of the contract the customer could choose to acquire the vehicle (originally worth £20,000) for £9,000 by paying the lender this amount.
However, where the actual market value of the vehicle at the end of a finance contract is less than the GFV, a rational consumer with negative equity is expected to hand back the vehicle, with the lender crystallising a loss on the sale of the vehicle at an auction. In the example in **Figure 1**, a lender would crystallise a loss of £1,000 where the actual value of a vehicle fell to £8,000 rather than the £10,000 they originally forecast, and the customer decided not to acquire the vehicle for the GFV of £9,000.

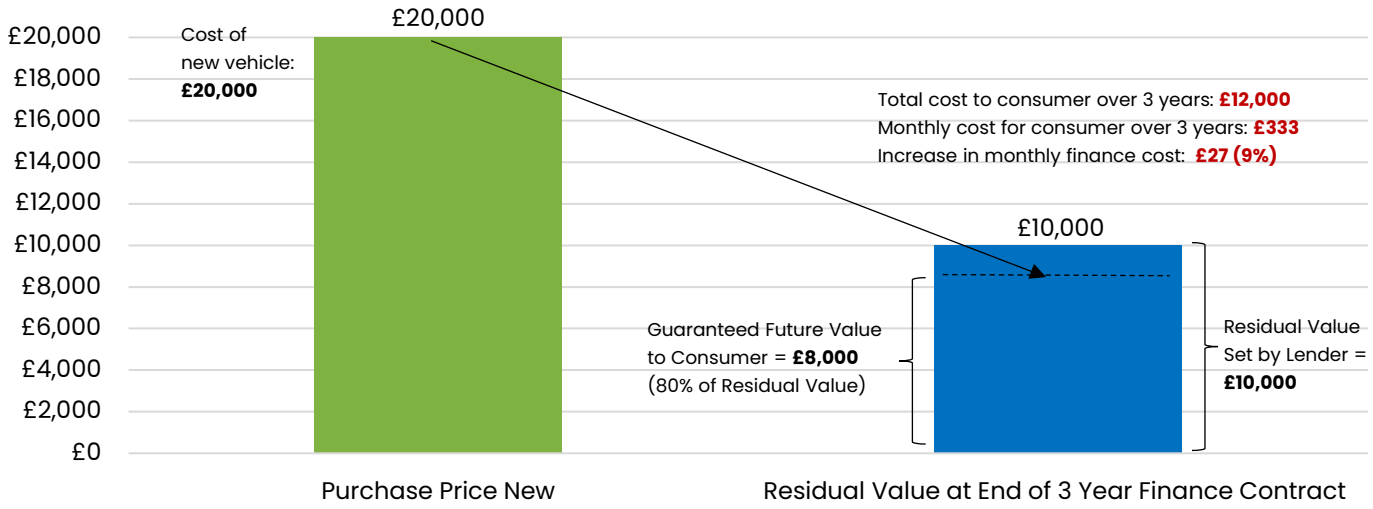
[1] Personal Contract Purchase (PCP) car finance explained (thecarexpert.co.uk)
[2] Personal Contract Purchase (PCP) car finance explained (thecarexpert.co.uk)

Figure 1: Scenario where the value of the used car market drops. This example has been simplified to remove other charges such as interest, maintenance etc.



Lenders mitigate the risk of customers being in negative equity and therefore returning their vehicles at the end of a PCP contract by reducing the GFV percentage, as illustrated in **Figure 2**. By lowering the GFV, the customer is charged more depreciation, thereby reducing the chance that the market value of the vehicle will be less than the GFV at the end of the contract. However, doing so increases the cost of finance for consumers, and reduces sales volumes. This means lenders have a commercial incentive not to set the GFV too low: **Figure 2** shows how much more a customer will pay each month compared to **Figure 1**.

Figure 2: Impact of reducing GFV percentage or RV forecast on finance costs



Anecdotally, we had heard that lenders historically had been setting lower GFV percentages for EVs relative to ICE vehicles due to a lack of data and increased volatility of used car values. This could negatively impact EV adoption by increasing the total amount a customer pays for finance and reducing competitiveness of finance deals compared with ICE vehicles.

Increased cost of finance could further compound the challenges caused by the upfront price premium that consumers can often expect to pay for an EV when compared to an equivalent ICE vehicle.[3] This price premium applies both to new and used vehicles, though to different extents: according to data from Autotrader, new EVs currently cost an average of 37% more than their ICE equivalent. Given the higher starting price point, used EVs also tend to be more expensive than used ICE equivalents (of the same age with similar mileage) though this does vary depending on the vehicle itself and the state of the used vehicle market.

[3] Road to 2030 (autotraderroadto2030.co.uk)

Monthly Finance Costs

Part B: Survey Results

The findings of the survey contradict the anecdotal reports: growth of the EV market over the last few years has increased the volume of data points available to support RV forecasting, and volatility has reduced. As a result, our survey found that most lenders have now aligned their GFV policies across the different fuel types – as shown by the average and range of GFV % in **Table 1**. Though there is a small difference between the average GFV for Used EVs and ICE vehicles, this result is due to the response of only one lender.

As the EV market continues to mature and an increased volume of data points become available, we expect outliers to update their policies. However, there is a possibility that progress could be slowed down by periods of used EV price volatility. This is because uncertainty around EV depreciation could reduce lender confidence in RV forecasts and encourage more conservative approaches when setting RVs and GFVs for EVs. We therefore recommend continued surveys and engagement with lenders and lessors to monitor future progress as the market continues to mature.

Other Contract Terms

We surveyed lenders about other key aspects of the finance products offered to understand whether there were any other parameters where EVs and ICE were misaligned. Small differences were identified in the average maximum age of the vehicle at the start and end of the contract, and the average maximum mileage at the end of the contract, as shown in **Table 1**. Though this means that in some cases ICE vehicles may still be being offered on more favourable terms, this appears to be the exception rather than the rule.

Product Options

Consumers generally are able to access the same financial products for EVs as they are for ICE vehicles. Only two of the twenty lenders surveyed still do not offer funding for EVs. Of those that do offer finance for EVs, 80% offered the same product selection for EVs as ICE. Across the whole survey, only one lender reported offering products for new EVs but not for used EVs, which shows encouraging progress across most of the market.

In-Life Performance

Consumers who purchase vehicles under a finance or lease contract benefit from contractual and regulatory protections under the Consumer Credit Act. Prior to the survey we heard anecdotal feedback that many lenders were concerned about experiencing a higher number of claims under these protections. Pricing this risk into finance agreements could increase the cost of finance.

Of the 14 motor finance lenders who responded to this part of the survey, only one reported any difference in voluntary termination rates, hand back rates and propensity for section 75 claims under the Consumer Credit Act. One lender, who did not provide answers to this part of the survey, did comment that volumes of EV sales were too low to be able calculate a difference compared to ICE. As volumes increase, a future survey is recommended to monitor this data.

Consumer Survey

Table 3: Consumer survey – Factors to switching to an EV for those without an EV (1919 people). Sample size: 2,000 UK drivers, conducted by consumer research company Opinium.

What are your main concerns with buying a used EV?	% of consumers who wouldn't buy used EV
Battery lifespan	62%
Reliability	34%
Purchase cost	27%
Cost of maintenance	27%
No charging points near my house	25%
Ability to resell	21%
Availability of EV mechanics	10%
No used EVs for sale near me	8%
No leasing options	7%
They are too slow	4%
Other	5%

Table 4: Consumer survey – Factors to switching to an EV for those without an EV (1919 people)

Which, if any of the factors below, would encourage you to switch to an EV?	%
If it cost the same as a diesel or petrol equivalent	34%
More chargers where I live/drive	34%
Extended battery warranty (i.e., longer than 8 years)	31%
A reliable measure on current state of battery	27%
Financial support (i.e., from the government, your workplace)	25%
Scrappage scheme (where you can exchange your current vehicle for some of the cost of the EV)	23%
Ability to finance a home charger	21%
Competitive finance options	17%
Better understanding of EVs and their suitability for my needs	17%
More certainty around resale price	16%
The option to bundle everything you need for an EV simplifying ownership e.g., charger, EV and electricity tariff into one monthly payment	16%
New legislation requiring use of an EV where I drive	12%
Other	2%
N/A – nothing would encourage me to switch	19%

Consumer Survey Summary: The Findings of the consumer survey demonstrate strong demand for EVs amongst consumers, and like the lender survey, suggest that finance is not a barrier to used EV adoption. The main barriers to switching include concerns around battery health, reliability, cost, and charging infrastructure. These can be addressed through sharing of data with both consumers and dealerships, the latter being identified in the survey as playing a key role in informing consumers. There is an opportunity for finance providers to support consumers switching by helping to reduce friction at point of sale, particularly when it comes to the cost and process of installing and using charging infrastructure.

Finance

61% of non-EV drivers indicated they would buy an EV today. Of these drivers, almost three-quarters of them (73%) would buy a used EV. For the drivers who would not buy an EV, finance is typically not a factor discouraging them from making the switch.

Battery Health

62% of drivers who don't already own an EV cite battery lifespan concerns as a reason why they would not buy a used EV (**Table 3**).

Reliable information on battery state of health is a key mechanism in overcoming this concern: 27% of drivers said a reliable measure of the state of health of a battery would make a used EV more attractive (**Table 4**) and in another part of the survey, drivers listed a battery health certificate as the most impactful solution to overcome this barrier. Both points highlight the importance of the workstream in the OZEV's Used EV Group that focuses on battery health.

As more EVs enter their second life, the success of the used EV market is contingent on consumers having confidence in the long-term health of the battery. Providing that confidence is the focus of an industry working group, created by OZEV and fronted by the British Vehicle Rental & Leasing Association (BVRLA).

Several firms are bringing "battery health" monitoring and certification products to market, each with a unique methodology and alternating output. The working group has brought together leading voices from across the automotive sector and is working to establish if industry should create standards to encourage consistency and accuracy in battery health evaluation.

The battery health sector is in its infancy and will impact in-life monitoring, remarketing, and consumer confidence. Any push for standardisation must be balanced with wider regulatory movements and the need to foster innovation and investment in these technologies. In such a fast-moving space, information sharing and industry alignment with Government are essential to create an approach that works for all.

OZEV do note that there are already over 27 million EVs on the world's roads and there is no evidence to suggest that their lifespans are any different from a petrol or diesel vehicle. Most EV batteries have warranties of around 8 years (or 100,000 miles) but are expected to last much longer, and their lifespans continue to improve. EVs are in daily use across the UK's roads as taxis and in other high mileage roles. However, accurate assessment of an EV's battery health will support consumer confidence and ensure accurate valuations in the used market.

Alongside battery health, an extended battery warranty was listed as one the top three factors that would encourage drivers to switch to an EV, highlighting the potential role of the insurance industry in encouraging EV uptake.

Reliability

34% of UK drivers who don't own an EV cite reliability concerns as a reason why they wouldn't switch (**Table 4**). However, according to research, EVs tend to be more reliable and break down less often because there are fewer moving parts[4]. Consumers need to be provided with this information to amend this perception, affirming the importance of the IMI's workstream in ensuring the repair industry has the skills needed to reassure consumers.

Monthly costs

27% of drivers who said they wouldn't buy a used EV cited purchase cost as a major factor (**Table 3**), and price parity with ICE vehicles was listed as one of the factors most likely to encourage drivers to switch to EVs (**Table 4**). 27% also cited maintenance costs as a barrier to purchasing a used EV (**Table 4**), despite the fact that repair and maintenance

[4] Alternative Fuels Data Center: Maintenance and Safety of Electric Vehicles (energy.gov)

costs for EVs are, on average, 40% lower than for ICE vehicles[5]. Sharing information with consumers regarding total cost of ownership can help address these concerns.

The consumer survey also suggested salary sacrifice schemes which can help drivers save on the monthly costs are being underutilised: 54% of drivers aren't offered EV salary sacrifice through their workplace, 19% of those who are offered it don't use it, and 14% don't know if their employer offers it. Improving awareness and availability of salary sacrifice schemes could contribute to lowering the monthly costs to transition to an EV. Used EV salary sacrifice could also offer financial savings to drivers, whilst benefit in kind rates remain low. Octopus EV's recent launch of used EV salary sacrifice schemes is a welcome addition to the market.

Charging costs & access to charging infrastructure

While concerns over access to charging infrastructure are not unique to used EVs, this remains a key barrier to EV uptake as a whole. Over a third of drivers (34%) still see access to charging infrastructure in areas where they live and drive as a barrier, calling for more charging infrastructure before they make the switch (**Table 4**).

Access to data could help. Drivers said the most common information they wanted to see concerned the cost of public charging (43%), types of charging (41%) and the cost of installation of a home chargepoint (41%). Providing consumers with tools to better understand how the cost of electricity at home or public charging networks translates to pence per mile driven, and how this compares with ICE vehicles would be beneficial.

Cost of running an EV is particularly noticeable for drivers who do not have access to private charging. A recent survey by Zapmap showed that 90% of EV drivers make use of public charging infrastructure[6]. The current rate of VAT on public charging (20%) is four times that of home charging (5%). Reducing the rate of VAT on public charging to match that of home charging will drive costs down for those reliant on the public charging network, helping to ensure that all drivers can make the switch to an EV.

Finance providers could help address the challenges related to home charging costs. 21% of drivers indicated that the ability to finance a home charger would encourage them to switch. Consumers today are interested in spreading out the cost of charging installation, rather than paying the cost upfront. Offering a combined monthly package, inclusive of both vehicle and home charging installation could ensure that drivers can easily and affordably install chargers at home where possible. Our survey shows that 92% of drivers would like to have additional services and products included in their monthly payments, with 42% wanting home charging installation specifically included. 37% of drivers would also like to have maintenance included in their monthly cost.

Dealerships

The survey highlighted the importance of dealerships in providing consumers with information to address concerns about EVs. Outside of family and friends, dealerships were ranked as the most trusted source of information on EVs (27%), highlighting the importance of the workstream led by the IMDA to ensure dealerships are equipped to sell EVs.

[5] https://www.osti.gov/biblio/1780970
[6] Zapmap (zap-map.com)

Dealership Interviews

Table 5: Dealership survey – What do dealerships think consumers are concerned about when buying a used EV? Answer below shows the average score out of 5 across 20 dealerships. Sample size: 21

Consumer Concern	Average Dealership Rating (/5, 5 being highest concern)
Doubts about remaining battery range	4.05
Battery lifespan	3.95
Purchase cost	3.70
Reliability	2.55
Ability to resell	2.55
Running cost	2.30
Cost of repair & maintenance	1.70
Availability of EV mechanics	1.70
Lack of financing or leasing options	1.05

Table 6: % of 21 dealerships that would like more information, by subject.

Subject	% of dealerships who would like to see more information
Cost savings of smart charging	76%
Battery degradation	76%
Charging location	48%
Charging costs	48%
Maintenance data	38%

Dealership Interview Summary: The conversations we held with dealerships confirmed the findings of the lender and consumer surveys, suggesting that availability of finance products is not a barrier to used EV adoption. Many of the concerns shared by dealerships could be addressed by providing them with access to reliable data.

Finance

Most dealerships do not see finance as a barrier to selling used EVs. Like consumers, dealerships ranked 'lack of financing or leasing options' as the lowest concern to consumers when selling them a used EV (**Table 5**). Of the dealerships which offered finance to consumers, 20 out of 21 said they felt that the finance products on offer met the requirements of consumers looking for used EVs.

The only dealership who felt the finance products offered did not meet requirements also said that their finance provider did not offer finance for used EVs, and expressed concern that 'funders do not all offer the same % of CAP RV, because early EV cars are stigmatised on resale value, affecting finance company confidence'. Given the results of the lender survey suggested many lenders had begun to align EV and ICE policies, and the results of the consumer survey highlight the importance of dealerships in providing information on finance options, we recommend sharing the findings of this report more widely in order to target dealerships who may have the same concerns to provide an updated view on the state of the market.

Battery Health, Cost & Charging

Dealerships ranked battery lifespan, battery range and purchase cost as the most significant concerns for consumers buying used EVs, echoing the findings of the consumer survey (**Table 5**). Dealerships identified several areas where more information would help them address their own and their customers' knowledge gaps:

1. **Battery Health:** Only two out of the 21 dealerships we spoke to said they had enough data on battery degradation. All of the dealerships agreed that a standardised battery health certificate would help instil consumer confidence when selling a used EV.
2. **Cost:** 76% of dealerships either already use a total cost of ownership tool or thought it could be useful in educating consumers about the true cost of EVs.

3. **Charging:** 20 out of 21 dealerships we spoke to help consumers with their home charging, either by offering referrals to chosen charging providers or providing advice on how to find an installer. This demonstrates the key role dealerships play in educating consumers making the switch. To enable them in this role, dealerships confirmed they wanted to see more data around smart charging, charging location and charging costs as per **Table 6**.

Electric Vehicle Approved (EVA) Scheme

Dealerships certified under the EVA scheme have a sufficient level of expertise in EVs. A third of dealerships we spoke to were not aware of the scheme. Ensuring more dealerships are aware of it and able to seek certification could help play a role in giving confidence to consumers when buying EVs.

Conclusion

The results of the surveys and interviews with key stakeholders suggest that the availability of finance products and accessing finance, or data related to EVs, are not key barriers to growth of the used EV market. The alignment of financing policies between ICE vehicles and EVs has improved and is currently unlikely to be impacting leasing /financing costs for consumers or directly prohibiting growth of the used EV market. Sharing this updated view of the market with relevant members of the finance and dealership communities should help to encourage further progress towards alignment of policies. To ensure lasting progress, as the market continues to grow, we recommend that similar surveys be undertaken and those results shared - particularly in light of the periods of extended price volatility of used EVs, as this could reduce lender/lessor confidence.

The other challenges to growth of the used EV market which were identified in this report, such as battery health, charging infrastructure, and affordability continue to be addressed through other active OZEV and industry work. For more information, please contact Tom Parke at the Green Finance Institute.