

Electric vehicles

and future fuels

AA

Foreword

The drive to reduce the carbon footprint of road vehicles, nationally and internationally, continues to gather momentum.

Governments globally have committed to ambitious targets around climate change, and continue to enshrine these ambitions in domestic legislation and regulation based on varying combinations of ‘carrot’ and ‘stick’ for both business drivers and private owners. The aim is to reduce – and even end completely – the reliance on internal combustion engine (ICE) vehicles and instead harness more sustainable forms of power for our commercial and leisure transport.

Electricity is the power source which springs to mind most readily for many when the topic of alternatively fuelled vehicles (AFVs) is mentioned and in terms of AFVs currently in use, electrically powered vehicles represent the highest proportion. Nevertheless they are not the only option. Liquid petroleum gas (LPG), liquid natural gas (LNG), compressed natural gas (CNG) and hydrogen are among other alternatives to ICE vehicles. All are experiencing growing usage and all have their part to play in a more sustainable future.

However, irrespective of the suitability of each type of fuel for different tasks, one thing is for sure – AFVs are here to stay.

As an organisation committed to supporting all drivers on the UK’s roads, we remain power agnostic. That means a deep and continued commitment to ensuring the availability of both the expertise and the technology to meet the needs of fleets and individual drivers in the event of a breakdown, and beyond.

We trust you will find this white paper valuable in assessing the right way forward to deliver effective and sustainable operations in your fleet.



Edmund King OBE
AA President

Executive Summary

Seeking to reduce the use of fossil fuels, and emissions from those fuels, is of course nothing new. In all sectors of business and domestic life, the focus has for many years been on the development and adoption of greener and more sustainable solutions to prevent further depletion of natural resources and counter the effects of climate change.

It goes without saying that the automotive sector remains one of the world's primary users of fossil fuels, but the drive to reduce and even eliminate their usage continues to gather pace.

Modern ICE vehicles are far more efficient and produce significantly less emissions than their counterparts of 20 to 30 years ago, but even this is not viewed as a long-term solution.

However, to completely end the use of ICE vehicles will require the availability of an alternative (or more than one) which can offer the speed, durability, convenience and performance that ICE vehicles have given us for so long.

Research and development in the area of AFVs continues apace, and the purchase and use of these vehicles is growing exponentially in the UK, and elsewhere.

These efforts have the strong backing of the UK Government which in July 2019 announced an £80 million investment in next-generation electric vehicles as part of its Industrial Strategy.

The same month saw the Government initiate a public consultation on changing building regulations in England to stipulate that all new-build homes will be fitted with an electric car charge point.

This paper will examine current usage of and attitudes towards EVs and other AFVs and the wider regulatory picture both in terms of vehicles and wider environmental initiatives. It will also discuss barriers to further adoption and measures that could be taken to address these and so broaden take-up, while also providing fleet managers with some best practice advice on AFV integration into their fleets.



The legislative picture

Current legislation and policy is using a variety of ‘carrot’ and ‘stick’ measures to drive down emissions while penalising those whose vehicles do not comply.

The Government’s stated aim is for zero net emissions by 2050. The Government is seeking views on bringing forward an end to the sale of new petrol, diesel and hybrid cars and vans from 2040 to 2035, or earlier if a faster transition appears feasible. With many commercial fleets operating on five or six-year renewal cycles, they may be only two or three vehicles away from this deadline.

Uncertainty in this area means that we see many fleets taking a ‘wait and see’ approach to greater adoption of AFVs – exactly the opposite effect than that intended, as older more polluting vehicles are kept in service.

Nevertheless, emissions have to come down, and central to this is the introduction of clean air zones (CAZs) and Ultra Low Emissions Zones (ULEZs).

London’s ULEZ came into force during 2019, with more stringent standards for heavy vehicles will set to take effect from October 2020. However, it will be welcome news that no new charges will be introduced until the end of February 2021 to give the freight industry more time due to the demands of the COVID-19 pandemic.

A number of other cities including Leeds and Birmingham were set to introduce CAZs in some form during 2020 but this has been postponed so authorities can spend time dealing with the COVID-19 pandemic. It is expected other cities will undertake consultation on the subject.

While the introduction of ULEZs and CAZs is generally popular – indeed in the joint AA/ Rivas Operational Fleet Insight Report 2019/20, some 72 per cent of fleet managers supported their introduction – there is nonetheless concern over consistency between implementation and charging between different CAZs, with seven out of 10 respondents citing this as an issue.

We can only wait and see if alignments between different CAZs become closer but either way, they are likely to play a major role in broadening low-carbon vehicle adoption.



So much for the stick. But what about the carrot?

The February 2020 budget committed more than £1 billion to incentivising measures. Some £500m will support the rollout of a super-fast electric vehicle charging network, while the existing plug-in grant has been extended for a further three years to 2023, with £533 million available to support schemes for ultra-low emission vehicles.

Meanwhile, homeowners seeking to go electric can also claim a grant of up to £350 towards the installation of a charge point at their home.

Further good news for fleets is that zero-emission electric cars have been removed from company car tax in April 2020, while EVs are exempt from Vehicle Excise Duty (VED). A slight discount of £10 is also available for hybrid vehicles.

Finally, as an attempt to address one of the concerns around charging, all new publicly available chargers from 2020 will have to take contactless payment.

£500M SUPPORT

for super-fast
charging network

£533M SUPPORT SCHEME

for ultra-low
emission vehicles

ZERO EMISSION ELECTRIC CARS

Removed from company
car tax in April 2020

UP TO £350 GRANT FOR HOMEOWNERS

towards the installation
of a charge point

Where are we on AFVs - now and in the future?

Recent statistics from the SMMT state that 828,000 out of just over 40 million vehicles on the UK's roads are AFVs, of which more than 237,000 are ULEVs – either full hybrid/ plug-in hybrid, or EV.

The figures for AFVs are rising rapidly, with a commensurate drop in ICE vehicles. According to the SMMT, diesel car sales to the end of June 2020 had dropped by almost two thirds over the same period the previous year, with petrol vehicle sales falling by nearly 52 per cent. Meanwhile, battery EV sales had grown by a massive 159 per cent over the same period in 2019, with exponential increase in mild hybrid EVs, both diesel and petrol.

The SMMT believes this trend is only set to continue, with their figures predicting substantial rises in battery, hybrid and plug-in hybrid EVs over the rest of the year and again into 2021.

It is arguable that these figures are skewed towards domestic usage, but there is clear evidence that this trend is taking place in the fleet sector too.

Some 57 per cent of respondents to the Operational Fleet Report this year expected to convert their fleets to EV in the next five years, compared with only 35 per cent the previous year. Of those 57 per cent, just over half are currently using EVs. Similar substantial growth was also expected in the use of PHEVs, bio-diesel vehicles, LPG, CNG and hydrogen-powered vehicles.



PETROL VEHICLE SALES FELL BY NEARLY 52%

Meanwhile, plug-in hybrids, often cited as a stepping stone to full AFV adoption, are, partly due to a lack of education, not always being used optimally, and are so in some cases gaining an undeserved reputation for inefficiency. Nevertheless, their higher payloads when compared with EVs means they are still preferable to the older, more polluting vehicles they have been designed to replace.

One unexpected factor which may change the course of EV adoption is the COVID-19 pandemic. In a world shaken by the virus, staying home more opened eyes to the levels of pollution 'normal' life had been generating. An AA driver survey in May 2020 showed that four fifths of drivers will take action to maintain cleaner air after lockdown, with one fifth stating they will be buying an EV. Demand for EVs was highest among those aged 18-44, suggesting we can be optimistic about EV sales for the coming decade. Could we be at a tipping point for EVs to go mainstream?



Uber

“Despite progress in recent years, transport remains the UK’s largest emitting sector, responsible for 28% of all greenhouse gas emissions. To play its part in combating climate change and accelerating to Net Zero, Uber believes that a rapid acceleration of the transition to fully electric vehicles (EVs) is essential.

With over 60,000 licensed drivers in over 40 towns and cities in the UK using our platform, we recognize we have a responsibility to address our environmental impact and help the cities we serve become sustainable. We are also well placed to facilitate the early mass adoption of electric vehicles.

The Government is currently consulting on bringing forward the end of the sale of new petrol, diesel and hybrid cars. The Committee on Climate Change recently called for this date to be brought forward to 2032. We believe a more ambitious target of 2030 is both achievable and necessary. We are already working to ensure all drivers who use the Uber app in London will be in an electric vehicle by 2025.

Our London commitment is an ambitious but credible plan and should enable other road users to follow suit. As the UK looks to build back better from COVID-19, we want to work with the Government, city leaders and partners, using our scale, data, and expertise to help the UK transition to net zero more quickly.”

“

It’s very gratifying to know that I am part of the solution, not the problem in regards to the climate and health problems facing humanity (every little helps) as well as making a handsome saving on the costs of running my car.

DRIVER A

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Driving an EV car with long range brings a great experience. It’s rapid, powerful and quiet at the same time. The journey is smooth, riders are very positive as well, less footprint on the environment gives them a sense of better wellbeing.

DRIVER B

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“

I’ve been driving EV for over a year now. It’s still a pleasure to drive. Responsive, fast, comfortable and quiet. Initial worries were range anxiety and getting used to charging not refuelling. It took a little while to grasp but it didn’t take long.

DRIVER C

”

Other factors influencing AFV usage

While the increased use of AFVs is no doubt to be welcomed from an environmental point of view, the question inevitably arises as to why the take-up could not be even more rapid.

The issues lie in perceptions around these vehicles, particularly EVs. Many fleet managers doubt their suitability for long haul and heavy goods transport, with payload a significant issue. Range is a major challenge, with batteries on most EVs having ranges of barely 100 miles, meaning multiple breaks for charging on long journeys, with associated downtime which many companies working to tight deadlines cannot countenance.

Meanwhile, 26 per cent of survey respondents were reluctant to electrify because of charging time and lack of charging points nationwide. Charging speed, ease of payment, and the need for advance booking are all also challenges for busy fleets requiring minimum downtime. This is mirrored by consumers of whom 64 per cent believed there is insufficient charging infrastructure to buy an EV.

For fleets where the drivers take their vehicles home, the concerns are greater. It is estimated that some 40 per cent of EV owners do not have suitable offroad space for charging – a figure which is likely to be reflected in fleet users too.

There is also a perception that many manufacturers are focusing on their car offer ahead of vans – a key issue for mixed and commercial fleets. Certainly there is wide perception that the current full electric offer is not suitable for every business need. Cost is a major barrier too – few companies can afford the luxury of upgrading their entire fleet at once. As the government seeks views on bringing forward an end to the sale of new petrol, diesel and hybrid cars and vans from 2040 to 2035, or earlier, doubt remains over whether a comprehensive AFV range, suitable for all fleet tasks, will be available by that point.

One interesting point from the Operational Fleet Report was that 13 per cent of fleet managers were put off from EV adoption by a perceived lack of experienced EV engineers.



26%

Are reluctant to electrify because of charging time and points



13%

Fleet managers put off due to perceived lack of experienced engineers



40%

EV owners do not have suitable offroad space for charging



Finally, it seems that many fleet managers as yet remain unconvinced by the economic case for AFVs. Maintenance of tyres, brakes, 12V batteries and other components is the same as on ICE vehicles, and savings on engine maintenance are not always seen as sufficient to offset other costs.

Certainly, resistance among employees is less likely to be a major obstacle. Operational Fleet Report responses indicated that

employees are actually more favourable than owner-drivers towards EVs, while 73 per cent of the fleet managers surveyed felt the use of EVs could actually be better for driver health. And anecdotal evidence suggested that many drivers who had been given an EV to use as their fleet vehicle would be reluctant to return to diesel.

One factor which may drive greater use of AFVs particularly EVs is the growth of the gig economy, where the use of ‘micromobility’ vehicles, such as smaller vans, bikes and scooters, for local and ‘last mile’ delivery makes the use of AFVs more suitable than ICE vehicles, particularly as the prevalence of CAZs and ULEZs increases.

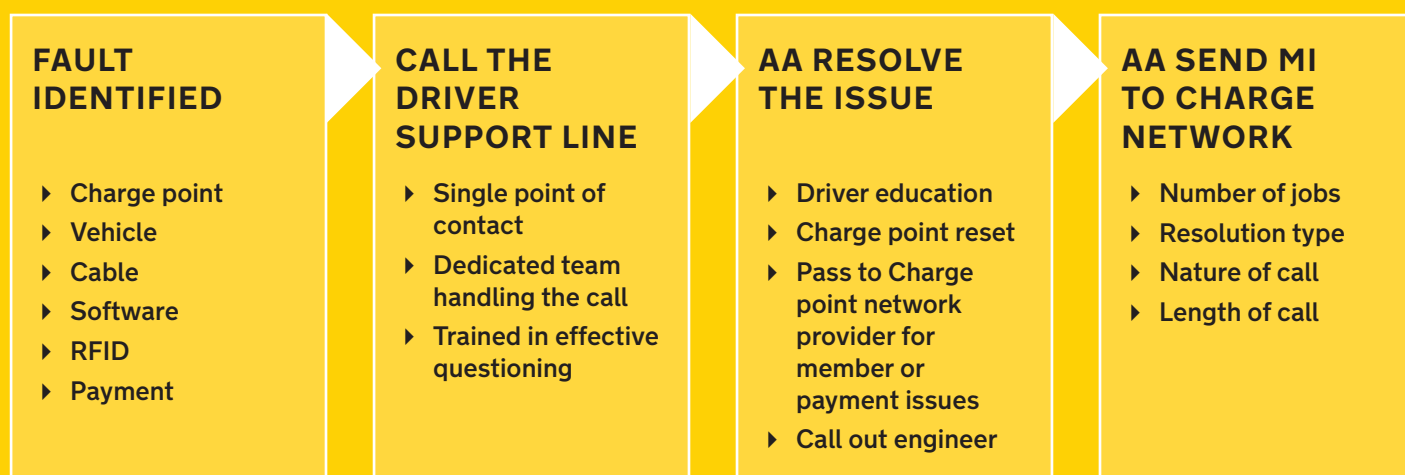


SWARCO eVolt, the electric vehicle charging business, is providing even greater reassurance and support for EV drivers using its rapidly expanding E.Connect UK charging network by partnering with the AA.

As part of its managed services offer, the AA team will support drivers if they need help at an eVolt charge point, handling calls about both the electric car and electric charging infrastructure.

Justin Meyer, Managing Director of SWARCO eVolt: “By partnering with the UK’s largest motoring organisation, we are showing SWARCO’s commitment to making EV driving as seamless and enjoyable as possible.”

Dean Hedger, EV New Business Development Manager at the AA: “As we develop our EV expertise, including having the largest group of EV Level 2 trained technicians in the UK, the logical next step is to ensure we can support the infrastructure that goes hand-in-hand with EV vehicle roll-out.”



Increasing AFV adoption

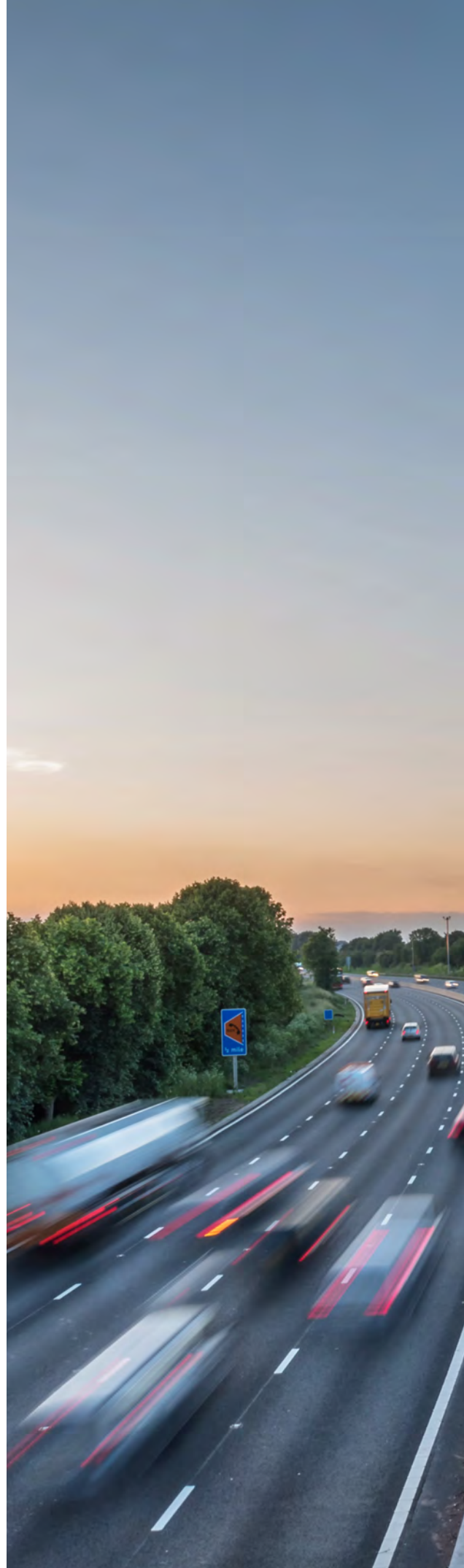
It's clear that as things stand, the issue of reducing emissions by eliminating ICE engines from the UK's fleet vehicle parc cannot be solved by EVs alone – and that there is therefore a role to play for LPG, LNG, CNG and hydrogen-powered vehicles too.

Around EVs specifically, one area that would still seem to require major progress is batteries and there are calls for greater research and development and the establishment of battery gigafactories to enable the production of batteries which will facilitate greater range and payloads.

OEMs also need to produce suitable AFVs in a timely fashion, especially on the commercial side, as there has been far less progress in LGV and HGV than car. There is some good news here from the Operational Fleet Report - some 67 per cent of respondents in commercial led fleets believe the range on offer had improved over the last 12 months, although this is still some way short of the 81 per cent in car-led fleets.

A further incentive would be the scrapping of VAT on sales of AFVs, and removal of the 'premium VED rate'. Scrappage schemes and incentivisation to invest in workplace charging could also play a part, as could the leasing of infrastructure rather than companies having to make a large upfront capital investment in this area.

As well as choice and incentive, organisations also need greater knowledge of how they can develop their fleet. Undertaking research on areas such as whole life costs and total cost of ownership, while examining how vehicles are used and driven, will enable fleet managers to see what types of AFVs could readily be introduced into their fleets. The availability of independent guidance on this area will help even further.



LOGISTICS UK

Logistics UK (formerly FTA) is one of the UK's leading business groups representing the entire logistics sector. With COVID-19, Brexit, new technology and other disruptive forces driving change in the way goods move across borders and through the supply chain, logistics has never been more important to UK plc.

Natalie Chapman, Head of Urban Policy at Logistics UK, shares the group's position and insight on electric vehicles.

"In the view of Logistics UK, electric vehicles (EVs) will play a vital role in helping the UK reach its environmental targets. While businesses within the logistics sector are keen to transition to EVs as soon as possible, we need to see urgent action from government to ensure the right infrastructure is in place and for manufacturers to commit to timelines for commercial EV development.

"To understand the realities of introducing EVs into commercial fleets, Logistics UK researched the experiences of 30 of its members, with participants ranging from small, local operators to large international fleets. The report found there is incredible determination to create positive change across the logistics industry, with nine out of ten operators who are already using EVs planning to expand their fleets within the next three years. The report did, however, identify some significant barriers to further adoption, such as a lack of vehicle type and availability, inadequate grid capacity, restricted access to infrastructure and range anxiety.

"The report also outlines fleet operators' frustrations with the limited vehicle-types available; 71% of respondents who decided against purchasing EVs cited this as the primary reason. Logistics UK is urging manufacturers to progress the development of heavier EVs – those weighing more than 3.5 tonnes – as well as models such as tippers and pickups; we would like to see more definitive timelines from manufacturers as to when such vehicles will be available. But we also understand developing electric HGVs is challenging, not least because of the weight of the batteries; these vehicles are typically heavier than cars and LCVs and so will naturally require more power. HGVs have legal restrictions as to how much weight they can carry, so additional battery weight significantly compromises the payload.

"While the future for freight may lie in electric HGVs, this is a long-term goal that requires further investment and development. In the meantime, Logistics UK is campaigning to solve a more immediate issue: securing a definition for an Ultra Low Emission Truck (ULET). This would incentivise manufacturers to invest more resources into developing these vehicles; testing new technology can be expensive but a ULET definition would provide clear parameters and stimulate demand. And with cities across the UK looking to go even further than the Euro VI requirements of Clean Air Zones, a definition would provide authorities with a criterion that can be applied consistently across the UK, preventing the patchwork of standards we are seeing emerge. At Logistics UK, we will continue to assist the government in developing a single, clear and workable definition for ultra-low emission trucks and vans; we would also like to see a framework for fuels which offer lower greenhouse gas emissions.

"For those running fleets of smaller vehicles, such as LCVs, they are more likely to see progression towards full electrification take place over a far shorter time period. To meet the government's environmental aims – such as its target for net zero emissions by 2050 – the industry needs clearer deadlines from manufacturers as to when the technology will be developed and readily available for the mass market, in addition to commitment from government on installing, or funding, adequate power supply and charging points. Businesses in the logistics sector are on board with electrification; it is now up to government and manufacturers to make the next move."

For more information please visit www.logistics.org.uk

Managing the Benefit-in-Kind (BiK) situation

The good news for fleets which adopt EVs, in particular is that the tax burden on drivers will be much lower than on ICE vehicles used as company vehicles.

Pure EVs will not be subject to any Benefit-in-Kind tax at all for 2020/21 – irrespective of the date the car was registered. In 2021/22 they will attract a BiK rate of just 1 per cent, and just 2 per cent in 2022/23 just two per cent.

Where full EV adoption isn't yet deemed desirable or possible, a PHEV makes an attractive alternative. For example, a PHEV, which can do around 25 miles on battery power alone will have 49g/km CO₂ emissions, and will attract a BiK rate of just 12-14 per cent.



Getting it right with fleet integration

Taking the time to analyse how vehicles are used and driven, and getting expert advice, will help ensure the right choices are made when it comes to integrating AFVs into a fleet.

Once a decision has been made, drivers need to be educated in best practice and getting the most out of their vehicles.

In the area of breakdown, our own research shows that the top five EV faults relate, in order, to tyres, 12v battery failure, HV battery being out of charge, HV battery fault and HV charging equipment. However, for the last three, the faults are frequently attributable to operation rather than failure – so investing time to educate drivers in how the different technology should be used is absolutely vital.

When it comes to EVs, the top five tips are as follows:

1. Conserve momentum – this helps extend the intervals between charging
2. Avoid harsh braking
3. Watch your speed. EVs are typically quieter than ICE vehicles so it is easier to go faster than you think without noticing
4. Reconsider use of heating and air conditioning – these drain the battery so charging intervals will be shorter
5. Know your vehicle's eco features



Beyond Breakdown

As part of our commitment to customer service, we work closely with partners to develop innovative solutions that go beyond breakdown. We seek consultative relationships, rather than transactional or price-led contracts. In recent years, we have invested heavily in front line support and technological innovations.





Rescue Tracker

Almost 50% of business breakdowns are now tracked via our innovative and award-winning *Rescue Tracker* system, providing increased oversight and reassurance to fleet managers and their drivers.

Since the Rescue Tracker application was rolled-out, calls from business drivers and their fleet managers requesting live job updates have decreased by almost 20%, while digitally-tracked breakdowns continue to rise.



Accident Management

The risk of accidents is an ever-present consideration for business vehicles and fleets. They can be traumatic for drivers and negatively impact a business. We offer an end-to-end accident management service that makes it as easy as possible to get customer vehicles back on the road.

The service uses dedicated incident coordinators to manage every aspect of each case, including repairs, liaising with insurers, legal services and uninsured loss recovery.



To ensure drivers are capable and operate safely, DriveTech, from the AA, offers innovative fleet risk and driver training solutions. These help fleet managers ensure legal compliance, improve driver competence and reduce operating costs.

During the COVID-19 pandemic, DriveTech has successfully moved its classroom-based sessions to a digital platform and continues to deliver its essential training to businesses across a range of sectors.

There is a free DriveTech toolkit at www.drivetech.co.uk to guide drivers and anyone managing a driving community on readjusting to getting back on the road safely during this unprecedented time.

DriveTech work with the Energy Saving Trust as a recognised official partner and provide an eco-driving component of their on-road driver training to encourage road-users to drive economically as well as safely.

In addition, they have seen an uplift in interest in their EV familiarisation training courses. Practical and real-world, they help drivers and fleet managers appreciate the benefits of EV, as well as helping to dispel any concerns or queries in advance of greater adoption, and to help accelerate fleet driver acceptance.



Conclusion

The introduction of AFVs represents arguably the greatest ever change to the UK motor vehicle sector. It presents major opportunities for all vehicle users including fleets but it is clear that irrespective of the intentions of policy-makers, there is a way to go before universal adoption can be achieved.

Introducing punitive measures on polluting vehicles is not on its own an answer to reducing emissions if suitable alternatives are not available. In these instances, many fleets will simply accept the fine and carry on as they were.

For adoption to increase, perceptions around AFVs need to change – but for that to happen, the reality has to alter too. Batteries, range, payload and charging infrastructure are just a few of the areas which will need to develop significantly, for EVs to become used in as a widespread a way as possible. Similarly, across all AFVs, a far wider choice of suitable vehicles has to be available.

Whatever the make-up of the UK's future national fleet, as a business we are here to help – at the roadside with the breakdown services for which we are best known, but beyond that with other services which will help keep the UK's fleets operational and effective.





There are more than 4 million vans and trucks on UK roads. As the UK's most popular breakdown cover provider, we cover a large proportion; 65% of the UK's top 20 car and van fleets.

We serve almost 10 million business customers, attending 3.5 million business and personal breakdowns each year. Offering 24/7 assistance, 365 days a year, we also support more than a quarter of sole traders who operate vehicles and invest in breakdown cover. We have more highly skilled mechanics than anyone else, almost 3,000 of them.

Our cutting-edge technology and expert mechanics mean we can fix 8 out of 10 cars at the roadside.

