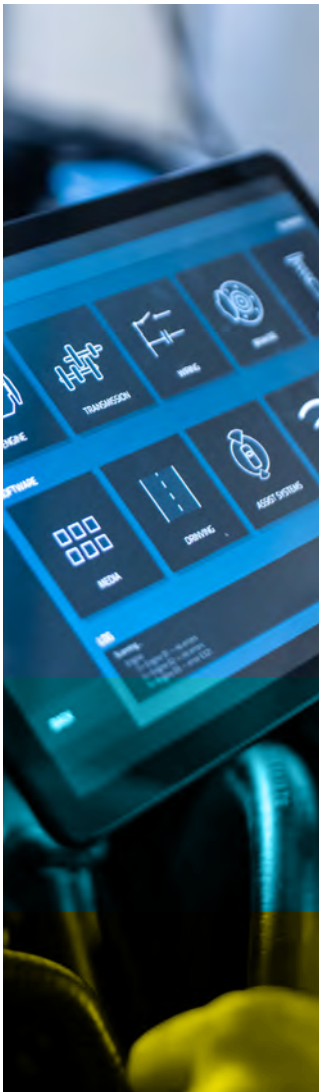
INSTITUTE OF THE MOTOR INDUSTRY

IMI RESEARCH
APRIL/2023

ELECTRIC EVOLUTION

Examining the Triumphs, Trials and Roadblocks of the UK's Electric Vehicle Aftermarket



Summary headlines

- Auto Trader are predicting that the number **pure EV vehicles will make up 24%, 7.9 million vehicles of the total car parc by 2030.**
- To meet this demand the IMI predicts that the number of **IMI TechSafe qualified technicians required to work with electric vehicles by 2030 is 77,000, increasing to 89,000 by 2032.**
- **Currently EV technician skills transition is making good progress but there are risks of it not keeping up with EV uptake in the future** due to factors such as aging work force, current sector vacancy rates and cost of living crisis potentially restricting spend on training.
- **As might be expected, larger companies such as dealerships are ahead of independents in the take up of EV training.**
- **There appears to be a good geographical spread of technicians undertaking EV qualifications**, it is not focused on London and South England, but also strong take up in Norfolk and Scotland. However, there are small pockets throughout the UK where there could potentially be a gap between demand and availability in particular Kent, Essex, South Wales and Yorkshire. Targeted engagement for these areas could be beneficial.
- **There is a commonly held belief that EVs can be easier to maintain compared to conventional gasoline or diesel vehicles,** but our research indicates this may not strictly be the case. Examining 2021 MOT test data, EVs failure rate for 2018 registered vehicles (all classes) was 11.43% which is lower than diesel (15.88%) but higher than petrol (10.85%). This pattern holds for 2017 and 2016 registration years. This is indicating that EVs fail more than Petrol and given the fact that one can assume a lot of EV owners in 2018 can be classed as enthusiast (early adopters) and would likely maintain their car better than today's average EV driver, its significant finding. The data also indicates that EVs fail more on dangerous items than petrol, primarily being tyres. EVs are 1.9% more likely to fail an MOT test on tyres than petrol vehicles. 43% of all failure items for electric vehicles are related to tyres, compared to 31% for petrol vehicles. In conclusion, EVs tend to use their tyres more quickly than petrol vehicles because of their heavier weight, the use of regenerative braking, and their more efficient driving style.
- **There are more than 235 centres in the IMI network able to delivery EV qualifications.**
- **There is significant opportunity for the automotive training sector to deliver level 2 and above qualifications to support EV skills requirement** and a number of key geographical areas in particular Kent and West Wales.
- **There is also a significant opportunity to offer level 1 qualifications to the supporting occupations** (front of house, customer services and sales) to ensure the sector is able to successfully support the transition to EV.

Introduction & background

The electrification of vehicles in the UK is a major trend that is changing the way people think about transportation. With the increasing awareness of the negative impact of emissions on the environment, more and more consumers are looking for alternative, cleaner modes of transportation.

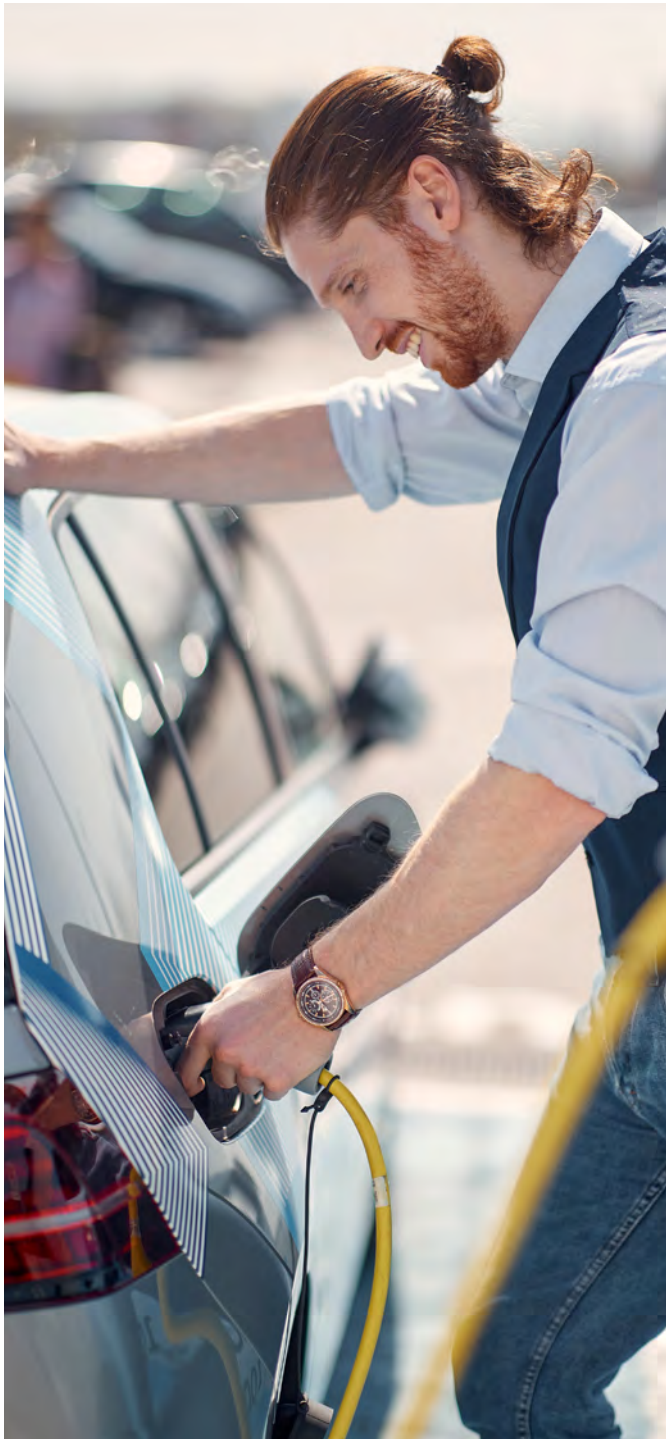
The UK government has also recognized the importance of reducing emissions and has implemented several policies and initiatives to support the growth of electric vehicles (EVs) in the country. This has led to a growing number of EVs on UK roads and an expanding network of charging infrastructure, making it easier for people to switch to EVs. The electrification of vehicles in the UK is a key part of the country's efforts to create a more sustainable and environmentally friendly transportation system.

With Auto Trader predicting that the number of alternative fuel vehicles (AFVs) will make up 34%, 11.3 million vehicles of the total car parc by 2030 and that 24%, 7.9 million vehicles will be pure EV, it is essential that the UK aftermarket is prepared and skilled to support this expansion.

As the industry continues to evolve and new technologies, such as electric and autonomous vehicles, become more prevalent, the skills and expertise required of technicians and other workers in the industry are changing. This is driving a need for ongoing training and education to keep up with the latest advancements and maintain the high standards of service and expertise required in the retail automotive industry.

Vehicle technicians in particular need to be skilled to work with EVs (Electric Vehicles) because these vehicles have different systems, components, and technologies compared to traditional internal combustion engine vehicles. An electric vehicle's power system, for example, uses high-voltage batteries and electric motors that require specialised knowledge and training for maintenance and repair. It is important for technicians to be trained and knowledgeable about these systems to ensure that the vehicles are repaired and maintained properly and safely.

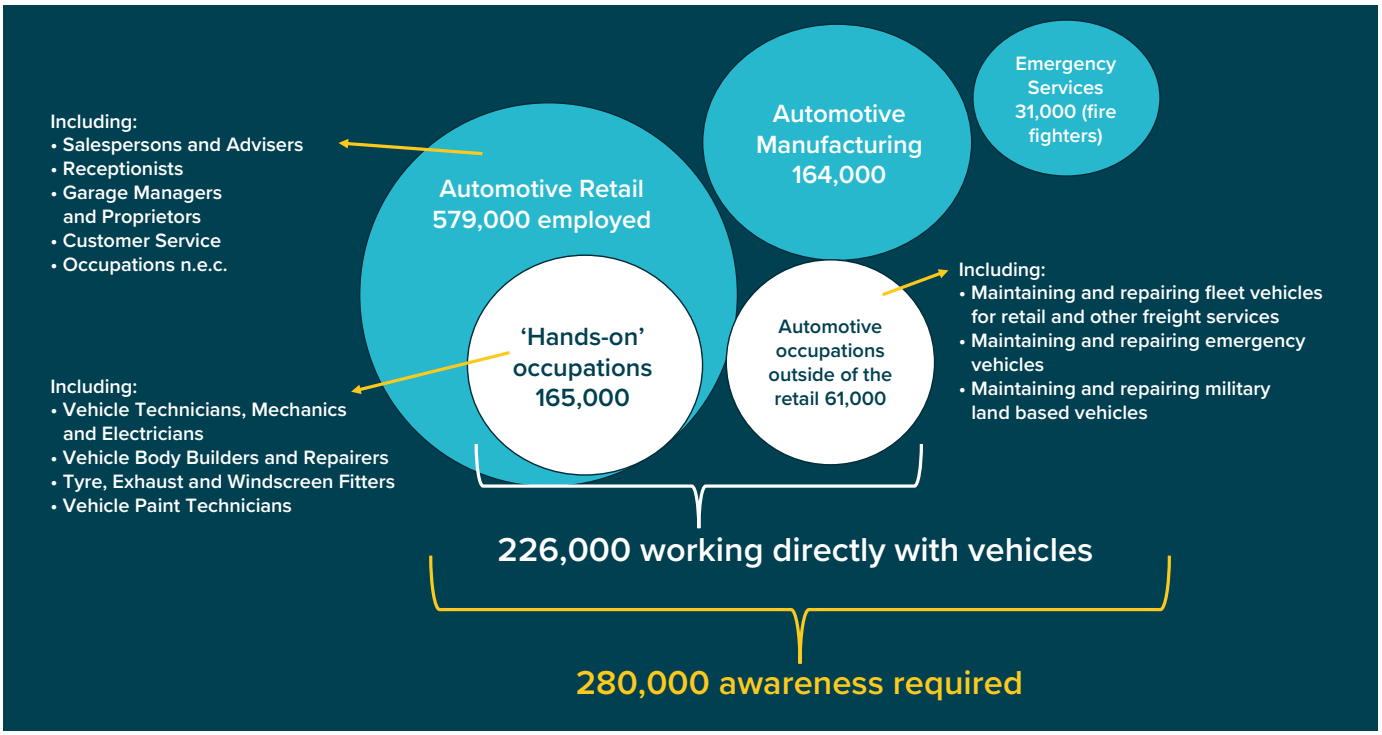
There have been instances where individuals have been harmed while working on electric vehicles (EVs). Electrical hazards associated with high-voltage systems in EVs pose significant risks to technicians who are not properly trained or equipped to work on these vehicles. Incidents of electric shock, burn injuries, and even fatalities have been reported in the past. It is essential that technicians follow proper safety procedures, use appropriate personal protective equipment, and receive adequate training before working on EVs to minimize the risk of injury.



Scale of the challenge

The UK automotive labour market employs over 800,000 people. This includes workers in a variety of roles, such as technicians, mechanics, engineers, salespeople, and managers, across a range of industries including vehicle manufacturing, retail, and aftermarket services. The industry is a significant contributor to the UK economy, with a total turnover of over £77 billion and a strong focus on innovation and technology.

The retail automotive labour market in the UK is a significant part of the country's economy and employs many people in various roles, including technicians, mechanics, salespeople, and managers. According to recent data, there are over 8,000 franchised dealerships in the UK, employing around 320,000 people. It is highly competitive, with a large number of dealership networks and independent garages competing for business.



163,800 jobs in automotive manufacturing

578,000 jobs in the automotive retail sector

employed through **97,000** establishments

There are **226,000** working directly 'hands on' with vehicles in the service, testing and maintenance of vehicles.

280,000 working in supporting roles that require awareness training

There are approximately **168,600** vehicle technicians, **50,074** vehicle salespersons

12,000 tyre, exhaust and windscreen fitters

21,011 body build and repairers

101,900 employed in automotive occupations outside of the automotive sector

to account for retirement, migration and occupational mobility

IMI predicts that we require to fill **160,000** jobs[1] over the next **10 years**

Note: All data as of 2021, please see https://tide.theimi.org.uk/industry-latest/research

[1] IMI report – Automotive sector employment 2021-2031 https://tide.theimi.org.uk/industry-latest/research/automotive-sector-employment-2021-2031

Skills & qualifications

TechSafe

The IMI TechSafe recognition program provides independent assessment and recognition of the technical competence of technicians working in the UK automotive sector. It is seen as an important tool for technicians to demonstrate their technical competence and stay up-to-date with the latest developments and technologies in the automotive sector. By completing the IMI TechSafe recognition program, technicians can demonstrate their commitment to professional development and the highest standards of technical competence. It identifies a member's professionalism and safe working practice in the field of electric vehicles (EV) and other safety-critical vehicle systems such as Autonomous or Advanced Driver Assistance Systems (ADAS).

Level 2 and above – TechSafe eligible

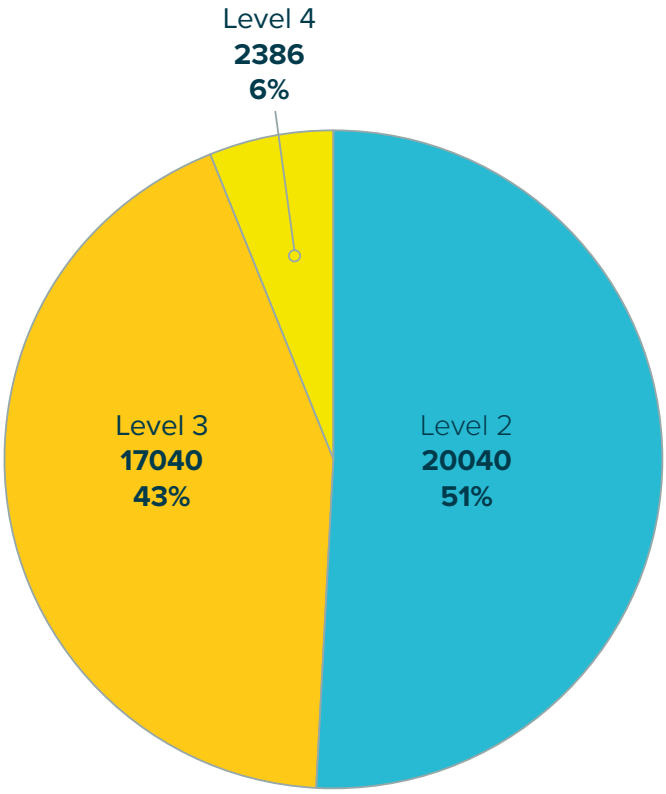
There are 14 products offering an EV qualification at level 2 and above that the IMI considers to be eligible for IMI TechSafe please see appendix for full list. Of these, 12 are formal qualifications and are listed in the table below with the number of certificates awarded. Two are accreditations, the IMI Electric Vehicle Technician Accreditations are included in the total number technicians qualified in the next section, but separate data is not shown due to commercial sensitivities. The Skills and Education Group awards service and repair of electric & hybrid vehicles is not included in any calculation as this data is not publicly available.

Total number of EV qualifications certificates awarded 2016 to 2022 Q4

	Level	Certs awarded
IMI Level 3 Award in Electric/Hybrid Vehicle System Repair and Replacement	Level 3	16712
IMI Level 2 Award in Electric/Hybrid Vehicle Routine Maintenance Activities	Level 2	8901
City & Guilds Level 3 Award in Hybrid Electric Vehicle Repair and Replacement	Level 3	3770
Skills and Education Group Awards ABC Level 2 Award in Knowledge of the Service and Repair of Electrically Propelled Buses and Coaches	Level 2	3540
City & Guilds Level 2 Award in Hybrid Electric Vehicle Operation and Maintenance	Level 2	2525
IMI Level 4 Award in the Diagnosis, Testing and Repair of Electric/Hybrid Vehicles and Components (VRQ)	Level 4	2386
IMI Level 2 Award in Electric/Hybrid Vehicle Hazard Management for Emergency and Recovery Personnel	Level 2	487
Skills and Education Group Awards ABC Level 2 Award in the Service and Repair of Electrically Propelled Light Vehicles	Level 2	355
IMI Level 3 Award in Heavy Electric/Hybrid Vehicle System Repair and Replacement	Level 3	328
Skills and Education Group Awards ABC Level 2 Award in the Service and Repair of Electrically Propelled Commercial HGV Vehicles	Level 2	197
Skills and Education Group Awards ABC Level 2 Award in Knowledge of the Service and Repair of Electrically Propelled Light Vehicles	Level 2	170
IMI Level 2 Award in Preparing Heavy Electric/Hybrid Vehicles for Repair	Level 2	95
		39466

Over 39,000 EV qualification certificates have been issued since 2016, 42% of these are IMI Level 3 Award in Electric/Hybrid Vehicle System Repair and Replacement.

Certificates issued by level



43% of EV certificates awarded are at level 3, 51% at level 2 and 6% at level 4.

87% of certificates awarded are from IMI products.

Level 1 – Awareness

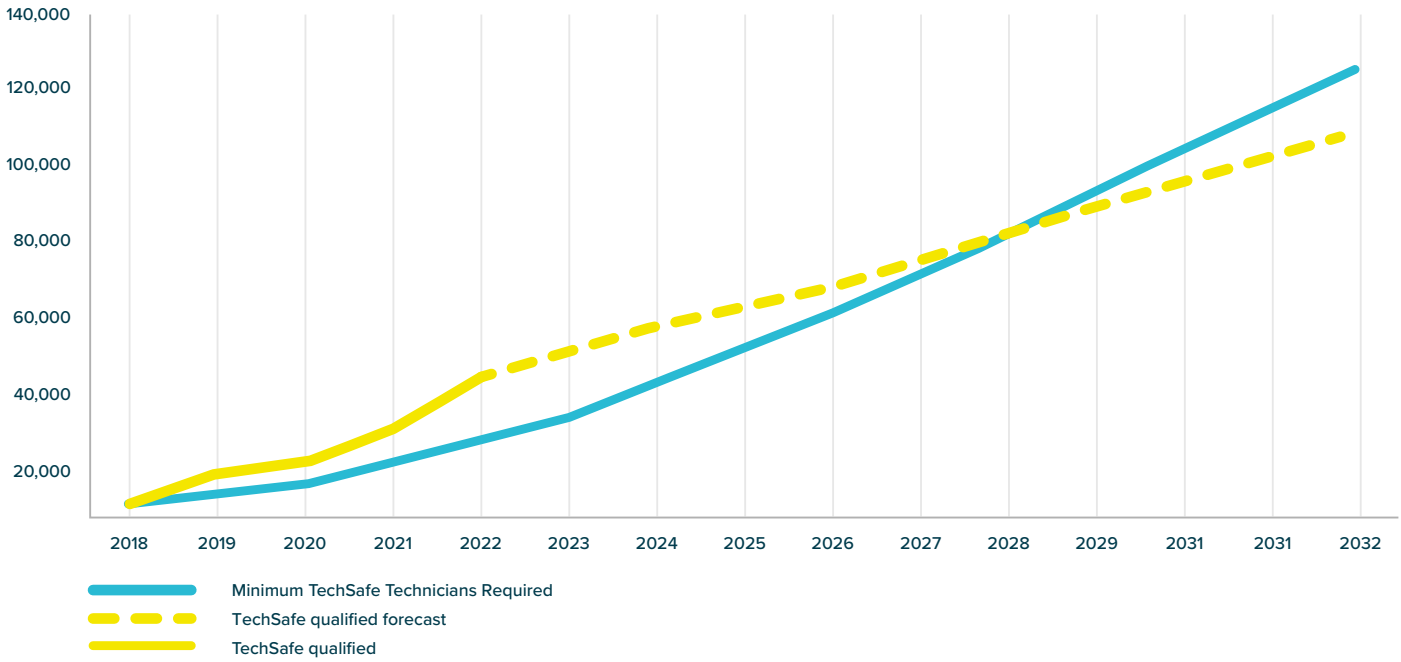
In terms of formal qualifications there are 6 products on the market, 2 from IMI, 3 from SEG and 1 by City & Guilds. However to date there has been limited take up. Its important to note that there are many other skills training products which are not formal qualifications. This data is difficult to obtain.

	Level	Certs awarded
IMI Level 1 Award in Electric/Hybrid Vehicle Awareness	Level 1	3625
IMI Level 1 Award in Electric Vehicle Awareness (VRQ)	Level 1	985
City & Guilds Level 1 Award in Introduction to Electric and Hybrid Vehicle High Energy Systems	Level 1	0
SEG Awards ABC Level 1 Award in Automotive Electric/Hybrid Vehicle Awareness	Level 1	0
SEG Awards ABC Level 1 Award in Bus and Coach Electric/Hybrid Vehicle Awareness	Level 1	0
SEG Awards ABC level 1 Award in Commercial HGV Electric/Hybrid Vehicle Awareness	Level 1	0

Skills gap

The IMI forecast model assumes to be an EV qualified technician, the technician will need to reach a level 2 (or equivalent) or above in an EV qualification or accreditation. This is the same requirements to achieve TechSafe recognition.

Forecast gap between predicted number of technicians required to service and maintain Electric Vehicles and TechSafe EV Technicians[2]



IMI data shows 16% of sector are now IMI TechSafe qualified – but pace of upskilling slowing as economic downturn impacts training budgets. In 2022, over 14,800 skilled technicians were certified by education regulators Ofqual, SQA, CCEA, and Qualifications Wales, boosting the total number of qualified technicians able to safely work on electric vehicles to 39,000.

The latest Auto Trader Insights data outlines a decline in demand for electric vehicles, probably caused by the cost-of-living crisis and doubts about the Government's electrification ambitions. This has led to a dampening of forecasts, with EVs predicted to reach 50% of all new car sales by 2027 rather than 2026 as previously expected. However, Auto Trader are predicting that the number of alternative fuel vehicles (AFVs) will make up 34%, 11.3 million vehicles of the total car parc by 2030 and that 24%, 7.9 million vehicles will be pure EV.

The automotive aftermarket already faces high employment replacement demand caused by an aging workforce, migration and occupation mobility. The uptake of automotive apprenticeships also has not caught up with pre-pandemic levels. There is, therefore, no time to waste in getting the sector properly skilled for electrified vehicles. It is also critical that those already qualified complete their CPD to ensure they remain competent to work on this new technology.

The IMI predicts that by 2030, we will need 103,000 TechSafe qualified technicians to work with electric vehicles, increasing to 124,000 by 2032. However, the adjusted forecast warns of a potential shortfall of 4,500 qualified technicians by 2029, increasing to 16,000 by 2032.

A skills gap could risk the safety of technicians and undermine confidence that consumers' electric vehicles can be serviced, maintained, and repaired by a garage with the right skills. This forecast is still reliant on the sector to continue its efforts to train and skill its workforce at the significant rates, and with current economic pressures there is concern that training budgets are often the first to be cut within business. It is also important to note that for technicians to remain skilled and to maintain TechSafe recognition there is a need for continued professional development (CPD) in order to keep up to date with new technology. This CPD requirement and employment churn outline above, means the 'pot' of those qualified is never truly ever growing but requires continued 'refilling' and continued commitment from the sector.

[2] https://tide.theimi.org.uk/sites/default/files/2023-01/EV%20Technicians%20forecast%20report%20Dec%202022%20update_0.pdf

Business readiness

Types of organisations

Analysis of UK EV TechSafe members on the IMI professional register[3]

	Individuals	Employers	Avg No. per employer
Franchise – Dealership	1526	860	1.8
Independent – Service/Repair Workshop	1448	934	1.6
Accident Repair/Bodyshop	775	352	2.2
Education/Training Provider			
College/Training Provider	374	226	1.7
Education Other	230	24	9.6
Insurance	233	61	3.8
Government/Public Sector			
Emergency Services	144	48	3.0
Military	4	3	1.3
Government (local gov)	43	38	1.1
Other	60	23	2.6
Independent – Dealership	237	168	1.4
Manufacturer	206	104	2.0
Unknown	189	168	1.1
Others	153	83	1.8
Recovery/Roadside Assistance Company	68	14	4.9
Self employed	67	67	
Transportation	59	33	1.8
Fleet/Leasing/Rental Company	61	30	2.0
Parts Retail & Wholesale	46	28	1.6
Logistics/Distributors	21	9	2.3
	5944	**3273**	**1.8**

[3] Data taken from IMI professional register

Those from franchise dealerships are the largest number of individuals on the register with EV TechSafe with 1526 individuals coming from 860 different employers. This is closely followed by individuals the independent service and repair sector.

The purpose of examining average number of individuals per employer is to understand if there is propensity at a small number of employers. This does seem to be the case for those from recovery/roadside assistance and those from emergency services.

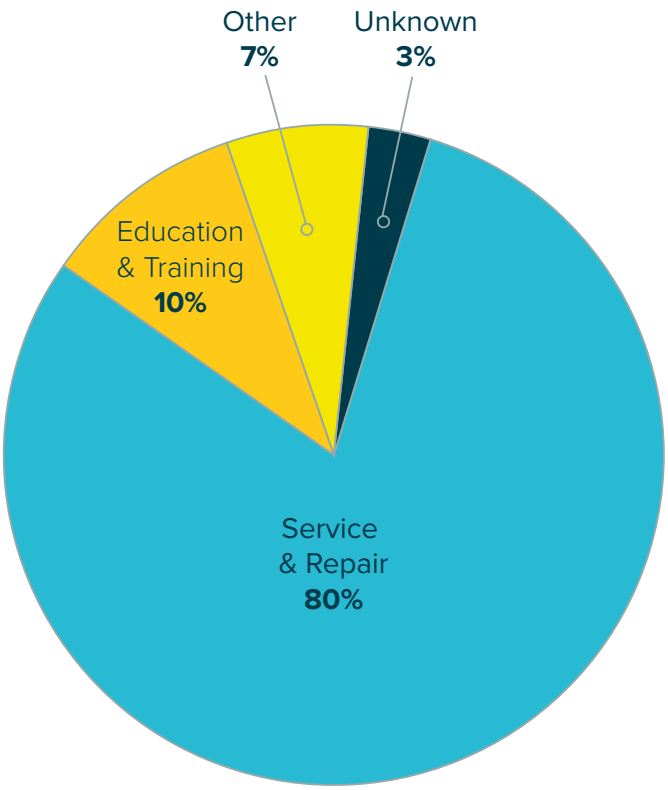
Subsectors

	Employers	Organisations in Sector	%
Franchise – Dealership	860	4564	18.8%
Independent – Service/Repair Workshop	934	12781	7.3%
Accident Repair/Bodyshop	352	11000	3.2%

Take-up of TechSafe EV is faster amongst Franchise dealerships with an estimated 19% of dealerships having at least 1 employee trained.

Due to data limitations, it is difficult to separate independent service and repair and accident repair sub sectors with any significant accuracy and so there will be significant cross over between the two.

EV TechSafe by reason for qualification



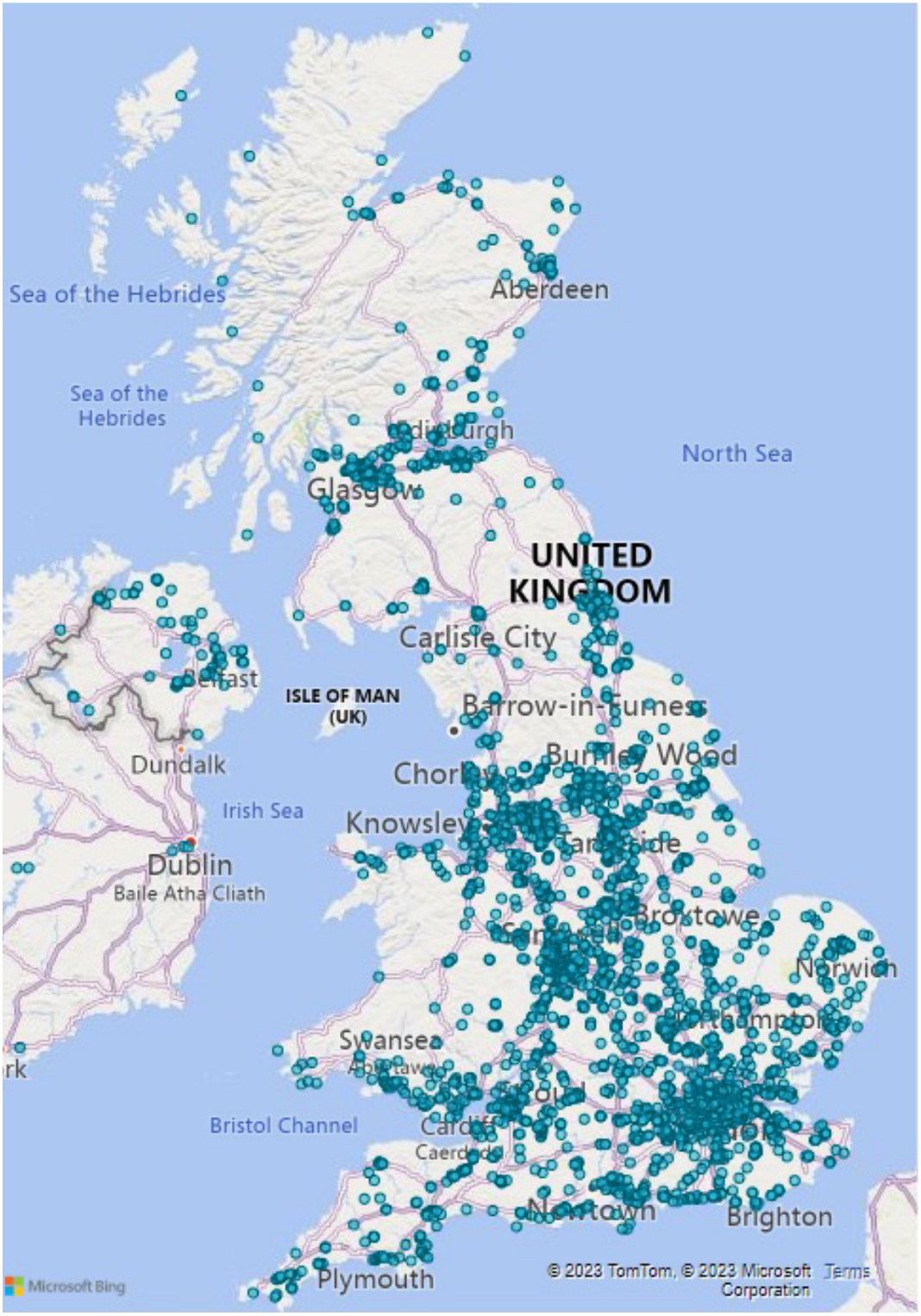
If we assume the subsector and organisation type as the reason they took the qualification, we see that 80% have qualified to carry out service, maintenance, repair of EV vehicles or simply put to be able to work safely with EV vehicles.

10% have qualified to educate and train others.

Geographical analysis

Trained EV Technicians

Map 1: Location of those with EV TechSafe on IMI professional register[4]



[4] Data taken from IMI professional register

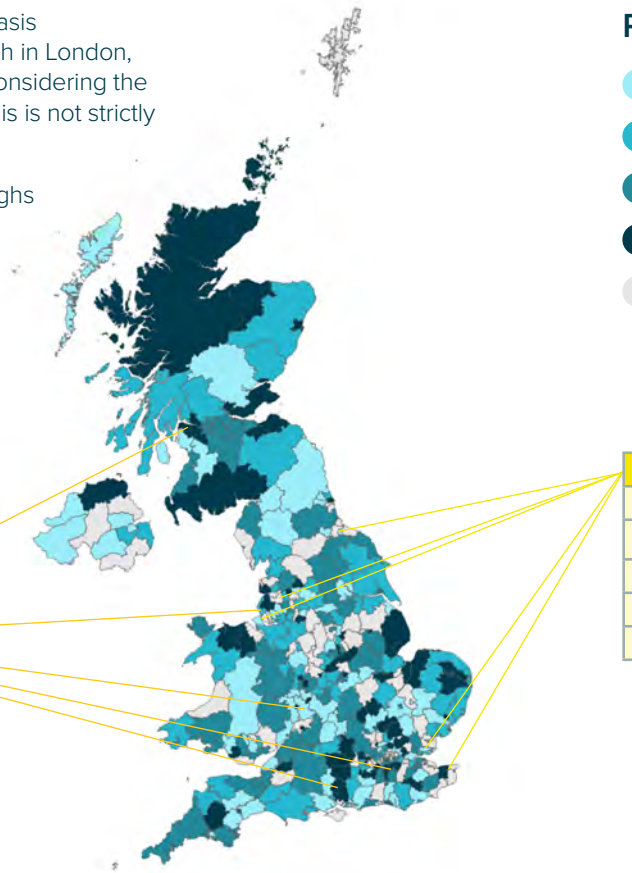
Map 2: Proportion of those with EV TechSafe of all Technicians by Local Authority[5]

Viewing trained technicians from a individual basis (Map 1) it appears that take up is particularly high in London, Birmingham and Manchester, however when considering the amount of technicians within an area (Map 2) this is not strictly the case.

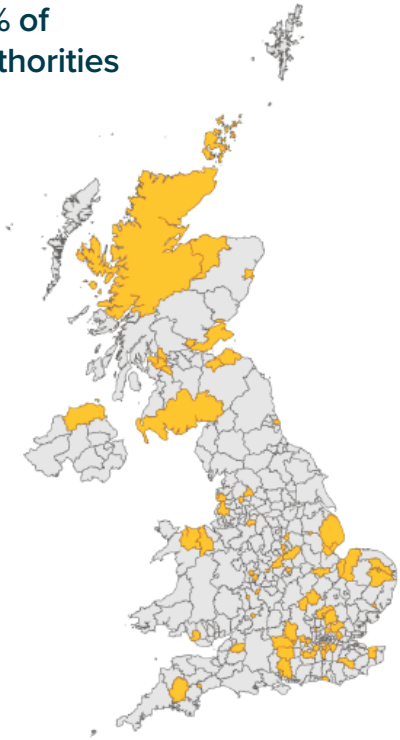
Although there are a number of London Boroughs in the top 20% of local authorities (Croydon) there are also a number in the bottom 20% (Tower Hamlets, Camden).

There is strong take up in Norfolk and in Scotland.

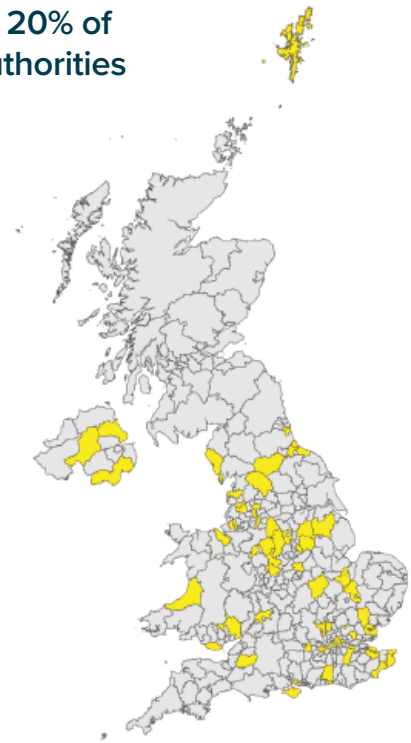
Low take up appears to be in Northern Ireland and central England particularly around Sheffield and Nottingham.



Top 20% of local authorities



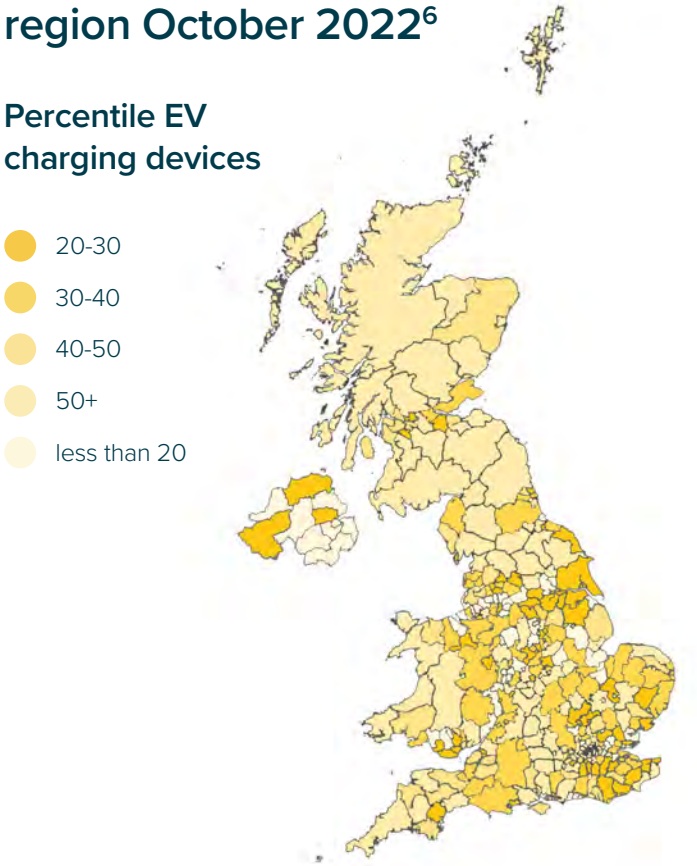
Bottom 20% of local authorities



[5] Number of technicians taken from – https://tide.theimi.org.uk/industry-latest/research/creating-long-lasting-careers-changing-sector

Demand for EV

Map 3: Public charging devices per 100,000 of population by UK region October 2022[6]



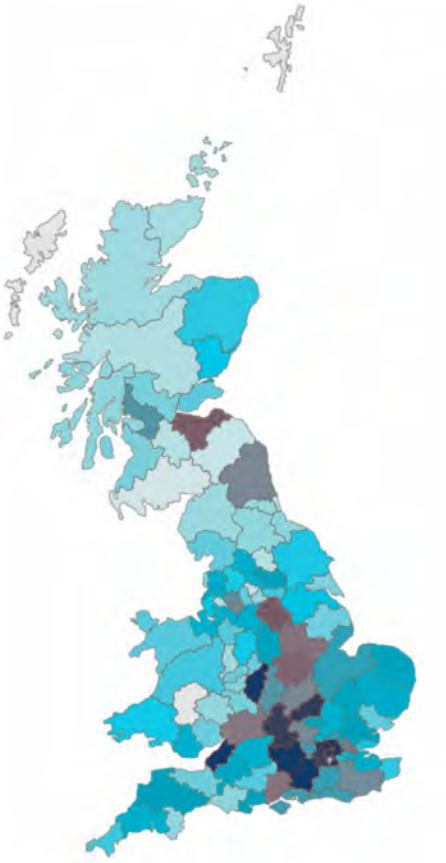
This map shows that London and Scotland had the highest level of charging provision per 100,000 of population, with 122 and 60 devices per 100,000 respectively. In comparison, the average provision in the UK was 52 per 100,000.

Northern Ireland had the lowest level of charging device provision in the UK, with 18 devices per 100,000, followed by the North West and Yorkshire and the Humber with 30 and 33 devices per 100,000 respectively.

From a local authority perspective the top 5 are all London boroughs, with the highest non London borough being Orkney Islands.

There is no charging provision on the Isles of Scilly.

Map 4: MOT Tests of EVs by area postcode – 2021[7]



MOT data indicates demand of MOT tests on Electric vehicles predominantly focused in South England, London and the surrounding areas in particular. However, there is high demand in North East England and South Scotland.

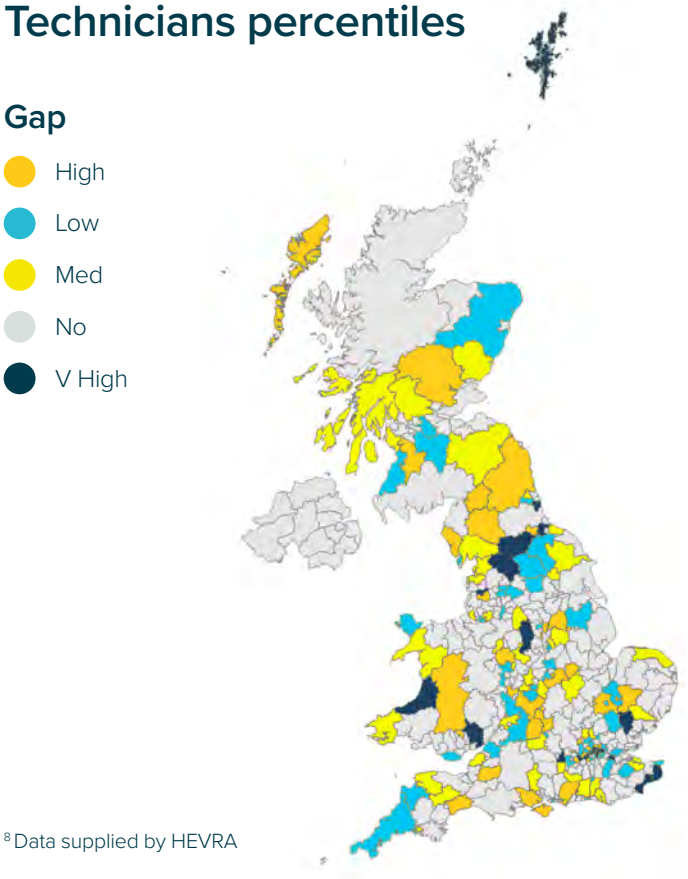
[6] Electric vehicle charging device statistics: October 2022 – GOV.UK (www.gov.uk)
[7] Data supplied by Garage Hive

Map 5: HEVRA map searches in 2022[8]

HEVRA map search data indicates that there is high demand in and around London area and through the central England corridor. Also, hot spots in North East England and South Scotland.

Identifying gaps

Map 6: Map comparing the public charging devices per 100,000 by percentiles to the proportion of those with EV TechSafe of all Technicians percentiles



Comparing the percentiles of qualified technicians to the percentiles of EV charging points those with a mis-match gap are shown on map 3.

There is a significant gap in a number of London boroughs, but this is likely skewed by the likelihood of a high number of public charging points that are likely to not necessarily be were the vehicle is based and therefore where the demand for the technician is required.

However, there are a number of local authorities with a large gap between demand and availability in particular Kent, Essex, South Wales and Yorkshire.

[8] Data supplied by HEVRA

Local authorities with a very high gap

Local Authority	Local Authority Name	Estimated number of Technicians	Proportion EV trained Technicians	No. EV Charging Points Charging
E09000033	**Westminster**	700	0.6%	554
E09000001	**City of London**	363	0.8%	521
E09000013	**Hammersmith and Fulham**	277	0.7%	356
E09000027	**Richmond upon Thames**	294	1.0%	239
E09000028	**Southwark**	589	0.5%	213
E09000019	**Islington**	291	0.3%	155
E09000012	**Hackney**	213	0.5%	141
E09000007	**Camden**	648	0.5%	136
S12000027	**Shetland Islands**	66	0.0%	92
E07000163	**Craven**	168	0.0%	89
E09000030	**Tower Hamlets**	331	0.6%	87
E07000112	**Shepway**	272	1.1%	79
E07000166	**Richmondshire**	175	0.6%	78
E07000107	**Dartford**	463	1.1%	74
E07000108	**Dover**	292	0.7%	70
W06000008	**Ceredigion**	201	0.5%	67
E07000035	**Derbyshire Dales**	308	1.0%	62
E06000041	**Wokingham**	396	1.0%	62
W06000021	**Monmouthshire**	327	0.9%	59
E09000025	**Newham**	472	0.8%	59
E07000126	**South Ribble**	635	0.5%	57
E08000024	**Sunderland**	1252	0.3%	56
E07000213	**Spelthorne**	316	0.6%	53
E07000067	**Braintree**	727	1.1%	52
E06000004	**Stockton-on-Tees**	845	1.1%	51

Geographical analysis key points to note:

- Although there is several London Boroughs in the top 20% of local authorities (Croydon) there are also a number in the bottom 20% (Tower Hamlets, Camden).
- There is strong take up in Norfolk and in Scotland.
- Low take up appears to be in Northern Ireland and central England particularly around Sheffield and Nottingham.
- London and Scotland had the highest level of charging provision per 100,000 of population, with 122 and 60 devices per 100,000 respectively. In comparison, the average provision in the UK was 52 per 100,000.
- Northern Ireland had the lowest level of charging device provision in the UK, with 18 devices per 100,000, followed by the North West and Yorkshire and the Humber with 30 and 33 devices per 100,000 respectively.
- There is a significant gap in a number of London boroughs but this is likely skewed by the likelihood of a high number of public charging points that are likely to not necessarily be were the vehicle is based and therefore where the demand for the technician is required.
- There are several local authorities with a large gap between demand and availability in particular Kent, Essex, South Wales and Yorkshire.

EVs & MOT

With electrified car sales growing in a difficult market, the future of automotive looks clear. What's less clear is the impact on servicing, repair and maintenance that a shift to EVs will have.

There is a commonly held belief that EVs can be easier to maintain compared to conventional gasoline or diesel vehicles, but our research indicates this may not strictly be the case.

It is true that EVs have fewer moving parts, which can reduce the likelihood of mechanical faults, and that their power trains are simpler and may require less maintenance. Additionally, EVs do not produce emissions, which eliminates one of the areas of concern in the MOT test. However, it's worth noting that EVs may not be more reliable in terms of passing the MOT test from some aspects such as tyre, brakes, and lights, that are subject to the same standards and requirements as conventional vehicles. These components can still wear out over time and need to be inspected and replaced if necessary. In fact IMI analysis indicates that due to the increased weight of EVs MOT failure rates are higher when comparing to petrol.

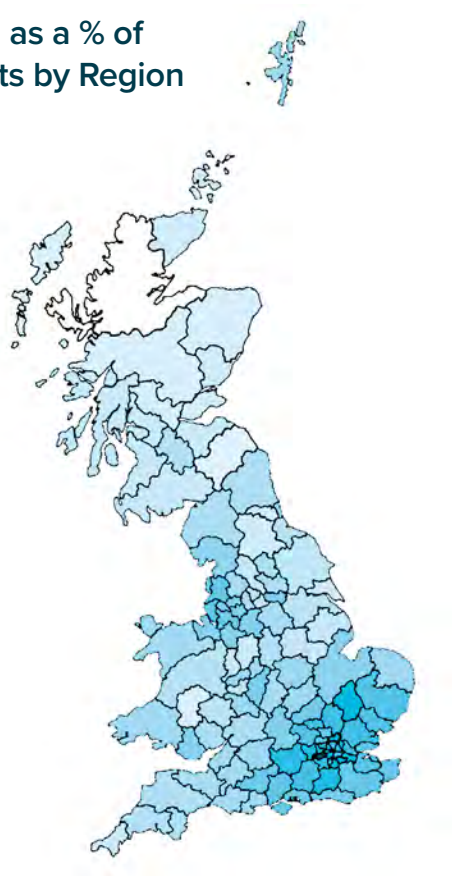
The following analysis of the 2021 MOT data looks to see how EVs and MOT pass/ failure rates compare.

Failure rates by registration year & power train[9]

Year	Tyre Item % Failure
2021	7.87%
2020	12.00%
2019	28.41%
2018	38.75%
2017	33.12%
2016	29.17%
2015	25.90%
2014	22.03%
2013	17.74%
2012	15.46%
2011	13.83%
2010	12.06%
2009	11.14%
2008	9.96%
2007	9.25%
2006	8.46%
2005	7.68%
2004	7.08%
2003	6.82%
2002	6.63%
Total	**13.25%**

Fuel	% of Overall Tests	% of Overall Failure Defects
Electric	6.25%	43.03%
Diesel	5.75%	29.42%
Hybrid	4.76%	42.00%
Petrol	4.48%	30.59%
Total	**5.09%**	**30.28%**

Tyres Failures as a % of Overall Defects by Region



[9] Data supplied from Garage Hive

EVs failure rate for 2018 registered vehicles (all classes) was 11.43% which is lower than diesel (15.88%) but higher than petrol (10.85%). This pattern holds for 2017 and 2016 registration years. This is indicating that EVs fail more than petrol. Plus, given the fact that one can assume a lot of EV owners in 2018 would be classed as enthusiast (early adopters) and would likely maintain their vehicles better than today's average EV driver, it's a significant finding.

The data also indicates that EVs fail more on dangerous items than petrol, primarily being tyres. The data from Department for Transport shows that looking at the class 4 car parc from 2015, electric vehicles are 1.9% more likely to fail an MOT test on tyres than petrol vehicles, which is a relative difference of 40%, with Tesla having the highest likelihood of any car make to fail on tyres. 43% of all failure items for electric vehicles are related to tyres, compared to 31% for petrol vehicles.

EVs wear their tyres differently to traditional petrol vehicles because of their unique driving characteristics. Some of the reasons for this include:

- **Heavier weight:** EVs tend to be heavier than petrol vehicles due to the weight of their batteries. This extra weight puts more stress on the tyres, causing them to wear down faster.
- **Torque delivery:** Electric motors produce a lot of instant torque in comparison to other power trains, this is particularly wearing on the tyres at a standing start.

Vehicle weight by registration year (Garage Industry Trends)

Registration	Electric	Petrol
2018	1,673.99	1,297.21
2017	1,728.88	1,262.51
2016	1,664.82	1,233.18
2015	1,615.72	1,220.67
2014	1,666.01	1,205.34
2013	1,509.63	1,209.09
2012	1,503.02	1,241.37
2011	1,528.92	1,277.57
2010	1,534.84	1,274.39
2009	1,534.06	1,272.69
2008	1,552.92	1,314.53
2007	1,533.06	1,334.02
2006	1,585.41	1,324.38
2005	1,529.41	1,330.14
2004	1,466.83	1,328.68
2003	1,461.44	1,322.28
2002	1,356.83	1,314.40
2001	1,377.57	1,326.76
2000	1,212.50	1,333.95
Total	**1,618.71**	**1,273.19**

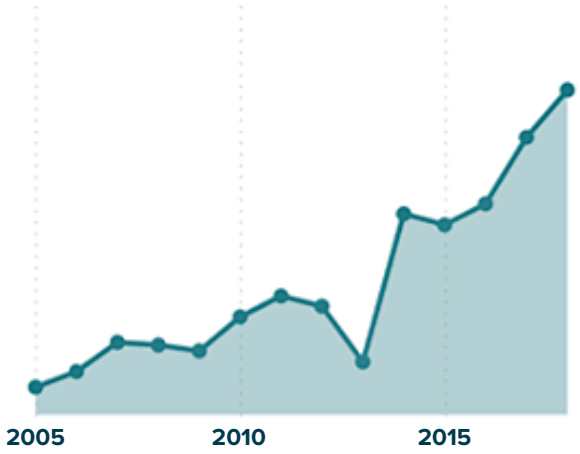
The condition of a vehicle's tyres is critical to safety for several reasons:

- **Traction:** Tyres provide traction between the vehicle and the road. Worn or damaged tyres can reduce traction, making it harder to control the vehicle, especially in wet or slippery conditions.
- **Steering:** Tyres also play a critical role in steering. Proper tyre inflation and tread depth are important for maintaining a vehicle's handling and stability. Worn or damaged tyres can make steering more difficult, increasing the risk of accidents.
- **Braking:** Tyres are a key component of a vehicle's braking system. Tyres with insufficient tread depth or poor condition can reduce the vehicle's ability to stop quickly, increasing the risk of accidents.
- **Blowouts:** Tyres that are worn or damaged can be more prone to blowouts, which can cause a sudden loss of tyre pressure and create a dangerous situation on the road.

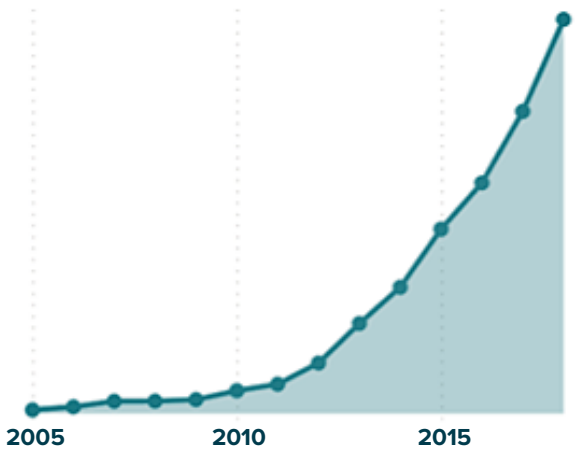
Failure rate by registration year divided by fuel type (Garage Industry Trends)

Registration	Diesel	Electric	Hybrid	Petrol
2018	15.06%	11.39%	11.34%	10.74%
2017	15.74%	13.59%	11.97%	12.53%
2016	18.07%	17.17%	13.53%	16.42%
2015	21.39%	21.36%	15.50%	19.14%
2014	24.97%	22.66%	16.83%	22.39%
2013	29.03%	29.01%	19.24%	26.61%
2012	32.42%	24.32%	21.41%	29.74%
2011	35.16%	26.04%	24.95%	32.92%
2010	38.64%	27.58%	27.48%	36.04%
2009	40.35%	27.85%	27.43%	38.64%
2008	42.23%	29.86%	28.20%	41.43%
2007	43.30%	32.11%	31.72%	42.60%
2006	44.99%	34.75%	31.33%	43.67%
2005	45.85%	35.97%	35.83%	44.47%
2004	47.12%	35.10%	38.13%	44.97%
2003	46.67%	30.85%	34.07%	45.04%
2002	45.92%	35.71%	18.18%	44.86%
2001	45.10%	35.48%	31.25%	43.55%
2000	43.99%	44.44%	36.36%	42.12%
Total	**29.78%**	**20.72%**	**14.78%**	**29.32%**

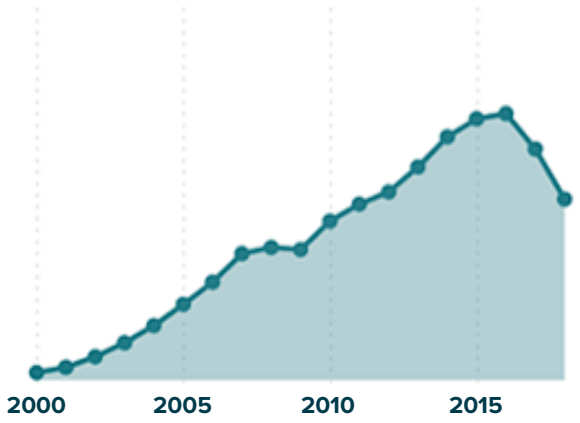
MOTs Test by Registration Year for Electric



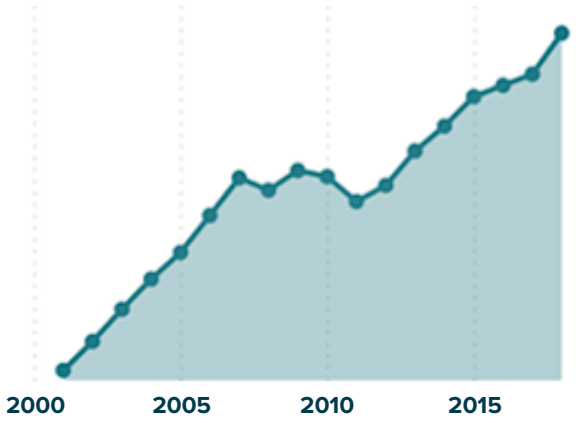
MOTs Test by Registration Year for Hybrid



MOT Tests by Registration Year for Diesel



MOT Tests by Registration Year for Petrol

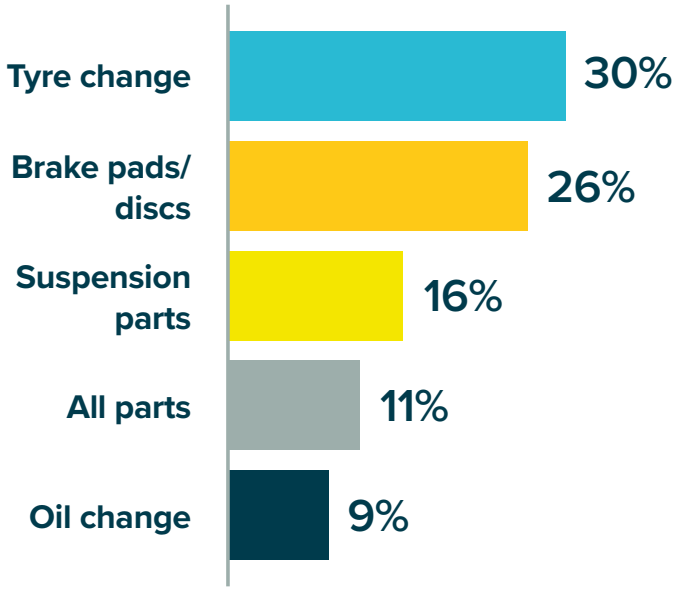


With the majority of first MOT tests taking place coupled with routine maintenance it is shocking that these figures exist for failure rates at all. This suggests that many of these vehicles have not been subject to routine maintenance that would pick these items prior to MOT test.

The current fail rate of vehicles indicates that repairs are only made once MOT tested. Further to this, analysis from GiPA has shown that most repairs report at least one operation that is avoided by customers at an MOT advisory, tyres and braking parts are both safety critical parts, but they are the most quoted operations avoided.

GiPA MOT analysis of advisory operations avoided by drivers

Top MOT advisory operations avoided by drivers

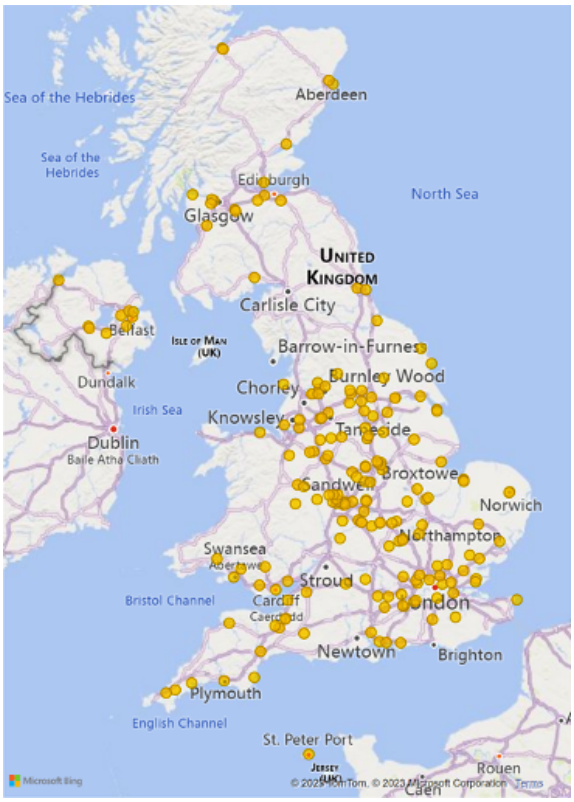


Most repairers report at least one operation that is avoided by customers at an MOT advisory, tyres, and braking parts are both safety critical parts, but they are the most quoted operations that are avoided.

Capacity to deliver training

Training Provision

IMI approved Centres delivering EV qualifications

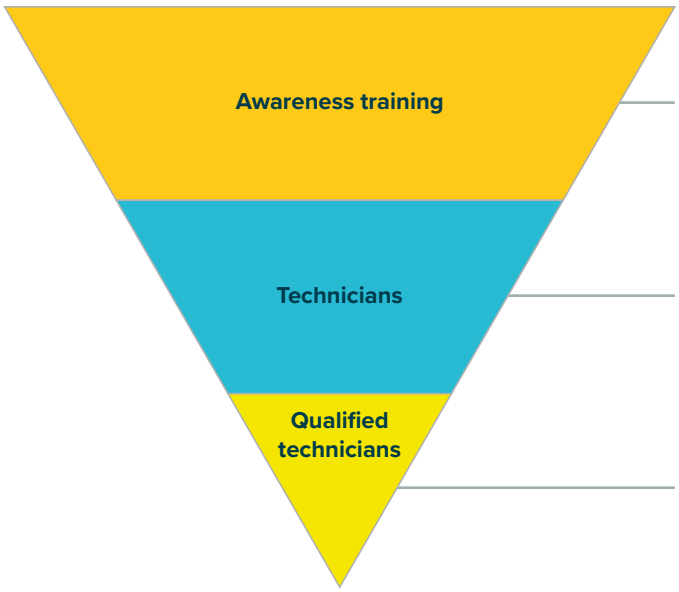


Centres highlighting when started delivering EV qualifications and indication of their size

Offering date

- Last Year
- Older
- This Year

Market size



Size of opportunity by 2030
280,000

Size of opportunity by 2030
51,500-190,000

Qualified to date
38,500

Key opportunities

When examining the gaps in demand compared to current provision 2 key areas appear as key opportunities. The first being Kent. There is currently 1 medium sized centre located in a high gap area. The second is West Wales which is a high gap area and there is currently no provision here.

Capacity key points to note:

- There are more than 235 centres in the IMI network able to delivery EV qualifications.
- There are 2 key areas appear as key opportunities. The first being Kent. There is currently 1 medium sized centre located in a high gap area. The second is West Wales which is a high gap area and there is currently no provision here.
- The number of job posting for those working in teaching and training automotive has been increasing since 2020 indicating a increasing demand and/or a high vacancy rate.


P
Automat

Appendix

List of eligible EV TechSafe qualifications and accreditations

Qual No	Title	Level	Awarding body
600/5220/X	**City & Guilds Level 3 Award in Hybrid Electric Vehicle Repair and Replacement**	Level 3	City & Guilds
600/5221/1	**City & Guilds Level 2 Award in Hybrid Electric Vehicle Operation and Maintenance**	Level 2	City & Guilds
603/4181/6	**IMI Level 2 Award in Preparing Heavy Electric/Hybrid Vehicles for Repair**	Level 2	IMI
603/1466/7	**IMI Level 2 Award in Electric/Hybrid Vehicle Routine Maintenance Activities**	Level 2	IMI
603/1467/9	**IMI Level 2 Award in Electric/Hybrid Vehicle Hazard Management or Emergency and Recovery Personnel**	Level 2	IMI
603/1468/0	**IMI Level 3 Award in Electric/Hybrid Vehicle System Repair and Replacement**	Level 3	IMI
603/4182/8	**IMI Level 3 Award in Heavy Electric/Hybrid Vehicle System Repair and Replacement**	Level 3	IMI
601/2938/4	**IMI Level 4 Award in the Diagnosis, Testing and Repair of Electric/Hybrid Vehicles and Components (VRQ)**	Level 4	IMI
U0100	**Service and Repair of Electric and Hybrid Vehicles**	Level 3	ABC Awards / Skills & Education Group
603/6868/8	**Level 2 Award in the Service and Repair of Electrically Propelled Light Vehicles**	Level 2	ABC Awards / Skills & Education Group
603/6867/6	**Level 2 Award in Knowledge of Service and Repair of Electrically Propelled Light Vehicles**	Level 2	ABC Awards / Skills & Education Group
603/6893/7	**Level 2 Award in Knowledge of the Service and Repair of Electrically Propelled Buses and Coaches**	Level 2	ABC Awards / Skills & Education Group
603/6896/2	**Level 2 Award in the Service and Repair of Electrically Propelled Commercial HGV Vehicles**	Level 2	ABC Awards / Skills & Education Group
ACC-EV-3-20	**IMI Accreditation Electric Vehicle Technician**	Level 3	IMI

EV/Hybrid Vehicle Development Solutions (Light Vehicle)

The IMI have a number of nationally-recognised EV qualifications and accreditations which allow you to demonstrate that your knowledge, skills and competence are of the standard required to work in automotive.

IMI Accredited Assessment

Accreditation

IMI Accreditation Electric Vehicle Technician – Full Route

IMI TechSafe

IMI Qualifications

Qualification

L1 Award in Electric/Hybrid Vehicle Awareness

Qualification

L2 Award in Electric/Hybrid Vehicle Hazard Management for Emergency and Recovery Personnel

Qualification

L2 Award in Electric/Hybrid Vehicles Routine Maintenance Activities

Qualification

L3 Award in Electric/Hybrid Vehicle System Repair and Replacement

Qualification

IMI L4 Award in the Diagnosis, Testing and Repair of Electric/Hybrid Vehicles and Components (QCF)

IMI TechSafe

CPD Framework – EV

CPD credit requirement: 18 CPD credits* across the 3 year CPD cycle. Recommended 6 CPD credits per year

Subjects:

- **Safety issues** (electric shock, updated guidance, codes of practice, HSE, manufacturers' recommendations)
- **Terminology** (from manufacturers' information)
- **Batteries** (technologies, cooling, heating, chemistry/materials, multiple packs, degradation, storage)
- **Cabling and circuits** (cables, safety systems, pilot line, breakers, circuit layouts, colours)
- **Motors/Generators** (technologies, radial and axial, SRM, other)
- **Salvage and recycling** (materials, component value, safety, alternative battery uses)
- **Charging** (fast charging issues, inductive static/dynamic, overhead, 800V/400V methods, modes, V2G)
- **Accident repair and refinishing** (ovens, methods, safety, guidance/requirements)
- **Practical processes** (manufacturers' recommendations, servicing, methods/techniques)
- **Unknown systems** (aftermarket, 'retrolec' classic car updates, DIY)
- **Tools and equipment** (diagnostics, insulated tools, general equipment)
- **Breakdown, recovery and storage** (towing, de-energisation, first responder information, long term storage)

* The IMI use credit-based CPD system where 1 CPD credit is equal to 1 hour of learning.

IMI INSTITUTE OF THE MOTOR INDUSTRY EST. 1920

Please visit our website for further information **theimi.org.uk**

Institute of the Motor Industry
Fanshaws, Brickendon, Hertford, SG13 8PQ
+44(0) 1992 519 025
hello@theimi.org.uk
www.theimi.org.uk

Company Number 00225180