RECHARGE UK

REPRESENTING THE UK EV INFRASTRUCTURE INDUSTRY

CURZON CONSULTING

RECHARGE UK in association with Curzon Consulting:

Harnessing the skills opportunities of a recharged electric vehicle sector

CONTENTS

Executive Summary

RECHARGE UK
REPRESENTING THE UK EV INFRASTRUCTURE INDUSTRY

Executive Summary

This report explores how the UK can equip its workforce for the exciting opportunities emerging in the EV sector. Motor manufacturers, distribution network operators, chargepoint manufacturers, operators and installers, local authorities, software solution providers, and other private and public sector organisations are all involved in this relatively new and fast-developing sector.

The report delves into:

- **Current opportunities: Who is filling them, and what skills are in demand?**
- **Future forecast: What jobs are on the horizon, and how many skilled workers will be needed?**
- **Industry efforts: What is the sector doing to bridge the skills gap and help fill the opportunities on offer?**
- **Government support: What existing support programmes are available and what more is needed?**

It examines how the UK can ensure its workforce is prepared for and has access to the opportunities to learn the relevant skills needed to thrive in this dynamic field.

The above themes are explored through direct engagement with industry participants to develop recommendations grounded in understanding what the EV sector requires to underpin future growth with the right skills and capabilities.

Recommendations

Crucially, the report outlines four key recommendations:

1 **For the EV sector to create and participate in outreach programmes to inspire the next generation of Net Zero heroes.**

2 **For the Government to create local Centres of Excellence for Net Zero skills to mitigate local skills gaps and harness the passion for the environment on display from young people today.**

3 **For the EV sector and UK Government to create upskilling programmes to ensure continued improvement and promotion of opportunities to the existing workforce.**

4 **For the UK Government to create reskilling programmes to ensure that those in the workforce without relevant skills, outside of the EV sector can access the growing number of opportunities on offer.**

These recommendations all require collaboration between the Government, the EV industry, and the Education sector. By adopting these recommendations, the UK can empower its workforce to seize the local and national opportunities offered by the EV industry. Let's prepare for a future driven by sustainability, innovation and rewarding careers for all.

1. Introduction

This report unveils the unique skills opportunities and challenges within the UK's rapidly expanding electric vehicle (EV) sector. It presents a clear pathway to ensure the UK's workforce can fill the burgeoning skills opportunities.

While several reports on skills exist, few offer an in-depth analysis of the EV landscape or propose concrete solutions to bridge the gap between current capabilities and projected demand.

REA's (The Association for Renewable Energy and Clean Technology) annual report, REview 23[1], forecasts a steep rise in renewable energy jobs to 210,000 by 2035, with the sector's contribution to the UK economy doubling to £46bn by 2035. The report also cites RECHARGE UK, the REA's 100-member EV industry group active across the value chain, estimating the total value of the EV industry to reach tens of billions by 2035.

This anticipated growth will translate into thousands of highly skilled job opportunities within the next few years alone. With RECHARGE UK highlighting skills as a critical concern, this report addresses this challenge by leveraging extensive member involvement across various segments of the EV value chain to reveal previously undisclosed insights into harnessing the skills opportunities.

This report aims to serve as a resource for policymakers, equipping them with a holistic understanding of the EV sector, its specific skill requirements, and a clear set of recommendations on how to: -

- **Accelerate the UK's transition to net zero by ensuring a skilled workforce ready to support the clean energy shift.**
- **Upskill the UK workforce: by empowering individuals to access pathways for acquiring in-demand EV skills.**
- **Maximize opportunities for the EV sector: by providing best practices for attracting and retaining a diverse and qualified workforce.**

[1] https://www.r-e-a.net/resources/review23/

The report delves into the specific skill sets required across diverse sectors such as motor manufacturing, distribution network operators (DNOs), charge point operators (CPOs), software providers, local authorities, and technicians. It explains how to ensure that the workforce can access the pathways to obtaining these skills through Outreach programmes, the creation of Centres of Excellence for Net Zero Skills, Upskilling and Reskilling programs.

Building upon this “beacon” report, the REA intends to issue future studies exploring how solar, energy storage, and heat decarbonisation sectors can benefit from the recommendations outlined here.

About the REA (the Association for Renewable Energy and Clean Technology): The REA is the UK’s largest trade association for renewable energy and clean technologies with around 500 member organisations operating across transport, heat, power and the circular economy. The REA is a not-for-profit trade association representing fourteen sectors, ranging from biogas and renewable fuels, bio recycling and energy storage, to solar and electric vehicle charging. Member organisations range from major multinationals to sole traders.

For more information, visit: www.r-e-a.net

2. Skills, opportunities and concerns of the EV sector

Each section of the value chain listed below has its own unique challenges with recruitment, as well as opportunities for the workforce. The concerns are important to mitigate if we are to achieve the 300,000 chargepoint target set by the Government for 2030 and to ensure infrastructure is deployed at pace to keep up with the sales targets in the ZEV Mandate. For the same purpose, it is important that the workforce can access the opportunities each part of the EV sector is providing and will provide.

Manufacturers of road vehicles in the UK:

Concerns

A 2022 SMMT member survey found that nearly eight in ten (77%) of SMMT member companies were struggling to recruit staff in engineering, design and research and development roles, while more than seven in ten (73%) were experiencing recruitment challenges in operations and manufacturing roles. It is clear therefore that a significant system overhaul is needed to ensure that motor manufacturers have the skilled workforce required to fulfil the Government's sales targets set out in the ZEV Mandate - which stipulates the percentage of zero emission vehicles that must be sold each year.

Automotive manufacturers already have predominantly very large, well-established businesses. They have a strong platform from which to upskill their existing workforce as they transition to electric vehicles, which could be pivotal in preventing significant job losses and is often highlighted when manufacturers announce plans for faster electrification[2]. However, although true, it's also the case that larger manufacturers will see higher costs to address this, which will be challenging.

Manufacturers will have to look at reskilling urgently. The 2021 National Electrification Skills Forum report[3] on the opportunity of a national electrification of skills framework found that up to 91% of automotive roles will require some level of reskilling. Roles like exhaust technicians will require complete reskilling to continue working in the sector.

More broadly many existing roles today will need to change from mechanical to electrical focused competencies requiring significant time and financial investment to achieve on the scale necessary to ensure the existing workforce can participate in the electric vehicle transition with their employers.

Opportunities

In 2022 the SMMT Charitable Trust Fund published an automotive industry career[4] guide which estimated the development, production and maintenance of exciting technologies: from hydrogen trucks and electric buses to high-performance sports cars, self-driving vehicles, zero emission components, advanced software solutions and technical roles could be worth £50 billion from the aftermarket sector.

The Climate Change Committee (CCC) estimate that by 2030, between 80,000-100,000 jobs[5] could be created by electric vehicle and battery manufacturing in the UK. There is a significant opportunity therefore for regional and local levels of employment to increase as more manufacturing plants locate to the UK. The workforce must be made ready for these opportunities and clear pathways to accessing them be created throughout the workforce cycle (secondary education, further education, employment) to maximise the benefits these new opportunities will bring.

Distribution Network Operators (DNOs):

Concerns

Horizon Consulting undertook a survey with some of the largest Distribution Network Operators (DNOs) in the UK to understand the challenges faced by them in supporting the rollout of electric vehicle infrastructure through servicing grid reinforcement and grid connection requests. They reported as part of the survey that at present recruitment lead-times to fill electrician roles related to EV are 3 months or longer, and half suggested that they are already seeing skills gaps which are “very significant”. However, going forward 50% of DNOs estimated future demand would grow moderately, while the remainder felt it will be “rising beyond what the current workforce can support”.

Opportunities

The evidence suggests that the current DNO funding model needs to be transformed to ensure DNOs can be resilient enough to respond to the anticipated future demand. If achieved DNO service levels will improve and the deployment of EV charging infrastructure can be accelerated beyond current levels through well-resourced DNOs.

Chargepoint Operators (CPOs):

As the Electric Vehicle (EV) charging market continues to grow, it is crucial to have a sizeable and well-trained workforce of electricians and electrical engineers who can maintain and expand the UK charging network in line with the Government’s target of 300,000 public chargepoints by 2030. Curzon Consulting as part of this report interviewed a number of leading ultra rapid, rapid, fast and slow chargepoint operators CPOs and DNOs.

Concerns

Nearly all businesses interviewed by Curzon Consulting were actively recruiting electricians and/or technicians for EV installation and maintenance with 75% of CPOs expressing the view that the current skills gap was “significant” to “very significant”. Recruitment is predominantly from outside the EV industry and 25% of CPOs stated that it took them 2 months to fill vacancies, with 42% experiencing a lag of 3 months or longer to fill EV electrician roles. (Figure 1)

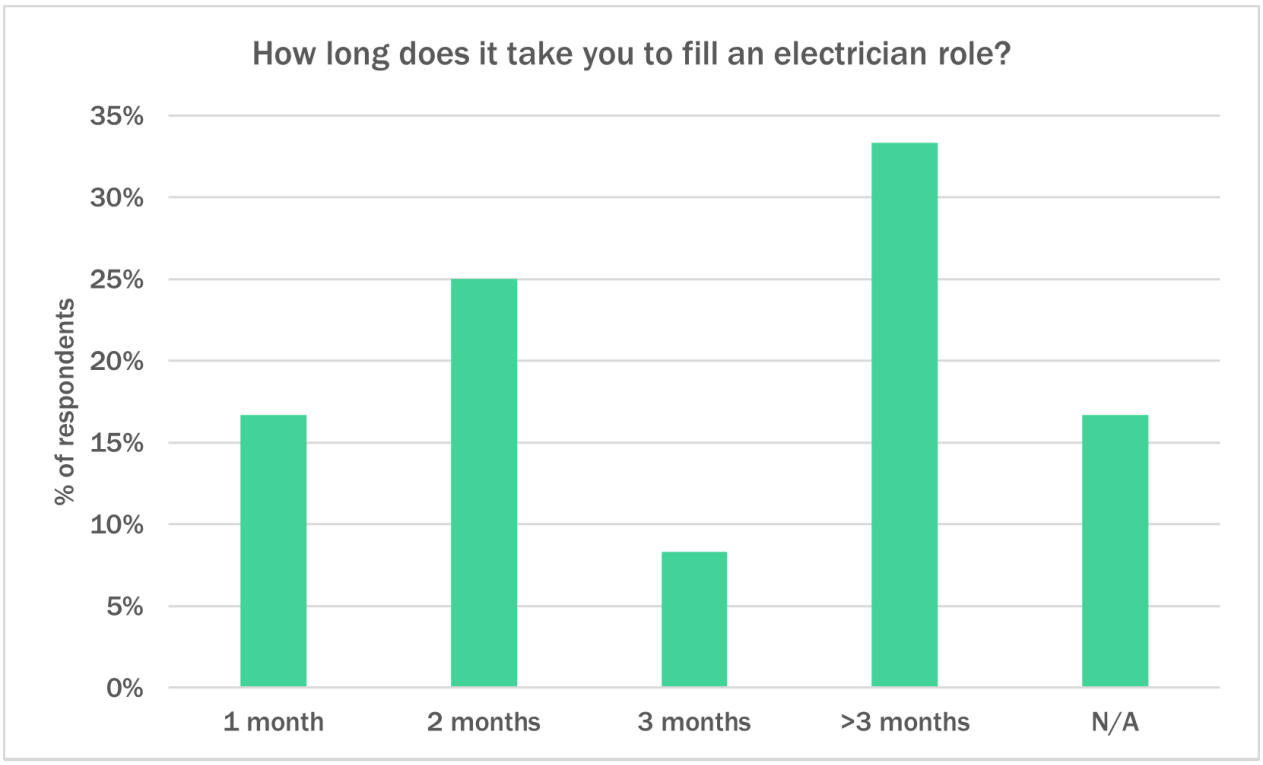
2. https://www.theguardian.com/environment/2023/aug/01/kemi-badenoch-casts-doubt-on-electric-car-targets-over-fears-about-job-losses#:~:text=Kemi%20Badenoch%20casts%20doubt%20on%20electric%20car%20targets%20over%20job%20loss%20fears,-This%20article%20is&text=Kemi%20Badenoch%20has%20suggested%20electric,green%20pledges%20is%20in%20doubt.

3. https://hvm.catapult.org.uk/wp-content/uploads/2021/11/National-Electrification-Skills-Forum-Brochure-FINAL.pdf

4. https://www.smmt.co.uk/2022/11/uk-automotive-launches-career-guide-to-attract-the-brightest-and-best-to-deliver-net-zero/

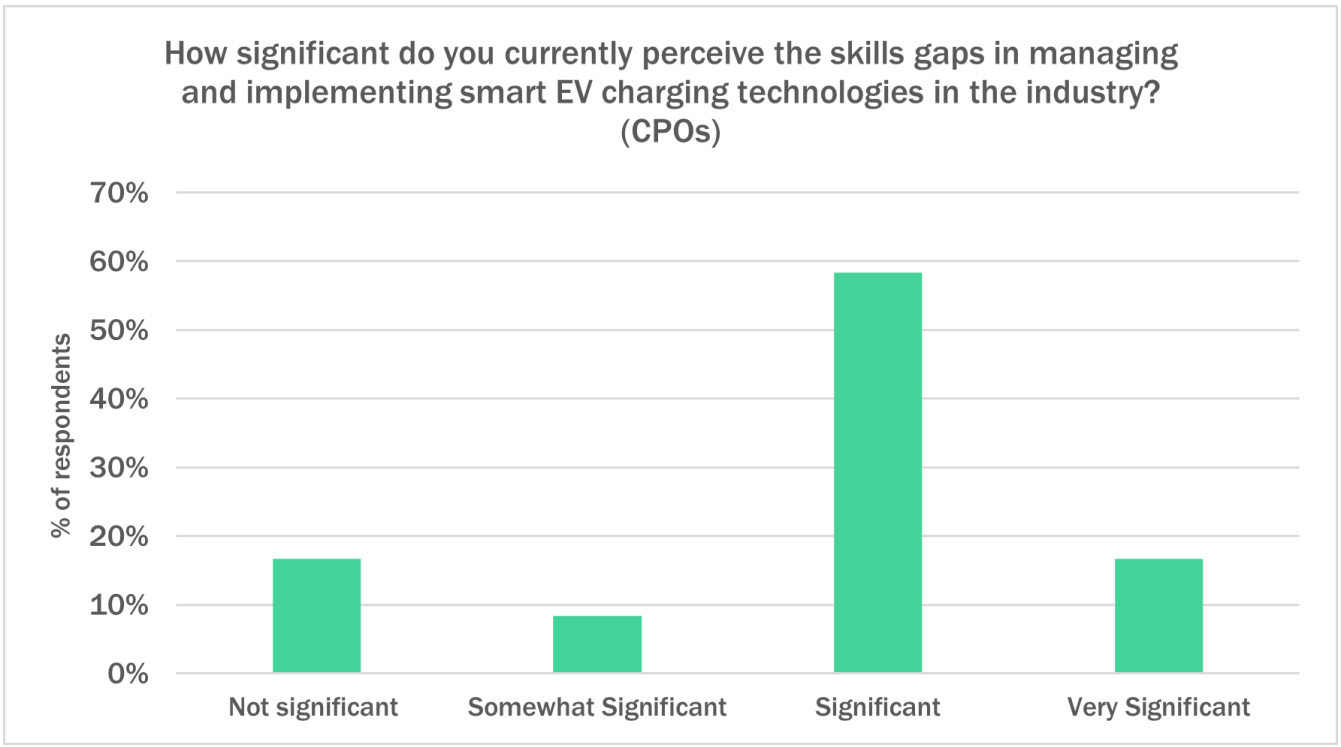
5. https://www.theccc.org.uk/wp-content/uploads/2023/05/CCC-A-Net-Zero-Workforce-Web.pdf

Figure 1: CPO Survey: Recruiting Delays (Source: Curzon Consulting/REA)



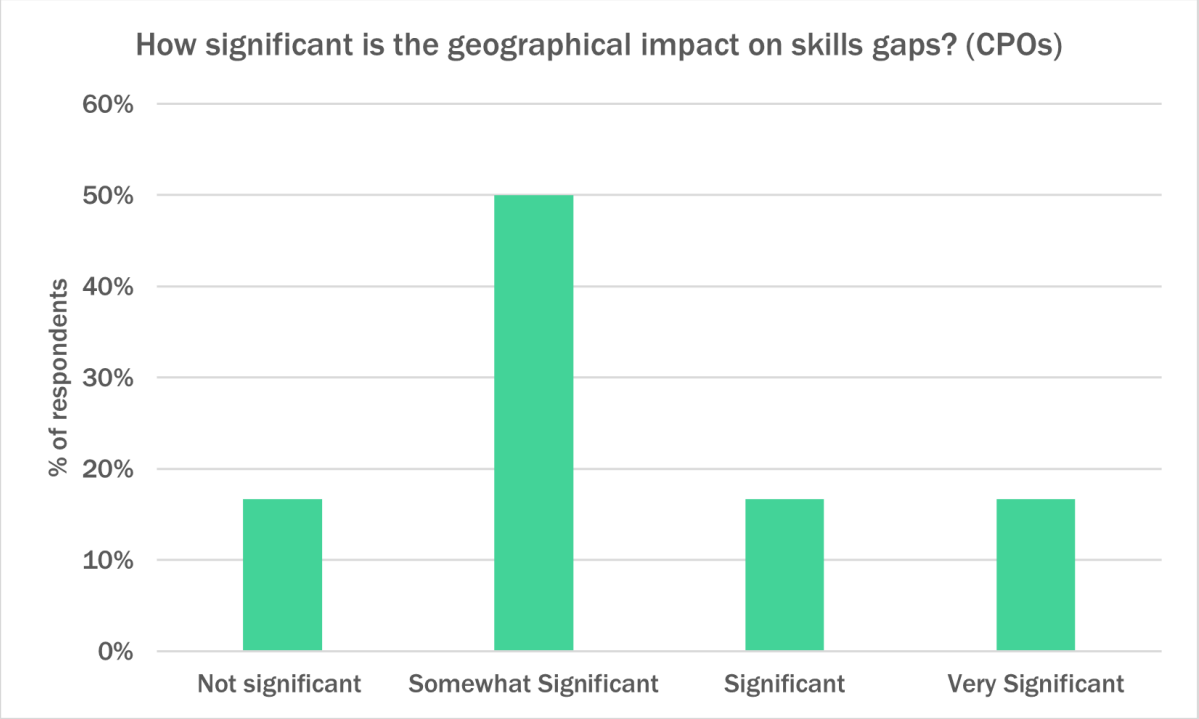
When recruiting for EV roles, businesses are most often looking for experience. A persistent challenge is recruitment of senior technical talent with EV experience and technology knowledge. There is a common theme that despite the quality of available technicians being good, the number of available technicians is just not sufficient for the current rate of installation of EV chargepoints. The sector remains in demand for skilled EV workers.

Figure 2: CPO Survey: Significance of Skills Gaps (Source: Curzon Consulting/REA)



Given the nationwide requirement for chargepoint installation, the geographical availability of EV skills is a potential challenge for the industry. 33% view the geographical variances as having a 'significant' to 'very significant' impact with a further 50% of respondents acknowledging that geography is a 'somewhat significant' factor. One example is the provision of EV maintenance in rural areas with low population density, another is variable demand such as in coastal towns that experience seasonality or event venues with a short-lived high influx of

Figure 3: CPO Survey: Geographical Impact (Source: Curzon Consulting/REA)



Respondents highlighted that EV skilled resources are easier to find in metropolitan areas where qualified technicians choose to work due to higher wages and hourly rates. Some CPOs who outsource their installation and maintenance work actively map supplier geographic density to inform their partner sourcing efforts.

Contractor retention was also cited as another challenge in a supply-constrained market with contractors tending to be highly mobile and very willing to switch business relationships, and an emerging call for workforce management strategies to address the level of volatility within the contract electrician labour force.

Many CPOs operate an outsource business model for chargepoint installation and maintenance, contracting out the work to electrical service companies and individual tradespeople. Creating this demand for electrician and technician skills contributes social value by supporting local businesses and building the skills pool in these geographies. Other technical skills such as EV research and development and software and hardware development are more typically recruited and retained as core capabilities within CPOs. Electrical companies and individual tradespeople that CPOs sometimes outsource to also face similar issues.

Insight Energy - one of the largest installers in East Anglia for solar PV, battery storage and EV chargepoints – provided their cognisance regarding the difficulty of sourcing the right candidates for installer roles.

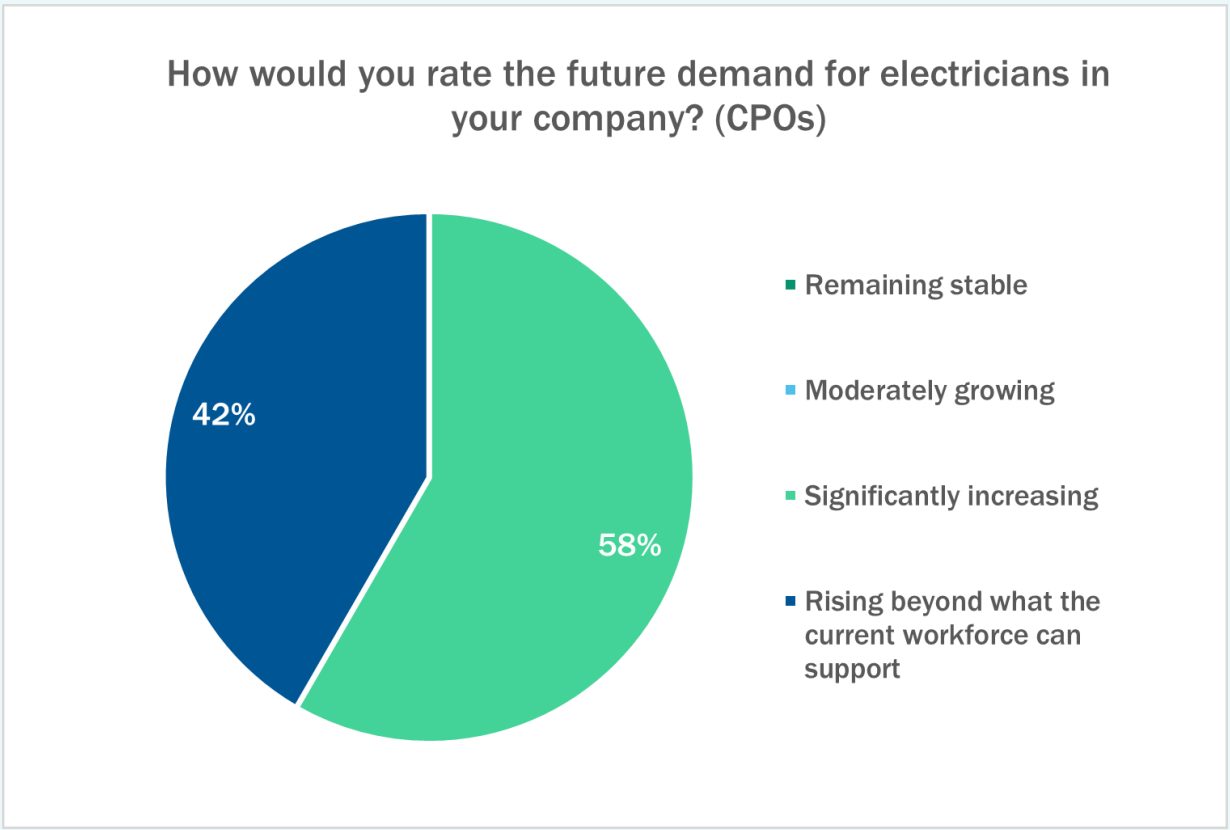
Insight Energy warn that when it comes to recruitment there is a lack of understanding of the whole technology picture, and they currently need to spend resources and time engaging with recruitment consultants to help secure the right people, as the traditional method of posting job adverts attract predominantly unqualified candidates. This incurs extra cost and time for the industry.

It further warns that as clients, especially large businesses who are asking for multiple site installations over a short time period, the installers who are often family run, small businesses will not be able to facilitate the demand without rigorous recruitment. These small businesses will be competing for a limited pool of talent across the UK and are likely to be priced out by larger businesses who can afford substantially higher wages to keep up with demand.

Opportunities

Looking to the future, respondents of our CPO and DNO survey unanimously felt that there will be an increase in demand for electricians. 58% of CPOs felt that demand will be "significantly increasing", while 42% felt that it will be "rising beyond what the current workforce can support". 50% of DNOs estimated the future demand as "moderately growing", the remainder felt it will be "rising beyond what the current workforce can support". This signifies that CPOs and DNOs will be investing in new talent in the next few years and there is an opportunity for the workforce to enter the EV sector this way, if they have the skills required to do so.

Figure 4: CPO Survey: Future Demand (Source: Curzon Consulting/REA)



Local Authorities

Local Authorities can sometimes be criticised for the length of time it takes to approve a chargepoint installation, but they face significant funding shortfalls to hire the staff required to fulfil their duties. The Government's response to the Future of Transport Regulatory Review confirmed that that Local Transport Authorities will now have a Statutory Obligation for the planning and delivering of EV infrastructure that meets the current and future needs of residents, businesses and visitors[6]. However, there has not been a date set for this or details of how this will be implemented.

[6] https://www.gov.uk/government/consultations/future-of-transport-regulatory-review-zero-emission-vehicles/future-of-transport-regulatory-review-zero-emission-vehicles

We suggest avoiding adding this duty on temporary Local Authority teams but rather that an existing statutory role holder should shoulder this responsibility. For example, highways teams will already have experience installing street furniture and are better equipped to manage chargepoint rollout than an environmental team.

Concerns

Prior to this, the Local Electric Vehicle Infrastructure Scheme (LEVI) set aside over £50 million for Local Authorities to hire project managers to oversee electric vehicle infrastructure roll out through the two-year capability fund. Initial feedback gathered from Local Authorities and Combined Transport Authorities raised concerns with the funding whilst available for application for year one in early 2023, the following year able to be applied for late in 2023, meaning that most found it difficult to attract professionals to manage this. And given the two-three-year funding period they have found it hard to find at least one officer with previous experience in electric vehicle infrastructure, as they are not permanent roles and the salaries they are able to offer may not be high enough to attract candidates with pre-existing understanding of the EV sector.

Our second piece of feedback explored in more detail below is the question "What happens after the funding runs out from LEVI?".

This is a serious concern and one that has not been discussed enough to date. Is the purpose of the first two years to assist Local Transport Authorities in generating enough revenue from their chargepoints to fund the yearly wage of a project manager? Many Local Authorities will be responsible predominantly for establishing low powered chargepoints in their regions whose revenue opportunities are limited in comparison to high powered chargepoints.

Furthermore, there is no requirement for Local Authorities to reinvest revenue generated back in to the charging infrastructure but could be reallocated to any number of council activities. So, where is the money for the chargepoints (especially maintenance) going to come from in future after LEVI funding has ended? There is no allocation currently for future charging infrastructure or staff from Government funding, so this is a real concern. There are numerous examples of infrastructure installed under past EV charger grant schemes that could not be maintained or improved due to lack of revenue funding alongside the capital and therefore became stranded assets and unused by drivers. We must avoid this situation being repeated.

Suffolk County Council follows one model where they expect that once LEVI funding has ended, chargepoint rollout will be a concession exercise due to the increased commerciality of the EV sector for private investment. This means they will only manage existing contracts for chargepoint installation and maintenance rather than needing a high level of engineering or project management skills. Their project managers hired through LEVI are retained on three-year contracts and will leave when the LEVI funding expires. They are employed for three years giving some certainty of employment and maintenance of skills needed during the next medium-term period.

After 2026 when LEVI funding is exhausted, they expect the electric vehicle infrastructure to be embedded within their Local Transport Plan. However, it is unclear at this stage what the level of their responsibility or statutory requirements will be in the future and any funding attached. Local Authorities have faced increased responsibilities and reduced central funding for years, resulting in cuts in many areas, so this does not bode well for their capacity to install and manage EV infrastructure after the LEVI funding ends.

Clarity is required on the Government response to the Future of Transport Regulatory Review which proposes that the Government put a statutory obligation on Local Transport Authorities to roll out charging infrastructure. That clarity will enable resource planning to take place with an understanding of how government intends to fund this additional responsibility.

Furthermore, some smaller Local Transport Authorities located in areas outside of towns and cities find it hard to attract people to relocate to their areas for such roles and some have found it impossible to fill them. Several Local Authorities have had to combine with their larger neighbours

whose regions are considered more attractive to potential applicants or resort to (generally higher cost) consultants.

There are at least two further concerns where a lack of resources in Local Authorities could slow down the roll out of chargepoints and electric vehicles, however, if addressed these are significant opportunities to accelerate chargepoint deployment and ensure council vehicles are kept on the road for longer.

Opportunities

Firstly, on the administration side, the processing of Section 50 applications will soon become a serious cause of delay for new chargepoint installations. In our last report, 'Charging Forward to 2030', we recommended streamlining the process or removing it entirely for Section 50s. Subsequently, the Government have consulted on giving EV chargepoint operators the right to carry out street works using a permit rather than a Section 50 licence[7].

Section 50s cost up to £1,000 per application, Traffic Regulation Orders (TROs) cost on average £2,000-3,000 and Road Safety Audits cost £500 per site so this adds significant cost to installation, which can be sometimes prohibitive for smaller operators, creating an uncompetitive environment. Scrapping Section 50s would be a sensible way to free up Local Authority staff to process other applications, preventing the delay to the rollout of other net zero technologies and preventing delay to chargepoint rollout. Alternatively, local councils could take Section 50 costs out of LEVI funded projects, but this will reduce the grant offering to leverage levels of private investment. Adoption of these recommendations would provide the opportunity to accelerate chargepoint deployment and lower costs of installation.

Secondly, Local Authorities electrifying their fleets need engineers to carry out repairs of their vehicles. However, as shown by the Institute of the Motor Industry (IMI), there will soon be skills gaps in technicians capable of EV repair and servicing, up to 4,500 such roles by 2029[8]. Local Authority (LA) funding does not equip them to offer flexible and attractive wages that react to the market for technicians who will and already can command high wages due to their scarcity. We expect it will become difficult for some Local Authorities to retain technicians or attract highly skilled technicians with experience in these important roles. Again, ensuring appropriate levels of LA revenue funding is key here to ensure that the roles advertised by the Local Authority are attractive to the workforce.

Software Providers

Several RECHARGE UK members provide valuable services to the backend of chargepoints, such as data analytics services, energy management, energy system mapping and roaming. Software and coding skills are in high demand across the UK. Although some areas of software such as coding generally and web development have a strong supply of professionals across the UK, more specific, highly valuable skill sets such as the ability to operate Cloud Architecture (such as Amazon Web Services) at scale is more difficult to obtain.

Concerns

RECHARGE UK members Dynamon report that in their most recent recruitment run for an AWS expert applicants demonstrated a passable understanding of what AWS was and how it could be used with unstructured data for analysis of behavioural activities – often used to underpin marketing activities, but not how it can be utilised for the operations of Dynamon e.g. physics-based simulation models and data analysis. This highlights that such an outcome is perhaps owing to a change in the focus of current courses across the UK, focusing on marketing of software skills such as analysing trends on social media, as this is a high growth area and less on the practical applications of those skills to address engineering problems.

In a recent recruitment run, applicants for a Dynamon role (Senior Data Engineer) saw 60% of applicants applying from overseas or without the right to work in the UK. This has made its recruitment more difficult with different levels of visa sponsorship necessary to recruit the best applicants. The present Government rhetoric around immigration has also made these applications more complex to complete.

With unemployment down to 3.8%[9] in the UK, the number of skilled workers available

is lower than the past, particularly in high wage industries like software development. Meanwhile the number of adverts for software engineers, according to Computer Weekly, is 750[10] a day or one new advert every two minutes. Competition being so high, and wages being higher than the UK median income of £34,963[11] a year, with a typical software engineer role being advertised between £44k-£74k[12] a year there is less incentive for skilled employees to move roles due to the higher-than-average salary they have already achieved.

The outcome of these statistics is captured in Dynamon's search for a CAN-BUS specialist. Dynamon capture data from EV's to analyse how they behave in real-world applications. They needed a specialist to decode the data from the CAN-BUS, similar to a "blackbox" device that connects to the vehicle's computer network. Each EV manufacturer has its own bespoke data protocol, meaning Dynamon need to decode the data manually. Unfortunately, despite three separate searches for a suitable candidate in the UK, Dynamon had to use an overseas service provider to achieve this functionality.

Opportunities

The Dynamon case study highlights there is a clear need for more software engineers in the UK. In addition to simply having more courses available for software engineers, there is a need to examine current courses and their suitability for the new burgeoning Sector across the UK. Courses should leave graduates with the ability to take on the multitude of skills opportunities outside of social media analysis, which although an important business tool, is only a small part of the industry. By doing so, the workforce will be better equipped to provide increasingly valuable skills to a growing sector whose demand for skilled software operators is increasing with the recognition of the value software can bring to transition.

Tech-Safe EV Technicians

RECHARGE UK are not best placed due to the membership organisations being from the EV primarily from the EV Charging Infrastructure Sector, to discuss the number of Tech-Safe (an industry best practice accreditation) technicians available to perform repairs on electric vehicles in the UK. However, the objective of this report is to provide context for the skills required to achieve a successful transition to EVs as a whole and to help policy makers understand the bigger picture. Therefore, this report will be using existing data from reputable sources to provide an overview of the recent and future landscape for Tech-Safe EV technicians.

7. https://www.gov.uk/government/consultations/street-works-access-electric-vehicle-chargepoint-operators

8. https://tide.theimi.org.uk/sites/default/files/2023-08/Baseline%20report%202023v4.pdf

9. https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/employmentintheuk/february2024

10. https://www.computerweekly.com/news/252523586/Around-750-new-software-developer-jobs-advertised-every-day

11. https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/bulletins/annualsurveyofhoursandearnings/2023

12. https://tide.theimi.org.uk/sites/default/files/2023-08/Baseline%20report%202023v4.pdf

Concerns

The Institute of the Motor Industry (IMI) previously revealed that in Q1 2023 the number of newly qualified EV Technicians fell by 10% compared to Q1 2022[13]. This is particularly concerning when the latter saw the UK recovering from the effects of two years of Covid-19 restrictions across the UK. The data highlighted that the number of technicians upskilling had fallen. The IMI hypothesised that one reason for this could be that the average age of the UK vehicle fleet is rising each year requiring technicians to spend more time repairing vehicles, leaving them with less time for retraining. Wider skills gaps across the technicians' sector are also forcing employers to spend less time on reskilling to focus on business as usual.

The IMI's baseline report for 2023 recently revealed that 16% of technicians are Tech-Safe EV qualified, down 2% from Q1 of 2022[14]. There is a clear trend that urgently needs addressing from the data presented that the number of Tech-Safe technicians has declined in comparison to previous years for the last two years. The IMI forecast that by 2030, we will need 103,000 Tech-Safe qualified technicians to work with electric vehicles and warns of a potential shortfall of 4,500 qualified technicians by 2029.

Opportunities

One way to address the predicted shortfall is to attract a greater and more diverse range of candidates. The IMI state that currently only 13% of those who work on maintenance and repair of motor vehicles are women. To reduce the likelihood of the IMI's skills gap forecast being realised for Tech-Safe technicians we need to attract more women to choose to work in the sector.

To seriously address this significant gender gap of nearly 9:1, we recommend that a review is undertaken to understand what attracted the 13% of women who are already in the sector to these roles, and for employers to empower women to feel they can provide feedback on what could be done to attract more women to the positions.

[13] https://tide.theimi.org.uk/industry-latest/news/institute-motor-industry-forecasts-31-year-year-drop-ev-qualifications-quarter

[14] https://tide.theimi.org.uk/sites/default/files/2023-08/Baseline%20report%202023v4.pdf

3. Overview of the training required to enter the electric vehicle market

Table 1: Number of electrical courses on offer in the UK (Source: Greenworxz/REA research)

Qualification Levels	Number of Courses on offer
Level One	8
Level Two	47
Level Three	121
Level Four	6
Level Five	4

The EV sector is growing year on year, not just in terms of the number of chargepoints installed, but also the number of electric vehicles on the road, the demand for energy management software, project managers and technicians required to support this growth as demonstrated in the previous chapter.

Paradoxically Pye Tate Consulting's Labour Market Intelligence report for 2023 raises concerns that the number of people with electro technical skills is shrinking year-on-year despite a growing demand for these skills. Since 2018 the number of people with electro technical skills has fallen by 19% from 342,000 in 2018/19 to 276,000 ± 10,000 in 2023[15]. The workforce will need access and understanding of the pathways required to take on these new skills.

According to Greenworkx, who have analysed the Department for Education's Vocational Qualifications dataset for qualifications for those with 'electric' in the title, around 60,000 individuals qualified in at least one electrical qualification last year. To do this Greenworkx analysed Department for Education data on over 15,000 regulated qualifications that have existed between 2012 and 2023. It's clear from the data presented that the electro technical landscape is very complex in terms of the number of different qualifications available. This makes it difficult for those looking to join the sector to clearly understand what is required if they want for example to become a chargepoint installer.

For anyone entering the market or looking to re or upskill this could be very confusing, and it would be helpful to the workforce to have a set of minimum requirements that would qualify someone as a chargepoint installer that is easy to find and understand. In addition, becoming fully qualified is a long journey. The City & Guilds Level 3 Award in Domestic, Commercial and Industrial Electric Vehicle Charging Equipment Installation is showing rapid growth but it's a small subset of the overall qualifications. The Award itself does not make you a qualified installer. So, further to the wide range of qualifications, the "catch 22" here is the additional challenge of needing practical experience before you are deemed a competent person.

Each CPO will likely have varying requirements due to the specifications of their product but there should be a clear pathway to ensure that the workforce has a minimum set of requirements. Employees could then be upskilled by individual organisations that need specific qualifications to ensure that there is a greater number of those in the workforce capable of fulfilling the future skills opportunities available to them.

Net Zero Evolution highlight that different CPOs expect different qualifications for installer roles which highlight the difficulty for the workforce to keep up with increasing demand for electro technical skills in the UK. Two examples are shown overleaf:

15. https://www.the-esp.org.uk/wp-content/uploads/2023/06/TESP-2023-LMI-Refresh-879.pdf

Case study EV charger Job 1:

Charged EV Perth, Chargepoint installer - £37,000 salary[16]

Qualifications listed as necessary:

• 18th Edition Wiring Regulations qualification

• EAL VRQ Domestic Installer or City & Guilds Level 2 (or similar) / NVQ Level 3 qualification

Case study EV charger Job 2:

Aero EV Solutions Limited Doncaster, Chargepoint installer - £36,400[17] salary

Qualifications listed as necessary:

• NVQ Level 3 in electrotechnical installations such as C&G 2365 Level 3 or 2330 or equivalent

• Level 3 Award in the Requirements for Electrical Installations BS: 7671:2018

• Level 3 Award in Domestic Vehicle Charging Equipment Installation C&G 2919

• EAL VRQ Domestic Installer or City & Guilds Level 2 (or similar)

• 17th Edition Wiring Regulations qualification.

• Fully qualified 18th Edition IEE regulations

• 2383-18 18th Edition Update

• 2391-52 Test and Inspection (Desirable)

The above examples demonstrate how similar installation roles, with comparable salary offerings have different skill requirements. This highlights how the recruitment landscape is becoming more complex as the demand for electro technical competent workers is increasing. This not only make it challenging for the existing workforce to navigate the job market but also to understand what is expected of them.

The workforce too must be prepared for changes to existing roles, with motor manufacturers being required to hit sales targets for zero emission vehicles in the UK each year until 2035 where all new vehicles sold must be zero emissions at the tail pipe. Existing employees will likely need upskilling or reskilling to ensure they remain employable. This is explored in more detail in the next chapter.

16. https://g.co/kgs/5BvRH8

17. https://g.co/kgs/6AvkKM

4. How to prepare the workforce for the current and upcoming opportunities in the EV sector

Outreach

The first step to addressing skills gaps should be to look to the future and examine ways to attract future young talent to the sector. To date outreach programmes for net zero skills have been very localised and most students whether they are thinking about GCSEs, A Levels, T Levels, or Degree courses have not had the opportunity to hear about the roles available to them in the renewable energy and clean technology sectors, let alone the EV sector.

Anecdotally, from the perspective of a relatively recent graduate, Matt Adams, the Transport Policy Manager for RECHARGE UK at the REA, the job market was always quite narrow when he attended job fairs at secondary school, Sixth Form or University where there were no net zero roles on offer. Matt said:

"When I went to job fairs the careers on offer in no way represented what I wanted to do. It seemed the only careers available to me were soldier, police officer or accountant. Yet the only thing I was really interested in was understanding how I could make a positive impact on the environment, and yet there seemed to be no information or chances available to me at these job fairs."

To prevent a continuation of Matt's and many others' experiences, businesses in this sector need to sign up to outreach programmes, particularly in their local areas and talk to young adults about the exciting opportunities they could harness and help them understand the courses they may need to take to be eligible.

There is currently a new outreach programme underway that RECHARGE UK support, that will help reduce a continuation of this experience.

Net Zero Heroes is a school outreach programme that aims to inspire and educate the future workforce across the EV Charging, eMobility and renewable energy sectors in the UK. By linking the curriculum to different role types within our sectors, they hope to show school children that their seemingly "boring" lessons are a route to an exciting future in the renewable / eMobility space. They partner with volunteers who work in eMobility, wind, solar, green hydrogen and carbon capture.

To become part of this volunteering community they ask that seasoned Net Zero Heroes, are able to commit to an average of just 3 hours per calendar year to attend a local school and give an overview of the sector they work in, the role types available, and the educational routes that can be taken to join the net zero economy.

Programmes like this are an excellent introduction to the eMobility space for young people who are just starting to think about their next steps after secondary school. With the right information it could provide a pathway to an exciting eMobility career. Having fresh, passionate individuals speaking will play a crucial role in this and we recommend as many organisations as possible in the public and private sectors look to engage with programs like Net Zero Heroes to inspire the next generation of Net Zero Heroes. There is a need for more such programmes (potentially Government funded) to scale up this outreach.

Centres of Excellence for Net Zero Skills

REA and RECHARGE UK over the last decade has seen the Government's apprenticeship scheme deliver exciting opportunities for young people across the UK. However, it has to date failed to modernise quickly enough and provide enough opportunities to work in the net zero sector despite significant calls for it to do so from across the renewables sector. The current website[18] does not allow someone to filter through net zero roles or specify the sort of role they want such as "chargepoint installer".

We do not believe therefore that calling for reforms to apprenticeships is the right approach when they are an essential way for young people to access the job market even if it is not built to provide long term net zero roles. Indeed, as it stands apprentices could need upskilling or reskilling in a few years' time to enable them access to the net zero sector.

Some higher education institutions are actively looking at ways to provide more net zero courses. The College of West Anglia has received a total of over £4 million in funding to expand their Net Zero Skills Centre. With a £2 million grant from the Combined Authority's Recycled Local Growth Fund, further funding provided by the College of West Anglia (£200,000) and £2 million from Anglian Water @One Alliance[19]. To enable all higher education institutions the opportunity to expand their net zero skills programmes Centres of Excellence for Net Zero Skills could be supported by the Government possibly through additional funds to local authorities and courses sponsored by local businesses.

In England there are also 21 Institutes of Technology (IoT) which are a national network of experienced education providers and leading industry employers, working in close partnerships to deliver education and training. The Network has access to a £300 million capital funding pot to create state-of-the-art industry-standard facilities and infrastructure in which to deliver this learning[20]. The Government are keen to work with employers through IoT's to provide high quality training to help meet local skills demand.

Working within the existing parameters of Government policy which has seen increased focus on vocational courses since the last General Election we believe there is another solution that has yet to be explored. Colleges could be given the status of Centres of Excellence for Net Zero Skills, which could receive additional support from Government in addition to course sponsorship from local businesses in need of particular skills. These courses would be for adults who are 19 years of age or over to undertake additional qualifications to become ready to take advantage of the new roles coming out of the

18. https://www.apprenticeships.gov.uk/apprentices/browse-apprenticeships

19. https://cambridgeshirepeterborough-ca.gov.uk/news/carbon-net-zero-training-centre-to-deliver-hundreds-of-green-skills-opportunities/

20. https://www.institutesoftechnology.org.uk/about

21. https://www.ukri.org/who-we-are/mrc/centres-of-research-excellence/

EV sector, in this instance.

Centres of Excellence for Net Zero Skills would provide courses that are geographically specific, using local net zero employers to sponsor and suggest courses to fill skills opportunities that are needed in the long term. By having Centres of Excellence located in existing colleges there would be a greater geographic availability of courses on offer than through the existing IoT programme to ensure everyone in England is able to access them and provide a clear and obvious pathway to net zero skills.

A chargepoint operator or software provider for example could sponsor courses in software design, or installation and repair and at the end of the course graduates would be invited to start their new careers at the sponsor or sponsors workplace. This would help any sponsor fill skills opportunities they are struggling to fill from the existing workforce and provide a pipeline of new talent each year.

The Medical Research Council (MRC) recently announced funding for Centres of Research Excellence (CoRE) which will be publicly funded with 30-40 sites expected over the next decade[21]. MRC CoREs have 80% of the full economic costs covered by MRC funding support. The additional 20% of costs are covered by host organisations under the dual-support model.

Equivalent 'Centres of Excellence for Net Zero skills' should be funded and could have similar funding levels, with the remaining 20% coming from the private sector e.g. the cost of running the courses, hiring the staff and so on.

The MRC identify four key challenges that CoREs should address:

- Be bold, ambitious and innovative, and address a gap or opportunity which is not being adequately addressed elsewhere;
- Address substantial unmet needs in understanding or modifying human health and disease;
- Have major strategic objectives achievable within the 14-year timeframe which, if achieved, will transform the research field or area of health research;
- Be best pursued through coordinated and flexible, major long-term funding.

Centres of Excellence for Net Zero Skills would provide a valuable avenue in particular to address skills gaps for technicians or those working in software. These roles do not always have the same career progression as conventional office jobs and wages are likely to take precedent over job title. Career progression is predominately based on wages over title and therefore often as new entrants into the market gather experience over a year or two, they will then be able to command a higher wage with their new skill set and experience. This will often take them away from their initial company to a new role, at a different company. Turnover in electro technical roles like installers, engineers and even project managers is therefore very high, both for the public and private sector with new recruits often only lasting as little as two years in any of these roles before going on elsewhere due to higher wages.

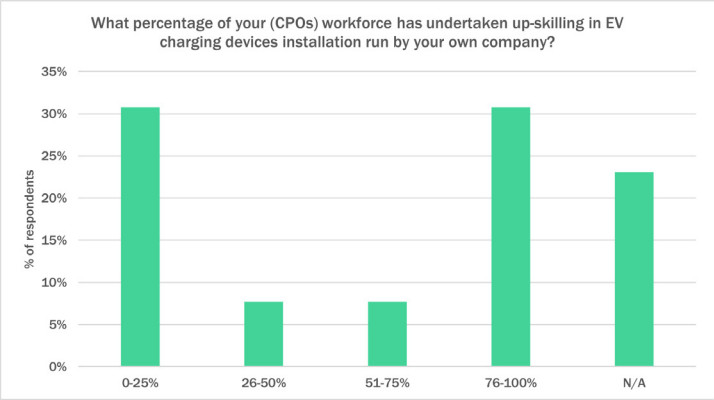
Centres of Excellence for Net Zero Skills would provide predictability, enabling businesses to replace outgoing staff with new graduates from a Centre of Excellence. Such graduates will have the fundamental skills required to enable them to be successful in the sponsor's company. These recruits will then go on to feed the wider sector, helping address wider skills shortages.

They could also benefit Local Authorities. Local Authorities could participate in locally led Centres of Excellence for Net Zero Skills schemes. As part of the public funding for Centres of Excellence for Net Zero Skills Local Authorities should be funded to participate for free, taking a small proportion of students from each cohort on as part of their time in industry. Local Authorities could then offer electrical engineering, battery repair and even project management roles to graduates to ensure skills gaps are eased. As well as providing graduates with experience in the public sector where they can build contacts and have a strong start out of education.

Curzon Consulting as part of the survey with CPOs identified already ongoing efforts by CPOs to both work with educational institutions and sponsor courses which

suggests that Centres of Excellence for Net Zero Skills could be successful based of existing industry precedent. The majority of CPOs surveyed already are actively involved in resolving the "recruit and train" challenge by collaborating with educational institutions (42%), engaging in sponsoring learning and development initiatives (33%), designing apprentice programmes (8%) and collaborating with suppliers (8%).

Figure 5: CPO Survey: Upskilling in CPOs (Source: Curzon Consulting/REA)



All surveyed DNOs also run apprenticeship programmes, upskill existing employees and partner with educational institutions.

40% of surveyed CPOs already collaborate with the education sector, including through access to a pool of talent in areas such as electrical engineering, data science and sustainability, the opportunity for joint research grants and joint development of educational programmes. This highlights that Centres of Excellence for Net Zero Skills have a strong platform from which to launch, with over 30% also sponsoring learning and development initiatives.

An existing institution like the Electrification Skills Network (ESN) (formerly National Electrification Skills Framework), was developed to address a range of issues preventing the UK from realising the potential of electrification opportunities and could be well placed to facilitate engagement between industry, Government and the education sector. ESN works with a sector agnostic forum of employers, providers, technologies, charities and government bodies to draw together intelligence on capability need, workforce planning and employer views, to accelerate these and to create meaningful and structured outputs that can be drawn into providers to address skills gaps.

However, a recognised challenge is a lack of gender diversity in the EV charging sector. In the last seven years, more than 1 million STEM jobs have been created, however women make up only one quarter of the overall STEM workforce[22]. Respondents also made clear that STEM initiatives are critical in promoting the EV sector and in inspiring the next generation. Centres of Excellence for Net Zero Skills could be a catalyst to inspiring and empowering more women in to the sector, giving them a safe and inclusive place in which to learn new skills. It's also important for the sector to start addressing gender diversity through outreach programmes to ensure that women and other underrepresented groups are given the necessary encouragement and guidance on how to pursue a career in the EV sector.

UNICEF arrived at similar conclusions when mapping the gender balance in green roles across Asia and Europe[23]. They recommended programmes, legislation, and commitments be expanded to include all girls and women. Parents must be encouraged to support girls towards careers and learning pathways in the EV sector, and workplace environments in the EV sector must adapt to meet the needs of women. In doing so, female participation in the labour market can expand from simply growing, to growing in the right directions and allowing girls and women an equal space and participation.

We see the four key recommendations of this report, Outreach programmes, Centres of Excellence for Net Zero Skills, Upskilling and Reskilling programmes as key in improving gender balance. There is the opportunity to design them to empower and encourage girls and women to choose to join this growing sector.

Upskilling

Upskilling already plays a crucial role in helping fill the demand for the electro technical roles in the renewables sector. Charge Point Operators surveyed by Curzon Consulting reported that they already do significant work to ensure their employees have the relevant skills to succeed in their role. Upskilling helps the current and future EV skills provision. 77% of CPOs are actively

engaged in upskilling. 38% of respondents upskill more than half of their technician workforce. CPOs who fully outsource EV installation and maintenance work chose the 'not applicable' response.

There are examples of successful industry efforts in future skills development. The Electrotechnical Skills Partnership (TESP) was incorporated as a non-for-profit Community Interest Company in 2019[24]. It was founded by existing key industry bodies, and it supports electrotechnical employers to access the skills needed and to improve the sector's skills landscape. Research carried out on behalf of TESP in 2023 by Pye Tait Consulting[25] provided projections based on a best-case scenario which suggested an additional 33,000 workers are needed over the next four years. TESP have acted on this finding and in September 2023 launched the 'Electrician Plus' programme, an initiative to upskill existing qualified electricians in EV skills in order to satisfy the increased demand.

It's worth noting that every surveyed DNO stated that they are undertaking advanced training and upskilling for their employees. In addition, 50% further engage in basic training programmes and have comprehensive career development pathways.

91% of CPOs surveyed stated that they plan to invest in skills training. The planned levels of investment are small in absolute terms but represent significant commitments for these organisations, most of whom are in their early stages of growth and maturity.

Reskilling

In addition to upskilling those who are already competent in electro technical skills, there is a crucial role to play in reskilling those who want to change professions and try something different. With the Government looking to scrap university degrees which they see as low value there could be thousands of people across the UK who may wish to retrain and be involved in one of the fastest growing sectors in the UK, the electric vehicle sector.

It is the REA's view that the role the military provides in upskilling military personnel as they leave the military and enter civilian life is one of the strongest examples of reskilling. We spoke to Randal Smith, the former COO of Urban Fox who provided insight into how he benefited from the military's approach to upskilling.

22. https://www.stemwomen.com/women-in-stem-statistics-progress-and-challenges

23. https://www.unicef.org/eca/media/33571/file/A%20Gender%20Mapping%20of%20the%20Green%20Economic%20Transition%20.pdf

24. https://electrical.theiet.org/wiring-matters/years/2022/93-november-2022/tesp-the-industrys-voice-on- skills/#:~:text=Originally%20formed%20in%202015%2C%20TESP,Training%20and%20Unite%20the%20Union.

25. https://www.the-esp.org.uk/wp-content/uploads/2023/06/TESP-2023-LMI-Refresh-879.pdf

Randal Smith - The role of the military in upskilling

"UK Military personnel are trained to the highest standards across a wide range of disciplines - Engineering, Building, Transport & Logistics, IT, Management and Health & Safety to name but a few. Couple with that their outstanding leadership and managerial skills gained through their experience and training, and then throw in their in-built discipline, drive and determination, and a 'Can do' positive attitude with a tenacity to get the job done, and you have someone who could prove to be a major asset to any company.

When coming to the end of their military service, the members of the UK Armed Forces will go through a 2-year programme called Resettlement (also referred to as the Career Transition Partnership (CTP)), a service designed to support Service Leavers as they transition from their military career to their civilian employment as they leave the Service. With the ability to access a wealth of support, from career transition guidance, skills workshops, vocational training and routes to employment, this programme is designed to put the Service Leaver in the best possible position, coupled with their extensive military training and skill sets, to offer the greatest benefit to any future employers.

In addition, there is financial backing for Service Leavers to gain additional training and qualifications that will be recognised by civilian companies and can cover everything from DIY and engineering skills right through to supervisory and managerial qualifications.

In my own time on the Resettlement Programme, I realised that I had extensive Project Management experience from my military career, but no formally recognised civilian qualifications such as the Association of Project Management (APM) accreditations or PRINCE2, which are often recognised 'keys' on a CV to get a job in Project Management. Hence, I used the Resettlement Programme to gain these qualifications, leaving the military to join Jaguar Land Rover as a Project Manager on the Jaguar I-Pace EV Programme, a car that went on to win 90 international awards and Car of the Year in 2019. "

Randal's experience of retraining shows that by making training easily accessible, we can unlock the true potential of each individual in the UK, and the resettlement programme is a strong example of best practice in this field. If we want to continue growing the renewables sector as a whole and the electric vehicle sector in this instance, we must continue to strive to allow people to unlock their full potential through such schemes.

The Armed Forces currently have a scheme in place for military personnel looking to retrain into the automotive sector called Mission Automotive[26] which was launched in 2019. The scheme is an industry initiative which helps those leaving the military, or those who have already left, to find employment in the automotive industry. This is an example of best practice where an industry supported programme has gone on to reskill trained professionals and provide them with new career opportunities, with the focus of the scheme seemingly on addressing skills gaps in the EV manufacturing sector.

This military retraining scheme could be supported and rolled out further to other parts of the EV sector, providing highly trained, and driven professionals in to a rapidly growing sector, in need of their skills. Mission Automotive was a collaboration of industry and the military and further collaboration between the military and wider EV sector could lead to the successful growth of the scheme and help military personnel taking part be able to access the skills opportunities coming from the whole EV sector.

The UK Government has established Skills for Careers[27] which acts as a platform to show those looking to retrain or learn new skills how they can access them through a variety of programmes. In England, the Government has two existing upskilling schemes and one future scheme for upskilling, but they are not net zero specific.

Skills Boot Camps which are free courses of up to 16 weeks for adults aged 19+, which focus on digital, technical, and green skills [28]. Those that complete the course are also guaranteed an interview with an employer, however net zero or "green skills" are only one of several options available.

Free Courses for Jobs[29] allows eligible adults aged 19+ to gain a free Level 3 qualification. However, once more these courses are not net zero specific and indeed run the risk of providing pathways to roles that will require additional net zero training later down the line. For example, someone could learn how to fit a boiler, but to future proof they should really learn to install a heat pump as well and capitalise on the high demand for this at the moment.

The Lifelong Learning Entitlement (LLE) will apply from September 2025, and will provide loans for learners studying courses at Levels 4-6 † up to age 60[30]. However, this like the tuition fee loan is likely to burden individuals with lifelong debt that they are unlikely to be able to pay off beyond the interest fee payments. We would urge the Government to consider how interest will be applied, so that it does not put people off who do not feel they can afford that debt and to lose a percentage of their pay cheque each month. Roles in the electric vehicle sector should be for everyone and proper support to empower people to make the decision to upskill or reskill is required to attract more people to the sector.

In Wales, the Welsh Government have launched two programmes which allow people to choose to learn and develop skills in the net zero sector for free. The Green Personal Learning Account[31] is a pilot scheme which provides free, flexible courses and qualifications. This encourages people to refresh their skills in specific sectors like manufacturing, engineering and the energy industry. Courses can be taken part time to fit around an existing job and is targeted at those earning below the median income in Wales.

The Welsh Government's second programme 'ReAct+'[32] is designed to help the unemployed upskill and find work needed by their local employers. The programme is extensive and offers the following:

- **Up to £1,500 to help get the relevant skills you need - Vocational Training Grant;**
- **Up to £4,550 to help cover childcare/ caring costs when training;**
- **Up to £500 of personal development support to help remove barriers to employment - Personal Development Support;**
- **Mentoring and work experience;**
- **Up to £300 of extra support towards additional costs when training, including travel and accommodation.**

The two programmes above are examples of policy that is working towards solutions to enable people to fulfil their true potential and fill skills gaps in the sector.

Schemes like the one in Wales must be rolled out across the UK and adequately funded to reach full impact. Electric Vehicle Charging related employers including manufacturers, could take advantage of such schemes and work with Government to highlight where in the country they need the relevant skills and then as a result have skills gaps filled and financial support for wages and training provided by Government. This level of support would be beneficial across the entirety of the UK to help those who may want to retrain but can't afford or don't know how to and employers who are looking to fill crucial gaps in their workforce.

As of November 2023, 11.6% of all 16-24-year-olds are Not in Education, Employment, or Training (NEET) – this equates to 794,106[33] individuals. There is an opportune moment with this generation of individuals with strong beliefs in environmental protection and climate change awareness to harness this passion through a Government funded re/ upskilling programme. Three quarters of a million 16–24-year-olds could benefit from a scheme like this as well as the wider number of unemployed people across the UK. They may want to make a positive impact on this world but just need support to empower them to grasp the skills opportunities that are out there.

26. https://www.missionautomotive.org/

27. https://www.skillsforcareers.education.gov.uk/your-training-options

28. https://www.gov.uk/guidance/find-a-skills-bootcamp

29. https://www.gov.uk/guidance/free-courses-for-jobs

30. https://www.gov.uk/government/publications/lifelong-learning-entitlement-lle-overview/lifelong-learning-entitlement-overview

31. https://workingwales.gov.wales/personal-learning-account

32. https://workingwales.gov.wales/how-we-can-help/react-plus

33. https://explore-education-statistics.service.gov.uk/find-statistics/education-and-training-statistics-for-the-uk

The UK Government must therefore take inspiration from one of our most prestigious and long-standing services, the armed forces and look to facilitate and empower employers and training centres to provide the courses and offer the support individuals need to enter the EV sector. The UK Government is already doing a lot of work on supporting reskilling in other sectors, which gives us confidence similar support could be provided to the EV sector and wider support provided to the net zero sector, some examples of this are below.

The 2021 North Sea Transition programme [34] supported by the Government committed to ensuring 40,000 high quality, direct and indirect supply chain roles were kept through the reskilling of existing parts of the oil and gas workforce culminating in the Integrated People and Skills Strategy[35]. Which will ensure that everyone employed in the sector - whatever their background - can fulfil their potential through encouraging the design of a people and skills strategy. Similar to our report, it makes strong recommendations on aligning standards and qualifications, developing vocational education pathways, defining pathways, and championing diversity and inclusion.

The Minister of State for Business, Energy and Clean Growth at the time that report was published, The Rt Hon Greg Hands MP endorsed the report's recommendations, which gives us confidence that the Government would similarly support the common sense, industry supported solutions in this report, which builds on those in the Integrated People and Skills Strategy.

In addition, the UK Government has granted an additional £1 million in funding to the Forestry and Arboriculture Training Fund[36]. The funding is primarily aimed at those considering switching careers into the sector, as well as those already working in the sector. The funding will cover training courses in a range of areas. This suggests to us, similar support could be given to reskilling programmes for EV related skills in the UK, as well as much greater support for Centres of Excellence for Net Zero Skills.

5. Conclusions and Recommendations

This report has highlighted the ongoing concerns and opportunities from across the EV sector, the current uncertainty created by the training required to enter the market and provided recommendations which if adopted will accelerate the transition to electric road transport and the deployment of its infrastructure.

We have demonstrated that industry is already committed to improving access to the sector through outreach programmes, sponsoring courses and providing upskilling programmes internally. Indeed, chargepoint operators surveyed are leading the way, through collaborating with educational institutions (42%), engaging in sponsoring learning and development initiatives (33%), designing apprentice programmes (8%) and collaborating with suppliers (8%).

However, we have also highlighted the key barriers and concerns of the EV sector which if not addressed could impact on the ability of the workforce to take up the opportunities coming out of the EV sector. These concerns pertain to appropriate funding levels for local authorities and DNOs to respond to increasing demand for administration and grid connections. In addition to concerns of CPOs, Software providers and installers of how growing demand for electro technical skills will be serviced by a workforce whose electro technical skills are in decline and whose digital skills have a high demand.

We then examined the pathway to becoming qualified to install a chargepoint and reflected on the complex and at times confusing pathways on offer to be deemed competent.

To resolve the concerns expressed in this report we then outlined four key methods to empower the workforce to be ready for the opportunities coming out of the EV sector, with a focus on how the sector can attract a more diverse range of talent.

We reflected that more focus on outreach will set young people up to follow the appropriate pathways through higher education and additional training to be qualified to enter the EV sector. How, local Centres of Excellence for Net Zero Skills could then provide a platform for these pathways to be continued and address local demand for EV related skills which would then in time help address demand nationally. Before we examined how upskilling will be vital in sectors like motor manufacturing to ensure that a higher proportion of the existing workforce is able to continue in employment as we move towards electrical over mechanical skills. We then made a recommendation for a national reskilling programme that could reskill the 11.6% of all 16-24-year-olds Not in Education, Employment, or Training whose generation are so passionate about the environment and net zero and play a wider role in reducing unemployment.

A full summary of our recommendations can be found on the next page.

[34.] https://assets.publishing.service.gov.uk/media/605b148ce90e0724c7d30c2b/north-sea-transition-deal_A_FINAL.pdf

[35.] https://www.offshoreenergypeopleandskills.co.uk/public/img/docs/NSTD-Integrated-People%20and-Skills-Strategy-FINAL.pdf

[36.] https://www.gov.uk/guidance/forestry-and-arboriculture-training-fund?utm_source=REA+Member+List+%E2%80%93+GDPR+compliant&utm_campaign=5499200983-EMAIL_CAMPAIGN_2020_06_01_12_52_COPY_01&utm_medium=email&utm_term=0_60f97b574c-5499200983-

Key Recommendations

1. All actors mentioned in this report should urgently look at participating in outreach programs to engage young people and promote career pathways that will help them enter the EV sector.
2. Government should make the necessary policy intervention to create local Centres of Excellence for Net Zero Skills to ensure that the UK is well equipped to deal with the transition to net zero, and in particular the electrification of road transport.
3. Government must examine the introduction of a UK-wide net-zero reskilling programme similar to the Welsh examples that empower those in unemployment and those below the median income to fulfil their potential and become 'a Net Zero Hero' – we will need many of these in future years.
4. The costs to private sector industry of EV skills training should be offset through access to appropriate Government grants to overcome the financial barriers to upskilling employees.
5. EV sector participants must maintain internal upskilling programmes that support continued career development and provide their employees with the relevant skills to ensure long-term career opportunities in the EV sector.
6. A review of the barriers to women taking up roles in the EV sector (currently 13% of technicians) is required to understand what could be done to attract more female workers to the sector.
7. Consideration of Diversity and Inclusion is needed to maximise the effectiveness of outreach, upskilling and reskilling programmes, and to ensure Centres of Excellence for Net Zero skills encourage a diverse range of applications.
8. Action is required to reduce the burden of complexity of applications and permits required for chargepoint installation to improve the efficiency of local authorities in fulfilling their administrative duties and accelerate deployment.
9. Local Authorities require adequate funding to successfully recruit and retain sufficient competent staff to fulfil their new obligations to develop and implement plans for charging infrastructure installation.

Official Supporters

CURZON CONSULTING

Curzon Consulting is an award-winning management consultancy that delivers tangible and enduring results for clients, through strategy, operational & digital transformation. We are honoured to have supported the REA in compiling this report and welcome its continued focus on the UK EV sector.

We have a 20-year track record of helping clients pivot from good strategy into great execution, delivering complex global business-critical transformation projects which create sustainable competitive advantage and measurable results.

Moreover, we have first-hand knowledge of the challenges organisations face to reaching their 2030 sustainability objectives and have gained vast capability supporting business leaders with complex, strategic roadmaps, this includes a major UK airport moving their entire fleet to electric vehicles (EV) or ultra-low emission vehicles (ULEV) by 2030.

Curzon is procurable through major procurement frameworks, including the Oxford Dynamic Purchasing System to deliver EV Consultancy Solutions.

We are part of Nextcontinent, a global network of independent firms, with access to 3,700+ management consultants across 38 countries as part of an international network. Our shared goal is to help clients achieve their objectives globally. Our combined international expertise and local knowledge enable us to deliver outcomes, nationally and globally.

Established in London in 2003 we support business leaders in organisations across multiple sectors including Financial Services, Infrastructure, Industry & Energy, Healthcare and Public Sector.

Net Zero EVOLUTION

Net Zero Evolution was born out of a desire to support the businesses around the world that have a responsibility like never before. We combine our recruitment & executive search experience, technical expertise and passion for decarbonisation to offer you an unrivalled and bespoke service ensuring you get the right solutions for your business at the right time.

Net Zero Heroes is our schools outreach programme, and we are on a mission to inspire the future generations into careers that support the Decarbonisation of Transport, Renewable Energy & Clean Infrastructure sectors. By working together to link the existing curriculum with the variety of roles available, we hope to have a positive impact on the diverse workforce that our sectors must have, to thrive in the years ahead.

Please contact us to become a Net Zero Hero.

GREENWORKX

Greenworkx is a climate edtech startup building the skilled trade workforce to deliver net-zero homes and roads.

They are doing this with an app getting people the skills for green jobs and matching them with employers.

Greenworkx is on a mission to get 10 million more people into green jobs in 10 years - building careers that are good for people and good for the planet.

Greenworkx have worked with the Installation Assurance Authority on the Home Decarbonisation Skills Competition and have helped hundreds of candidates qualify into the retrofit industry. More recently, they have been collaborating with City & Guilds to enable a number of candidates to qualify as Domestic Energy Assessors (Level 3) and partnering with boot camp training providers such as Growth Company and Generation UK.

Since starting out in 2022, Greenworkx has recruited over 7,000 people into its community, trained over 180 in Level 2 and 3 retrofit qualifications, and supported its first candidates into green careers with SME employers.

Founded by Mat Ilic and Richard Ng, two expert leaders with over 25 years experience across policy, social enterprise, technology and education, Greenworkx is a mission driven impact startup, backed by world leading investors including Mangrove Capital Partners, Ada Ventures, PropTech1 and Norrsken Accelerator, as well as angels including Euan Blair (Multiverse) and Fiona Howarth (Octopus EV).

TROJAN ENERGY

Trojan is focused on home charging for those without driveways. The processes and associated costs of delivering charging on the public highway are a barrier to solving this challenge for the 10 million UK drivers who park on the street.

As a rapidly growing UK-based manufacturer, the skills gap is also of key interest to us. The industry will require an influx of local talent in all disciplines so that the pace of delivery can be maintained.

REA

WWW.R-E-A.NET

Acknowledgements

With thanks to our sponsors Andrew Morgan, Natalia Sokolova, John Mason and Edward Hunt (Curzon Consulting) for research and sentiment analysis of CPO and DNO data. Matt Ilic (Greenworkx) for sharing research data and analysis on the number of electrical qualifications in the UK and for wider support in developing the report. Lindsay Warren (Net Zero Evolution & Net Zero Heroes) for sharing case studies and for wider support in developing the report. Simon Graham (Zero Carbon Academy) for support in developing the report. Mark Constable (Trojan Energy) for support in developing the report. Dr Benjamin Silverstone (Warwick University) for support in developing the report. Heather Foster (Midlands Connect) for insight in to Local Authority recruitment. Matthew Ling (Suffolk County Council) for insight in to wider Local Authority concerns. Richard Farren (Dynamon) for insights in to typical experience of recruitment for software roles. Kristian Day (Insight Energy) for insights in to the concerns for installers. Randal Smith (Former Urban Fox COO). Thank You also to the Charge Point Operators and Distribution Network Operators who took part in the surveys who wish to remain anonymous for commercial sensitivity purposes.

Images courtesy of REA member companies, www.gridserve.com, voltacompliance.com, vital-ev.co.uk, www.cmsltd.co.uk and EV Clicks - www.evclicks.co.uk

Find Out More and Support the Sector
For further information, please contact:

Matt Adams
Transport Policy Manager, REA
madams@r-e-a.net

Rollo Maschietto
Public Affairs Manager, REA
rmaschietto@r-e-a.net

If you're interested in REA membership, please contact:

Lindsay Barnett
Director of Membership, Marketing & Events, REA
lbarnett@r-e-a.net

The report is available on the REA website, here:

https://www.r-e-a.net/our-resources/

Follow us on Twitter:

@REAssociation

www.r-e-a.net
RECHARGE UK
REA, York House, 23 Kingsway
London WC2B 6UJ

Methodology

As part of this report research was conducted with CPOs and DNOs through an interview survey to gather comparable data, and through more expansive discussion to gather perspectives and sentiments from the participants.

In addition, we spoke with a number of operators across the sector and undertook an extensive peer review process to ensure that the report reflected the experiences shared and analysed in this report.

RECHARGE UK

REPRESENTING THE UK EV INFRASTRUCTURE INDUSTRY

REA