



NAVIGATING THE SKILLS SHORTAGE

Annual Rail Workforce Survey 2023

An in-depth look at the UK rail workforce.

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FOREWORD

I am pleased to present the findings of the NSAR Rail Workforce Survey 2023. NSAR has been carrying out this survey since 2016 to build the dataset that informs its Skills Intelligence Model – but this is the first time a report on the findings of the survey has been created since 2018.

With the Rail Workforce Survey data, NSAR can build the most complete and accurate representation of the UK rail workforce, enabling the industry, businesses and government to set direction and create informed skills strategies. The Rail Workforce Survey findings show us where skills shortages will be and where we will have to focus our training and recruitment efforts.

This report makes these important findings more accessible to the industry. I hope it proves useful to you and your organisation for industry benchmarking and planning for the future. By working together and setting informed training and recruitment strategies, we can address the skills shortages we are facing.

NSAR and I would like to thank all the organisations who have taken the time to provide us with workforce demographic information. This input is invaluable in helping us to help the industry understand where current and future workforce gaps are. Using this data, we are poised to support organisations in developing and embedding strategic workforce plans to ensure that a suitable pipeline of skilled employees is available.



Dyan Perry OBE
NSAR Chair

On behalf of NSAR and the Workforce Analytics team, it is fantastic to be able to present the findings of our Annual Rail Workforce Survey 2023. I hope they prove useful to your business and look forward to working with you as we collectively address skills shortages in the rail industry.



We will help our members to benchmark themselves against this data and I encourage you to get hold of the team.

Neil Robertson
NSAR Chief Executive

INTRODUCTION

Rail is a complex industry that plays a critical role in modern transportation systems and infrastructure, responsible for moving goods and people across vast distances safely and efficiently. However, the industry faces a significant challenge in developing and maintaining a skilled workforce that can keep pace with rapid technological changes, demographic shifts and evolving market demands. As the industry continues to expand, it must focus on attracting and retaining skilled workers who can adapt to these changing market conditions.

As your rail workforce and skills organisation, it is NSAR's role to analyse the current rail workforce and forecast future skills needs. To better understand the current state of the UK rail workforce, NSAR has been conducting an annual comprehensive survey of industry professionals – collecting data from the majority of rail organisations on demographics, job roles and work locations. Each year railway organisations across the industry contribute by submitting their workforce data, which is completely anonymised and GDPR compliant to enable us to analyse over 240,000 employee records. The survey helps NSAR build the most complete and accurate representation of the UK Rail workforce, enabling the industry and government to set direction. This analysis highlights the current profile of the workforce and, where relevant, compares this year's statistics to those gathered previously.

2023 has seen the highest level of data from employers since collection started in Autumn 2016. NSAR has collated the information received directly from employers, in addition to data from the Sentinel database and from the Office of Rail and Road to produce a workforce profile covering 243,387 individuals. Whilst this data set is not fully complete, it is estimated that it provides approximately 95% coverage across the sector including the supply chain. It is important to note that the workforce information relates to those employees working directly in the rail sector.

In this report, we present the results of our survey and highlight key workforce trends. We believe that it will serve as a useful resource for industry and government workforce planning and inform strategies for retaining and developing the next generation of rail professionals.

Note: The data presented in this report reflects the recent Government announcement to cancel HS2 Phase 2.

Executive summary

Rail is not keeping up with other sectors in improving productivity. To find out why this is, from a workforce and skills perspective, we need to investigate supply and demand for skills, education and training – and why we are not attracting people to work in rail.

The following conclusions can be drawn from the 2023 Rail Workforce Survey data:

- We have a workforce that is older than before (the average age of the workforce has risen from 43 years in 2018 to 45 years currently).
- We have fewer younger people (the proportion of people under the age of 30 has decreased from 16% in 2018 to 10% currently).
- We have a third of our workforce aged 50 years old or over.
- We are facing a critical loss of experience and knowledge in the next seven years (the number of people leaving through retirement and other forms of attrition could be 75,000 workers by 2030).
- We remain a male-dominated industry (the proportion of women in the industry is 16%).
- We remain a predominantly white workforce (87.5% compared to a national proportion of 81.7%).

This combination of higher average age, high predicted levels of people leaving the industry and low numbers of new, younger entrants highlights an issue with the attractiveness of the industry and indicates the likelihood of significant skills shortages in the coming years.

There are clear and key areas where consistent workforce deficits exist – which include Signalling & Telecoms, Systems Engineering and Electrification & Plant – where the gaps typically range between 1,000 and 2,000 people per annum. These deficits are creating premiums for skills – for Electrification 12% and for Signalling 10%, evidenced through increased salary demands.

Wage inflation is driving costs up, projects are being delayed or cancelled and training is being deferred or cancelled due to a shortage of trainers. 40% of all active trainers will reach retirement age by 2030, compounding the issue. Vacancies are proving harder to fill and stronger market competition for talent means that the rail industry is facing declining productivity levels due to a lack of suitably skilled people in the right place, at the right time

Analysis undertaken by NSAR has revealed that missed opportunities and a traditional approach to workforce reform could be creating £800m of additional people costs in the industry, as well as adding an additional 7.5% people costs to each project each year if not addressed.

The challenges facing rail are not unique. The implications of a labour shortage, increasing technological advancements, pressures on public funding and a low industry perception amongst school and college leavers are all felt by other sectors too. We must look to the efforts of other sectors when making plans to build our workforce, to gather ideas and learn lessons.

The benefits of addressing skills shortages in rail are immense. There is the opportunity to generate between £128 and £181 million for the UK economy between now and 2028. And, using the assumption that 20% of roles are filled by economically inactive people from a disadvantaged background, the rail sector could produce £412 million in social value by 2028.

Recommendations

The skills situation in the rail industry tells us we need to act in a planned manner – not rely on individual and reactive responses. It also tells us we need to do more collaboratively and with greater collective determination.

The recommendations follow the scientific approach to the talent pipeline by creating a methodology, using data more effectively, building in digital enhancements, generating a new entrants programme and improving the training profile. We believe this will support the industry in reaching its goals.

1. Adopt a culture of positive, proactive interventions that are systematic, integrated and aligned with need. Develop and adopt the Scientific Approach to the Talent Pipeline (SATP).
2. Adopt a more scientific and technology-focused approach to training that encourages a more digitally focused workforce. Develop a methodology and a programme that manages the introduction of AI, machine learning and new technology in line with workforce demographics.
3. Collecting and holding data needs to be seen as independent and impartial and allow for future-proofing (National Grid and the NHS are doing this well). Data can drive decision-making focussed on skills development to meet the requirements of the sector.
4. Coordinate new entrant initiatives into a single campaign, including (but not limited to):
 - Routes into Rail
 - Supplier Apprenticeship Challenge
 - Apprenticeship intake through procurement (at least 75% new, rather than upskilling)
 - T Levels adoption
 - Work placements and work experience
 - Graduates
 - Degree apprenticeships
5. The training market needs improvement and must change to suit a higher level of demand. NSAR has launched two new services to respond to these challenges – Skills Match and flexi-job apprenticeships.

Key skills shortages

Figure 1 shows the distribution of the rail workforce by region, with the highest proportion in highly populated areas of London and South East.

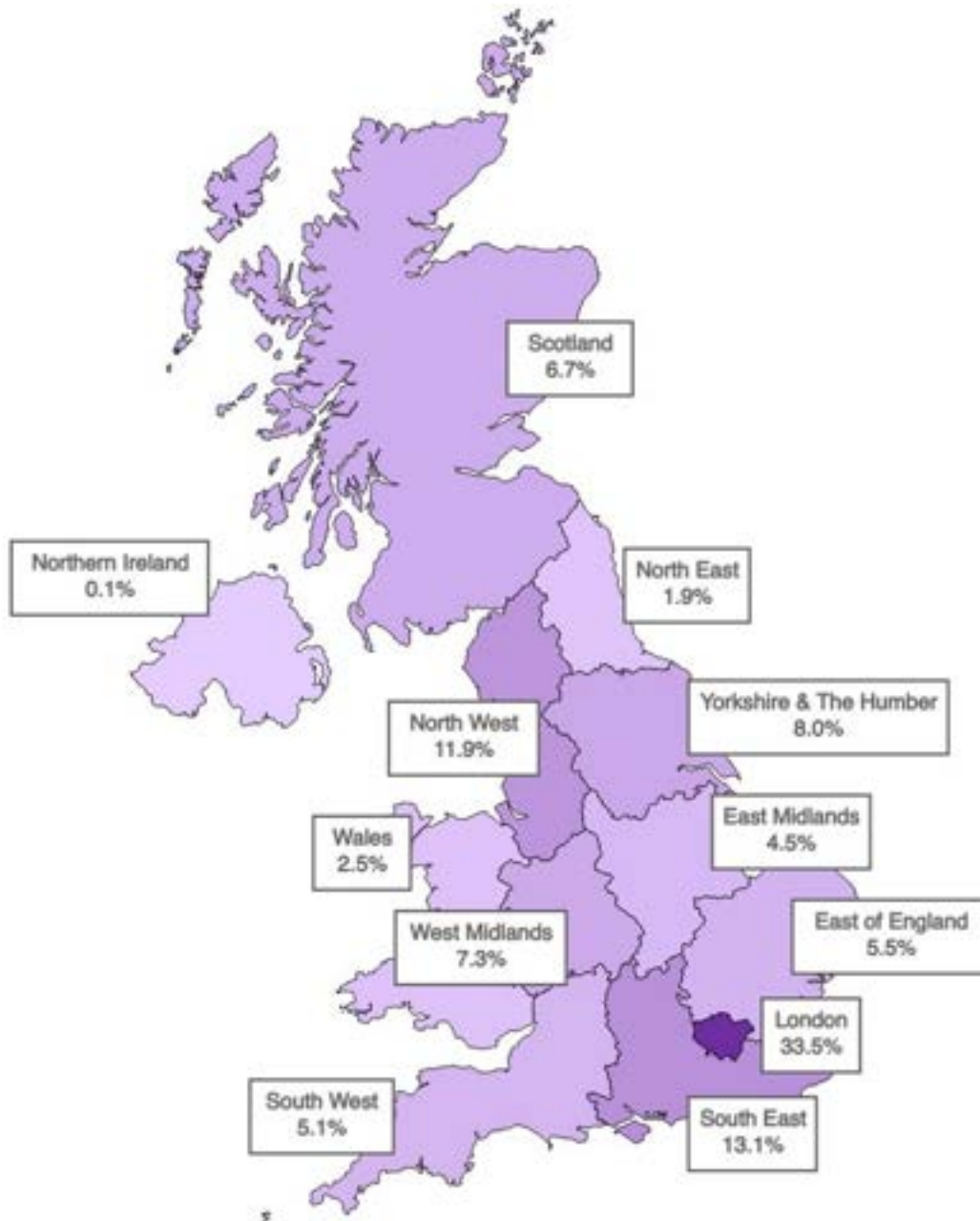


Figure 1: Distribution of the rail workforce by region

The purpose of this report is to explore the rail workforce by age, role and region, identify shortages and provide details on the types of training that may be needed. This type of role and skills profiling forms a baseline for recruitment needs, informing the sector where to direct its energies, depending on the scale of the demand and when specific skill sets will be required.

There are a number of key roles where the average age is higher than 50. Planning for the succession of suitably skilled and qualified people in these roles is essential to ensure the railway continues to operate efficiently.



Figure 2: Roles where average age is higher than 50

Of the occupations within the industry where the age profile is significantly higher; train drivers have 40.3% of the workforce over 50 years old and signallers have 43.6% of the workforce over 50 years old. To replace these would alone necessitate 1,000 new drivers and 250 new signallers per annum.

It is also useful to understand how localised shortages are. Many of these are highlighted in the Midlands, the North West, Yorkshire and the North East. These locations track the schemes already underway and include the Transpennine Route Upgrade, the Integrated Rail Plan and digital schemes on the East Coast. These projects all contribute to high levels of demand for skills, which historically have been needed in London and the South East.

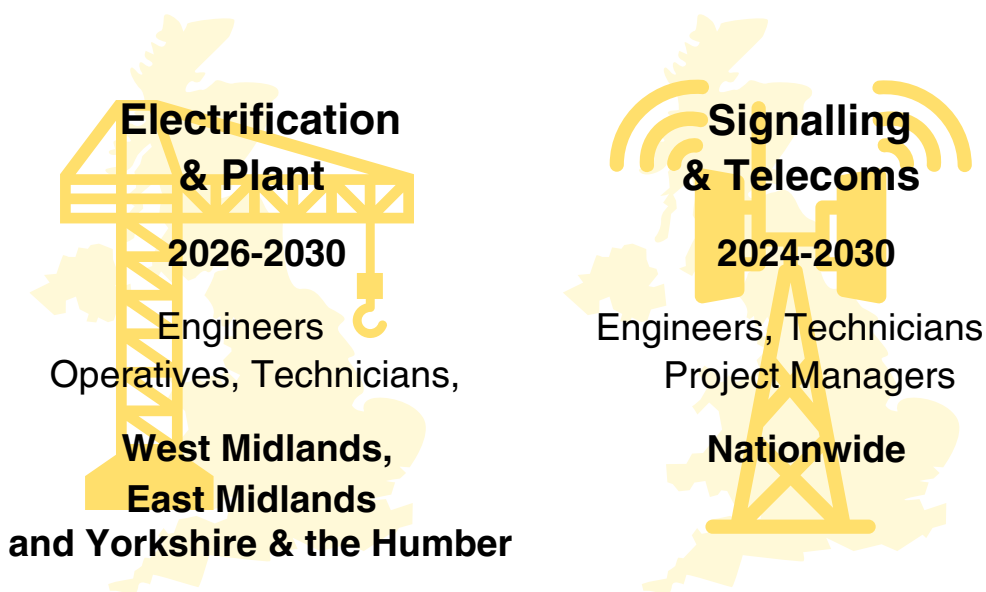


Figure 3: Key demand disciplines by region

The labour market currently shows unemployment at its lowest level (3.7%) since 1974, so resourcing will continue to be a challenge, although there are different parts of the labour market that remain untapped. In some cases, there is also the opportunity to recruit from other sectors, such as Oil and Gas, or recruit those who are leaving the armed forces, but this will require a programme of induction for reskilling.

Recommendation

Analysis predicts significant skills shortages in various roles and regions in the coming years. The rail industry needs to embed a consistent approach to strategic workforce planning to inform recruitment and training strategies and ensure it has the capacity to operate efficiently.

Find your solution

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Change in demand by role

Using NSAR’s Skills Intelligence Model (SIM), it is possible to forecast which roles will be needed, when they will be needed and where.

Where an increase in demand is forecast, as illustrated in **Figure 4**, it is necessary to make sure that there is a plan to resource the demand. This should be associated with increases in training. Apprenticeships provide a great opportunity for the sector to attract new skills or provide upskilling prospects for those already working in the sector.

Job role	Level	Current employees	2027 demand	% increase in demand
Project Management Supervisor	Skill Level 3	281	325	13.5%
Technician	Skill Level 3	1268	1466	13.5%
Assistant Project Manager	Skill Level 4	155	179	13.4%
Supervisor	Skill Level 3	186	214	13.1%
Project Manager	Skill Level 5	619	712	13.1%
Engineer	Skill Level 6	3535	4049	12.7%
Project Control Manager	Skill Level 5	508	581	12.6%

Figure 4: Roles with largest change in demand

Some roles will require different skill sets and there is a need to grow roles that have not historically been prevalent across the industry. The table in **Figure 4** shows key roles with increasing demand by 2027, illustrating a key demand for project-type roles. The nature of investment in projects across the industry will influence the shape and rate of change in demand for these roles. To ensure these skills are readily available, the industry needs to prepare to train or recruit from different talent pools than would have otherwise been traditionally used.



Skills shortages

The sector needs to plan how it is going to address skills shortages across a number of different asset types. Failure to do so will result in continued wage inflation.

As the number of expected retirees and the levels of additional demand increase, nearly 12,000 people will be needed by 2028. There will be a consistent and high demand for skills in the next five years, especially in Signalling & Telecoms, Civils & Structures and Traction & Rolling Stock. This is illustrated in **Figure 5** below.

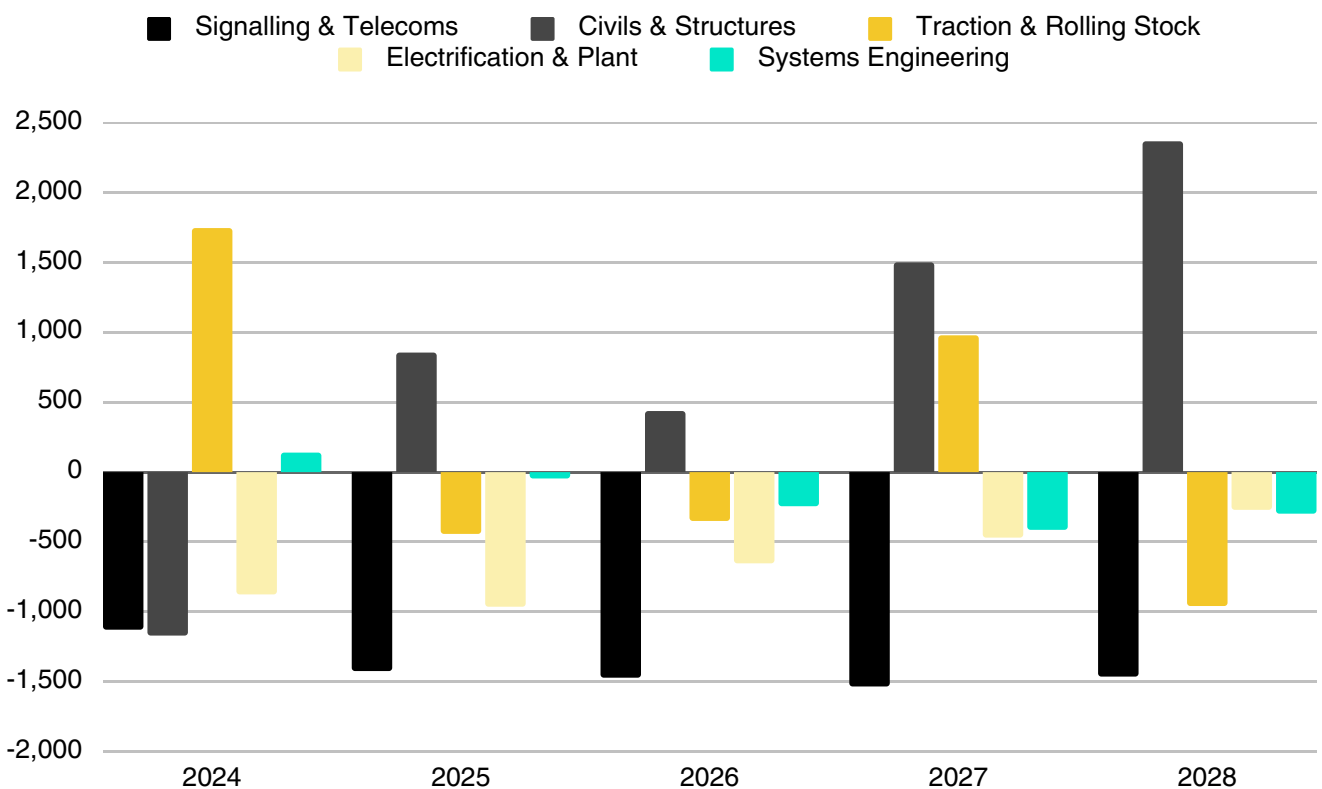


Figure 5: Key shortages gaps by asset type

The amount of CAPEX spend being put into the industry for renewals and enhancements will fluctuate between now and 2050 to £6b-£11.1b per annum. This CAPEX spend is drawn from Network Rail renewals and enhancements, TfL spend and other CAPEX projects showing publicly available spend values. At a time when rail accounts for a significant proportion of public sector infrastructure spend, the need to ensure there is a workforce to deliver those benefits is critical as the cost of having skills shortages can reach up to 7.5% per annum of additional spend required.

Strategic workforce planning can be used effectively to scope the deployment of new skills in anticipation of those who may retire. Using a role industry average salary, it is possible to calculate the cost of lost skills through retirement if skill succession planning is not sufficient. Looking at the numbers forecast to retire between 2024 to 2028, **Figure 6** illustrates a cost of approximately £750 million to replace these employees.

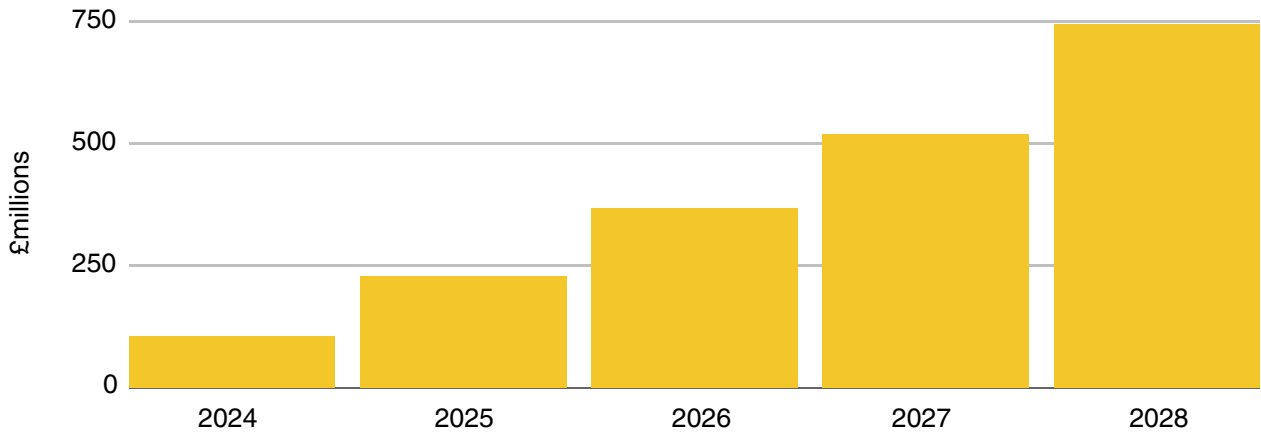


Figure 6: Cost of not replacing retirees, 2024-2028

Roles with significant numbers of retirees are shown in **Figure 7**. Technician¹ and Train Driver combined will require about 6,000 skilled individuals to ensure there is no disruption to the service delivery or the maintenance schedule.

For train drivers in particular, efforts over the last three years have yielded some positive outcomes. As a result of the widescale adoption of the Train Driver Apprenticeship, the average age has decreased from 48 years to 46 years, the gender proportion has increased from 8.5% to 14% women and the ethnicity proportion of white drivers has reduced from 90% to 86% for those aged under 40.

Job role	Skill Level	2024-28 retirees
Technician	Skill Level 3	3,200
Train Driver	Skill Level 3	2,600
Customer Service Assistant	Skill Level 2	2,100
Engineer	Skill Level 6	1,100
Operations Manager	Skill Level 5	700
Operative	Skill Level 2	700
Supervisor	Skill Level 3	700
Project Manager	Skill Level 5	600
Maintenance Technician	Skill Level 3	500
Signaller	Skill Level 3	500

Figure 7: Roles with significant numbers of expected retirees

¹ Types of technician include: maintenance, data, installer, signalling, telecomms and multi-skilled.

As the sector develops and new technologies are deployed, there will be an increased demand for digital skills. Furthermore, sustainability is increasing in importance as the sector strives to meet the Government’s decarbonisation targets. This means there will be an increased demand for roles and skills that are ‘greener’ in nature, specifically, Electrical Engineers, High-Voltage Engineers and Systems Engineers.

To maintain current service levels, appropriate training opportunities need to be in place. The rail sector has an ageing profile of trainers (as shown in **Figure 8**), meaning achieving future demand levels could continue to be a challenge. The wider use of apprenticeships would be seen as a partial solution, as there are elements of both on-the-job and off-the-job learning required.

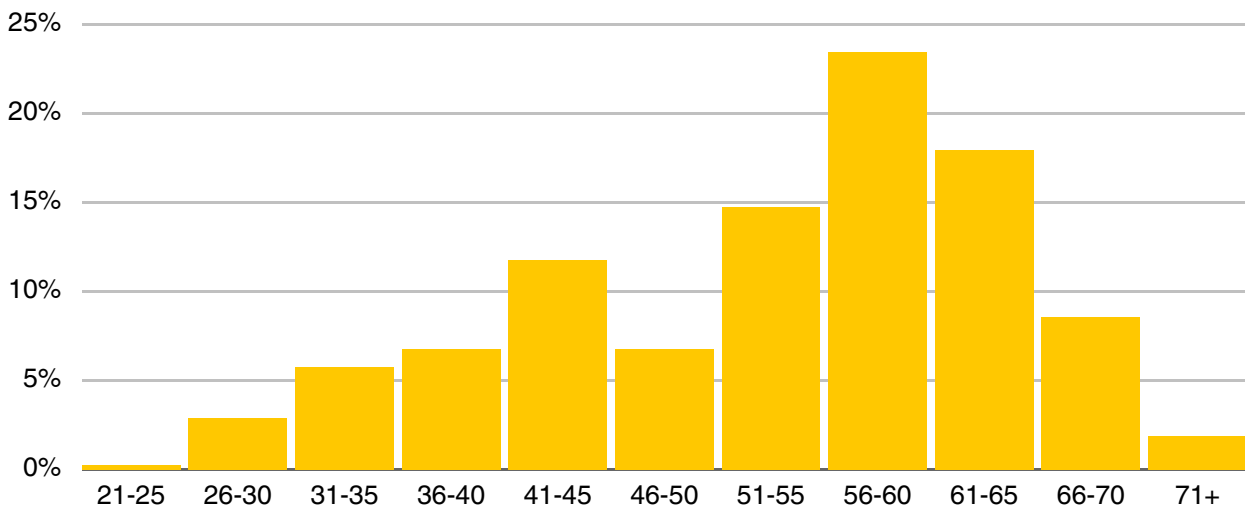


Figure 8: Trainers by age category

Recommendation

The challenge facing the industry is how to secure current and relevant training that can be significantly upscaled. There needs to be a new way of training – one with digitised delivery and assessments, to open up a bigger pipeline of training opportunities and capabilities. Online training can reduce time to competence, compared to traditional approaches. It is important, however, to make sure training remains of a high quality to allow capacity and capability to be aligned.

This training should not be delivered in isolation – it should form part of a wider industry plan providing opportunities for both new recruits to the sector and for those already in the sector to access upskilling. The broader use of apprenticeships needs to be a core component of this training plan at all levels and made available to a wider range of current rail employees.

Economic and social value opportunities

New job opportunities allow for the generation of both economic and social value. Looking at the size of the anticipated skills gaps from the analysis in this report, there are significant social value opportunities in both new projects and from replacing retirees. Targeting different pools of talent will help the sector diversify. As with entry to any new role, training requirements are implied

Analysis of the current labour statistics (April 2023) estimates a tight market with employment at 75.8% of 16-64 working age group. The unemployment rate is 3.8% (those people actively looking and available to start work). There are currently 21.1% of people defined as ‘economically inactive’, representing a significant pool of potential employees², however, they would likely require either a strong network of support or incentives to consider joining the workforce.

We have estimated that the additional economic value generated from just 10% of the roles going to those who are currently economically inactive is £20 million. Upping this value to an ambitious figure of 20%, would generate an economic value of over £40 million. Evidence shows that HS2 is regularly achieving 10%, so 20% is a stretch target.

There is the opportunity to generate a range of between £128 and £181 million cumulatively for the UK economy from filling the gaps in the rail sector between now and 2028. The height of demand is in 2028 as illustrated in **Figures 9 and 10**, with most value created in roles at Skill Level 6, which implies the sector should be targeting graduates. The realisation of this value will require improving promotion, attraction and retention of employees as well as making a commitment to training and upskilling existing employees. Workforce planning can support in the achievement of this level of social value.

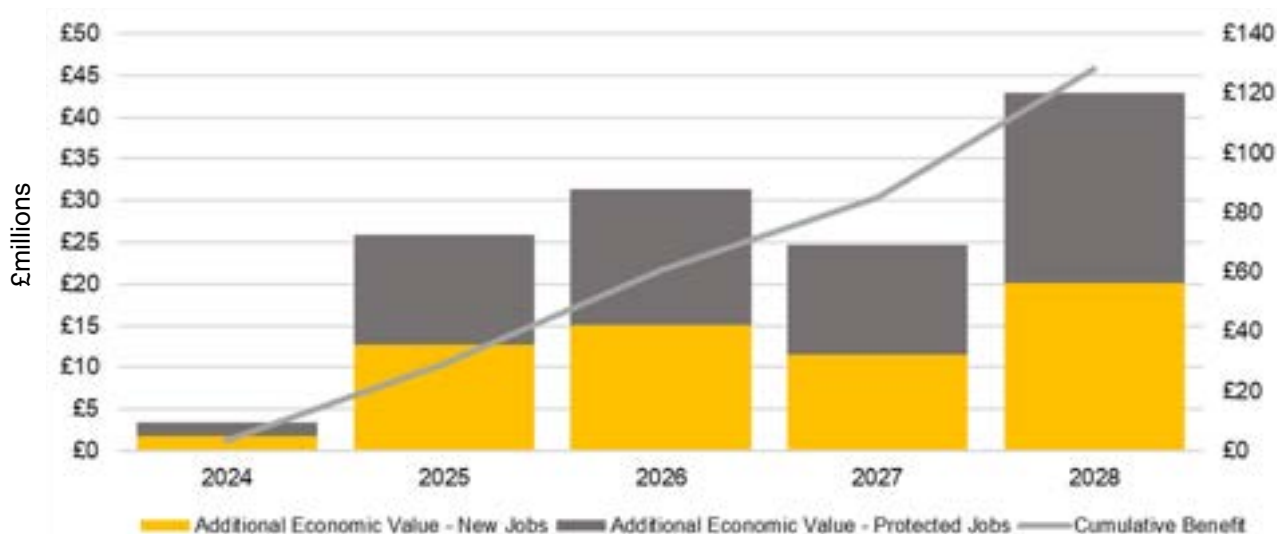


Figure 9: Economic value potential, assuming 10% of roles are filled by those currently economically inactive.

² The definition of ‘economically inactive’ means people (aged 16-64) that are not involved in the labour market – they are neither working nor actively seeking employment. Economic inactivity includes students, early retirees and the long-term sick.

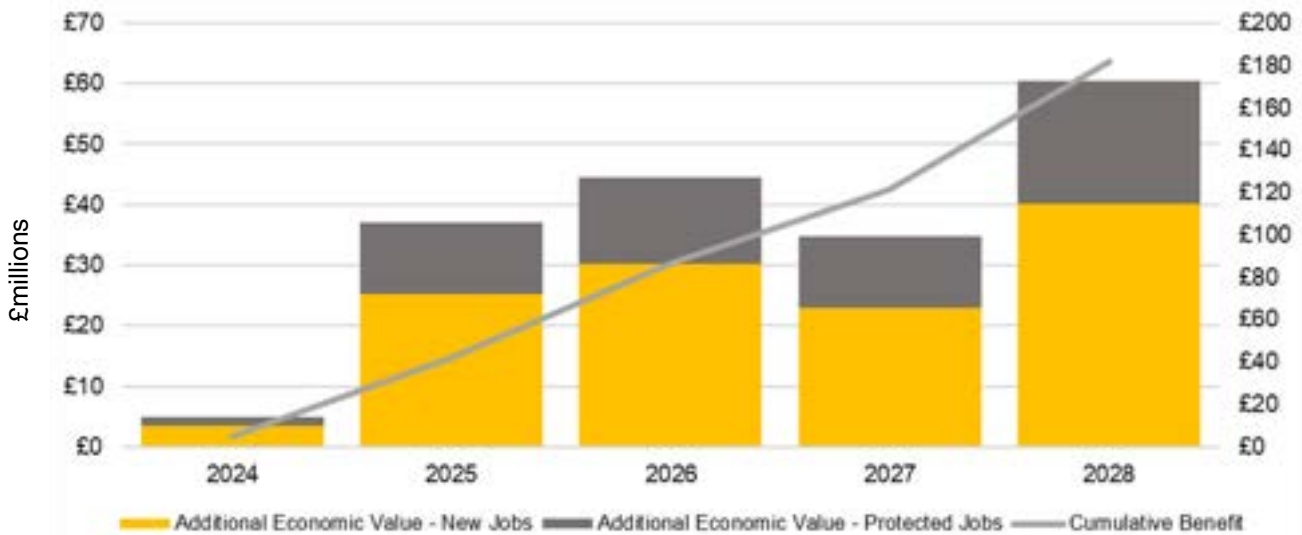


Figure 10: Economic value potential, assuming 20% of roles are filled by those currently economically inactive.

In addition, there is the opportunity to generate social value from employing those currently not contributing to the UK economy³. Using the assumption that 20% of roles filled by economically inactive people went to employees from a disadvantaged background, the rail sector could produce £412 million in social value by 2028, as shown in **Figure 11**.

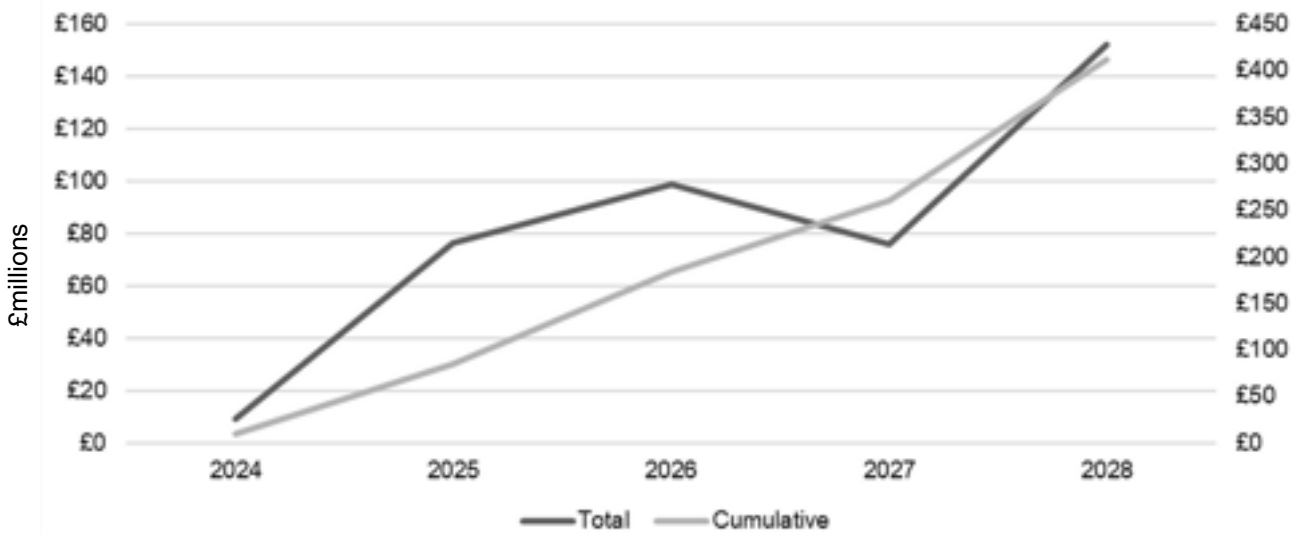


Figure 11: Social value potential, assuming 20% of roles go to those from disadvantaged backgrounds

Recommendation

Efforts to employ economically inactive people to fill skills shortages and replace retirees in the rail industry must be continued to capitalise on the chance to generate economic and social value. This also presents an opportunity to further increase the diversity of the rail workforce.

³ Social value refers to the benefits that a job provides to society beyond its financial value.

Current workforce demographics

From the 2023 NSAR Rail Workforce Survey data collection of employee information, this report highlights the current demographics and reviews trends. This analysis will inform the sector about the impact of actions taken to date and indicate where further improvements can be made.

Creating a diverse and inclusive workforce is paramount to ensuring equity of opportunity for current and future employees. Broadening the range of diverse skill sets is crucial if the rail sector is to be attractive to different types of people and competitive with other industries. The sector has been taking a number of different steps and implementing a range of initiatives to broaden the demographic profile of the workforce. However, it is clear that challenges remain and there is more to be done.

Gender



Figure 12: Gender proportions of the 2023 workforce

From this data set, the proportion of women in the rail workforce stands at 16.3% as illustrated in **Figure 12**. This is a marked increase from the 2022 figure of 14.6%.

This figure has steadily increased since the inception of the survey and, despite a dip in 2022, the numbers are showing movement in a positive upward direction, as shown in Figure 13. Since 2016, the proportion of women in rail has increased by over 5 percentage points. However, there is more to do and continued implementation of strategies such as job-shares, increased opportunities for part-time working and increased role flexibility are evidence that the sector is attempting to adapt and attract from a different resource pool.



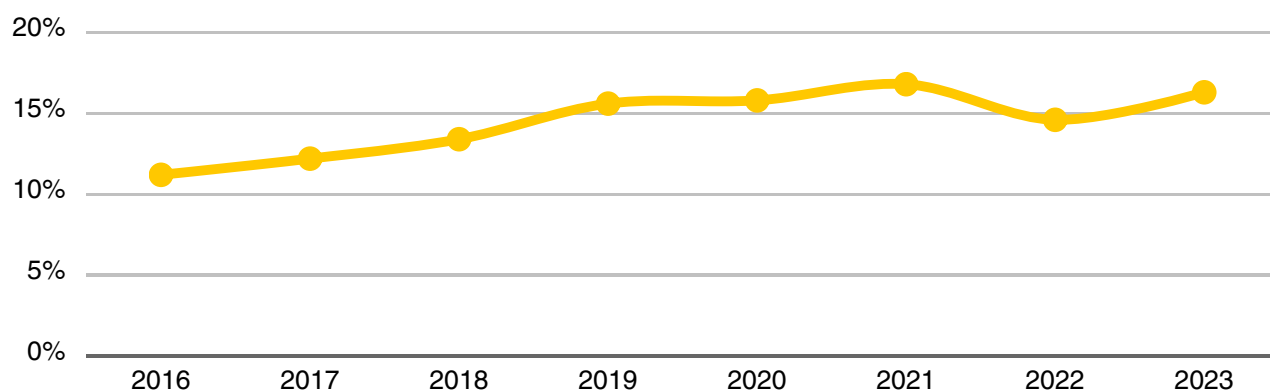


Figure 13: Change over time of proportion of women in rail workforce

Recommendation

Actions such as increased flexible working opportunities, targeting different markets and introducing gender balanced interview panels seem to be making an impact on increasing the number of women in rail. These actions need to be continued and extended to further increase the proportion of women in rail.

Ethnicity

Ethnicity data has only been collected since 2019 and remains a challenge to obtain. This is either because employees choose not to disclose, or employers do not collect this data. From the current data collection exercise, ethnicity data was provided for just under 30% of the total workforce population. This accounts for close to 73,000 employees. Of these employees, 12.4% are from ethnic minority backgrounds, as shown in **Figure 14**. This compares to a UK national average of 18.3%. The most common group from those of an ethnic minority background is Asian/Asian British at 5%.

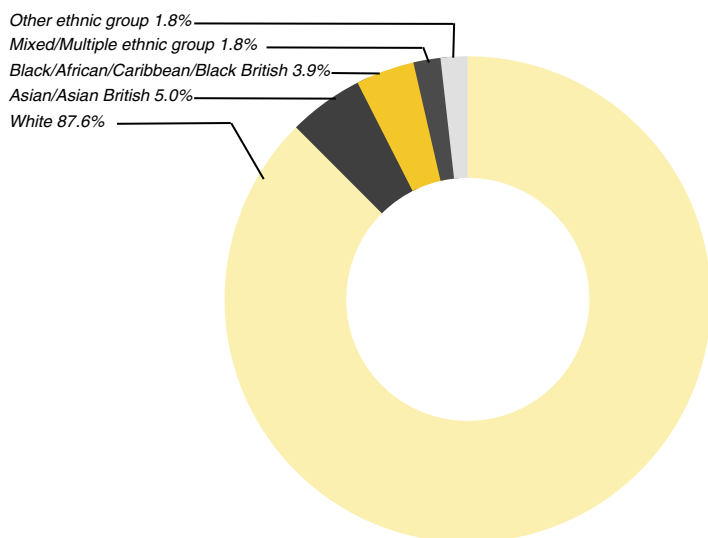


Figure 14: Ethnicity of 2023 workforce

Commenting on the trend over time is challenging as the quantity of data has not increased significantly since this field was included in the survey. The sector has been slow to collect and record ethnicity data. Without more data, it is not possible to make any comment on whether sector interventions to improve ethnic diversity have had any major impact.

Those who did not disclose their ethnicity had a higher average age (45.3 years) than those who did disclose their ethnicity – minority groups such as Asian/Asian British and Mixed/Multiple ethnic groups have much lower average ages

(39.8 and 37.9 years respectively) than those who did not disclose. Ethnicity response rate for apprentices was 36.6%, which is markedly higher than the wider industry.

Equally, the average age of those who did not respond with their gender (46.9 years old) is also much higher than that of those who did respond (44.6 years old for men and 42.1 years old for women). This possibly suggests that the younger contingent of the workforce are more willing to disclose demographic information because they have a heightened awareness of EDI, having grown up with it being more prominent.

Recommendation

The rail industry needs to better represent the communities it serves.

The industry must encourage employees to declare their ethnicity, thus enabling fuller data returns. In time, this will allow for better tracking of specific ethnic diversity interventions.

Age

The age profile of the workforce illustrates a concerning trend. The proportion of younger employees is at its lowest since data collection began. There are a number of potential reasons for this – including a lack of opportunities for young people (highlighting the need for increased apprenticeship opportunities), the sector is not attractive to younger people or young people are not being retained. Compounding the issue is the tendency to replace retirees with older workers, due to the experience required by many roles in the industry.

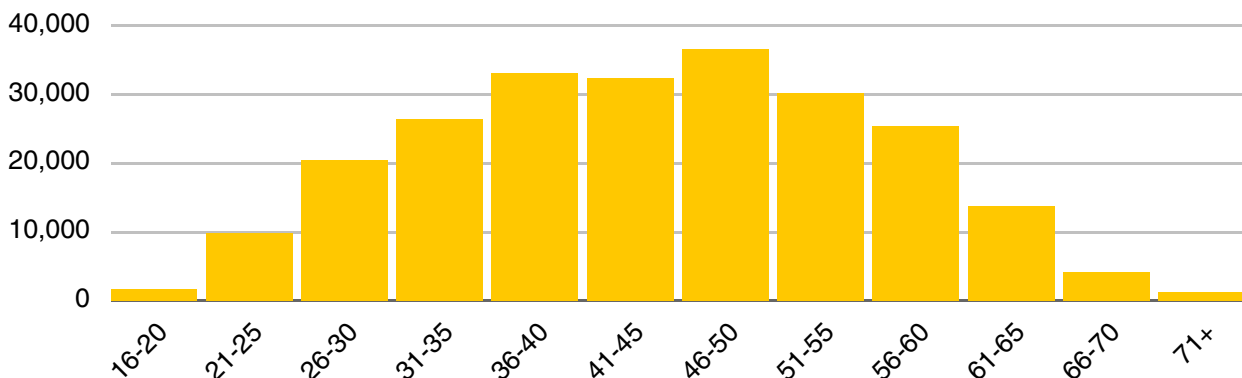


Figure 15: Age profile of current workforce

Focus on early attraction is developing but needs to gather momentum to halt the downward trend of the proportion of employees aged 30 and under. This figure is currently 13.5%, as illustrated in **Figure 16**, a reduction of nearly 50% in seven years.

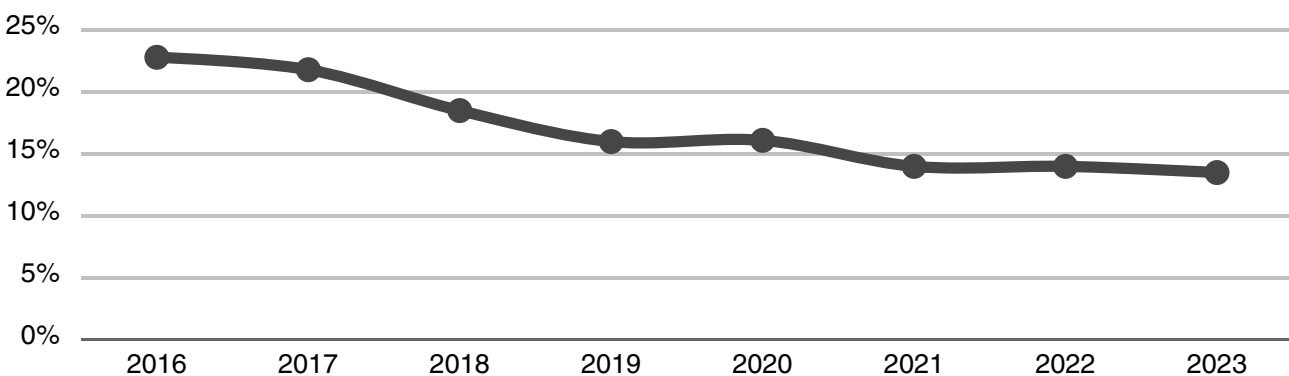


Figure 16: Trend of workforce proportion aged 30 and under

At the other end of the scale, the proportion of over 50-year-olds continues to rise, to 33% in 2023, see **Figure 17** below. This is an increase of nearly 30% over seven years.

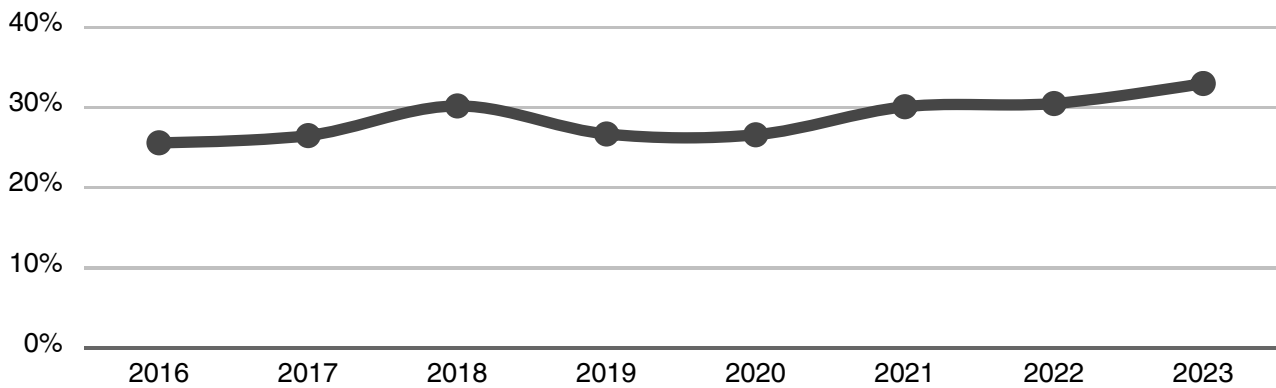


Figure 17: Trend of workforce aged over 50

The proportion of older employees in the industry is important. As the number of retirees increases there is a real risk of further gaps and shortages – at a time when investment (and, therefore, demand for workers) is increasing.

Using a projected retirement age of 65 years, by the end of 2030, it is expected that over 35,000 (illustrated in **Figure 18**), rail industry employees will have reached this age and would therefore be considered retirement risks. There are some roles that present a higher retirement risk than others, due to the higher average age of employees. These include roles such as Signallers, Drivers, Technicians and Engineers.

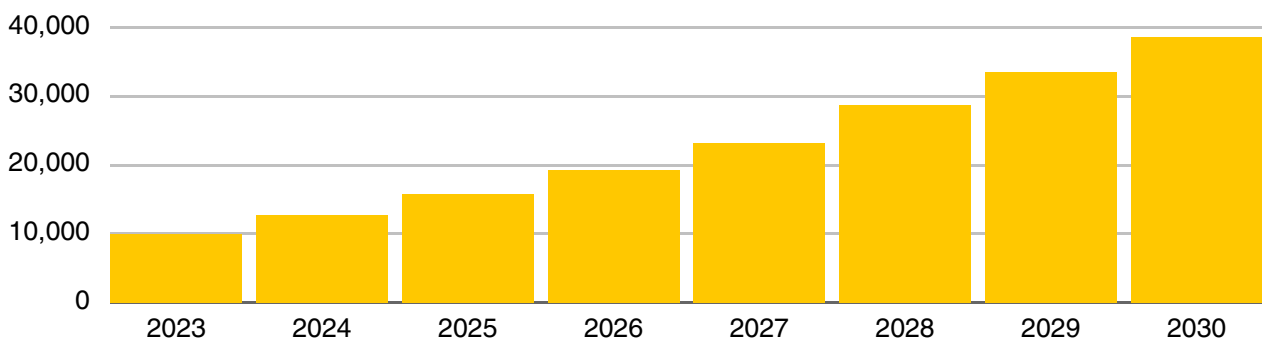


Figure 18: Rail industry cumulative retirees, 2023-2030



Using three different scenarios for retirement – age 62 years (the current average retirement age for rail employees), 65 years and 67 years – the data indicates up to 30% of the current workforce could be lost and would require replacing, as shown in **Figure 19**.

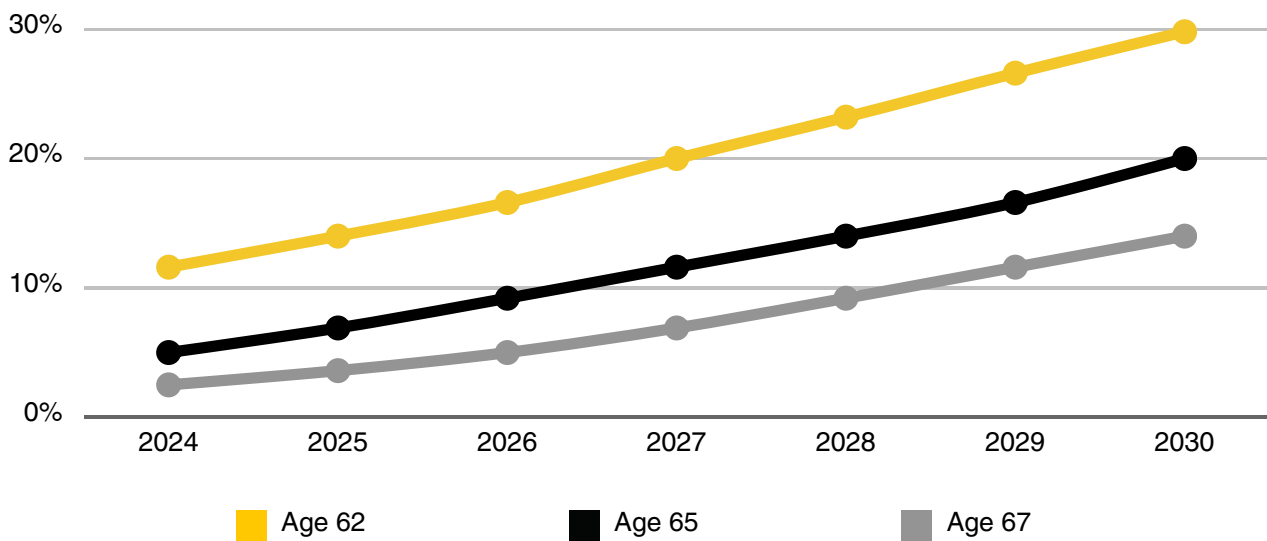


Figure 19: Scenario of retirement proportions by age of retirement

The impact of the widening gap between the two age categories at opposite ends of the spectrum is the opportunity for progression. Without sufficient planning, mapping a career pathway will be challenging, especially for leaders to be confident that there will be suitably skilled and qualified individuals to fill the void left by those who retire. From those aged over 50, 46% are at skill level 3. With suitable planning, succession for these roles will be straightforward. More of a challenge will be making sure there are appropriately skilled individuals who are able to take on higher skilled and leadership roles (Skill Levels 5, 6 and 7), as over a quarter (26.8%) of people in these roles are expected to retire in the next 10 years.

There is a need to consider how the sector can harness the skills of these individuals and make sure there is a good knowledge transfer process in place for those retiring. Equally, using some of this knowledge to support apprentices will enable skills information to be passed on. Even with changing technology, older employees hold a wealth of skills highly valuable to the industry. These include the roles associated with diesel fleets where life extensions will be in place until alternative methods of fuelling trains are fully deployed for achieving the decarbonisation targets.

Recommendation

The industry must consider how to harness the skills of older and retiring individuals and set up knowledge transfer, especially to apprentices. This is particularly important considering the general lack of trainers and assessors.

Recommendation

Rail needs to attract a more diverse group of people to address demographic gaps in gender, ethnicity and age. It can do this by breaking down barriers to entry, such as providing role models from different communities.

Regional overview of the workforce

It is useful to understand the regional variations that exist. There is often lower investment in skills in regions that have experienced little infrastructure investment. As current rail employees retire, especially in regions receiving increased investment, this will become an issue.

The proportions of the workforce in each region over the age of 50 years are important to note. To maintain the workforce, the percentage of workers in this age category is the baseline of replacement demand, before additional demand linked to increased levels of investment is considered.

From an age demographic perspective for each region, the South West has the highest proportion of employees aged 50 years and over, while Wales has the lowest. Northern Ireland has the highest proportion of employees aged under 30 years, London has the lowest. The table in Figure 20 shows these metrics for each region.

Region	% Under 30	% 50 and over
East Midlands	13.4%	37.0%
East of England	10.0%	32.5%
London	7.9%	35.7%
North East	13.1%	35.0%
North West	10.0%	34.0%
Northern Ireland	18.7%	23.7%
Scotland	10.8%	37.1%
South East	10.4%	33.4%
South West	10.9%	37.7%
Wales	9.8%	23.5%
West Midlands	11.0%	36.2%
Yorkshire & The Humber	11.9%	34.3%

Figure 20: Key age metrics by region

Figure 21 and **Figure 22** illustrate the regional distribution of the investment pipeline profile for the period 2024 to 2028.

The profile of investment across the sector between 2024-2028, shows almost 40% of investment will take place in London and the South East. Considering these two regions have over one-third of the workforce aged 50 and over, planning for the replacement of those who retire ought to be well underway and evidenced through increased levels of training. There is no evidence yet that this is happening.

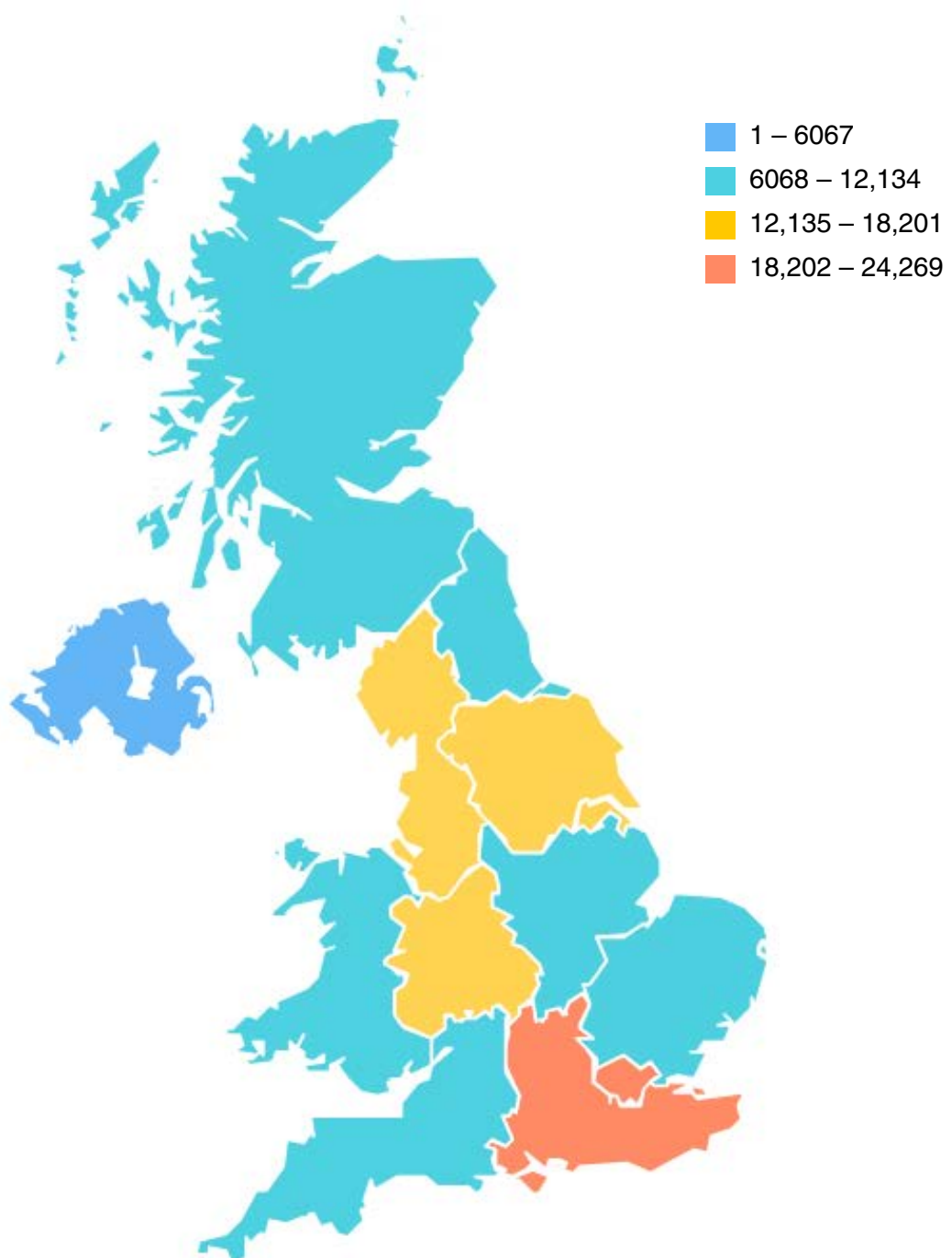


Figure 21: Investment pipeline 2024-2028

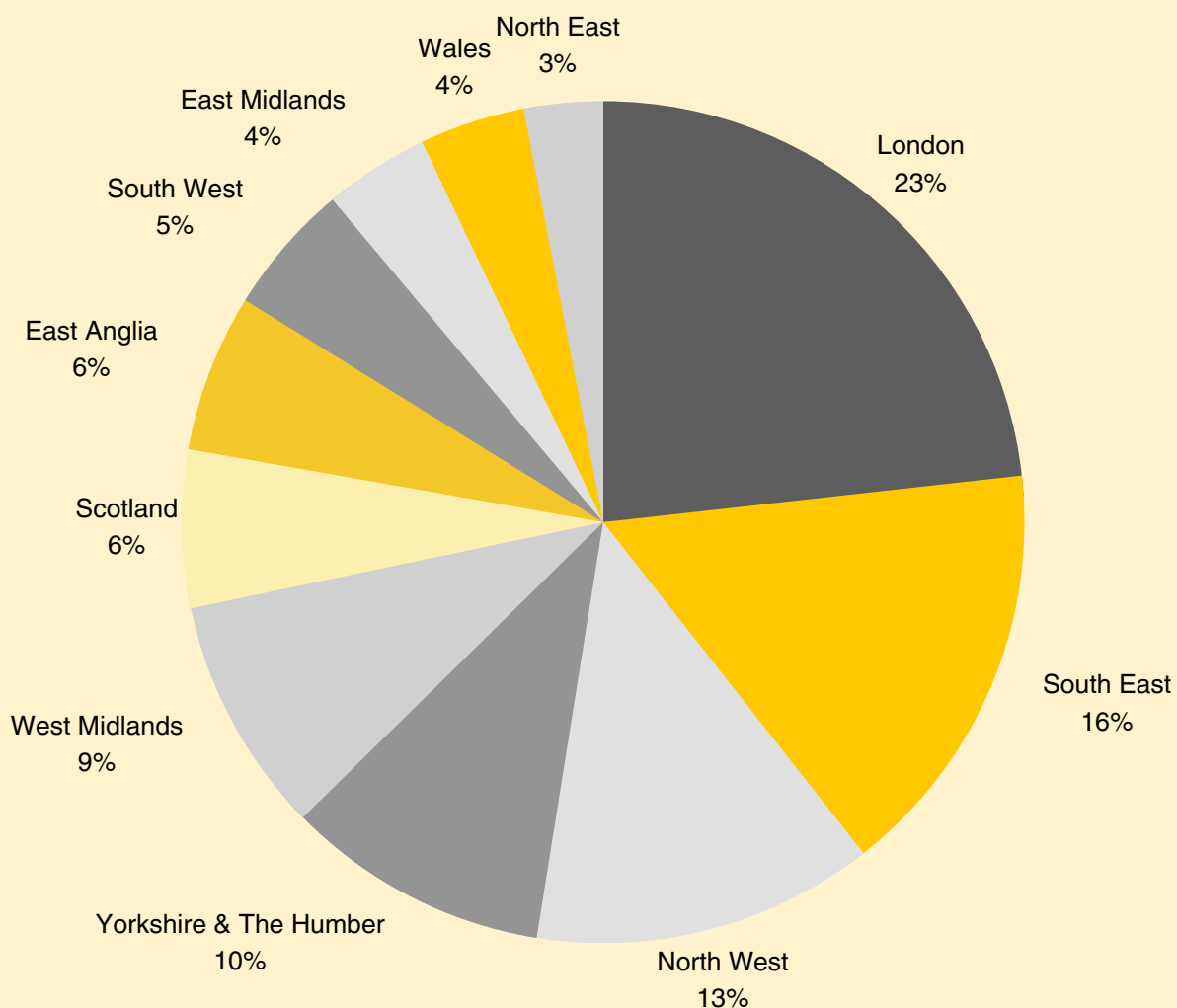


Figure 22: Distribution of investment profile 2024-2028

Recommendation

The combination of an increased investment pipeline and a high average age in some regions could exacerbate skills shortages. Strategic workforce planning to fill these shortages must be prioritised. This planning is particularly important for regions that have historically had low levels of investment.

Apprentices

Apprentice data from the 2023 survey covers around 4,000 rail industry employees, representing approximately 1.65% of the total workforce. This figure is well below the industry target of 2.5%. It includes new entrants, multi-year apprentices and those who are being upskilled – meaning the number of new entrants is just a proportion of the 1.65%. To meet industry targets and replacement demand generated by retirements, organisations must make efforts to take on more apprentices.

The gender balance is similar to that of the whole industry, with 16.5% of apprentices being women as shown in **Figure 23**.



Figure 23: Gender proportions of apprentices

The average age of an apprentice is 27.7 years old, which aligns to the younger age profile you would typically expect from an apprentice. The age distribution reflects this – 63% of rail apprentices are aged 30 and under, with more than a third in the 21-25-year-old category. However, with apprentices present in the workforce through to the 61-65 years old, and with 10% in the 31-35 years old category, and close to 5% being in the 41-45 years old group, the data shows the viability of apprenticeships as not just an introduction to the industry, but a real opportunity to upskill or reskill.

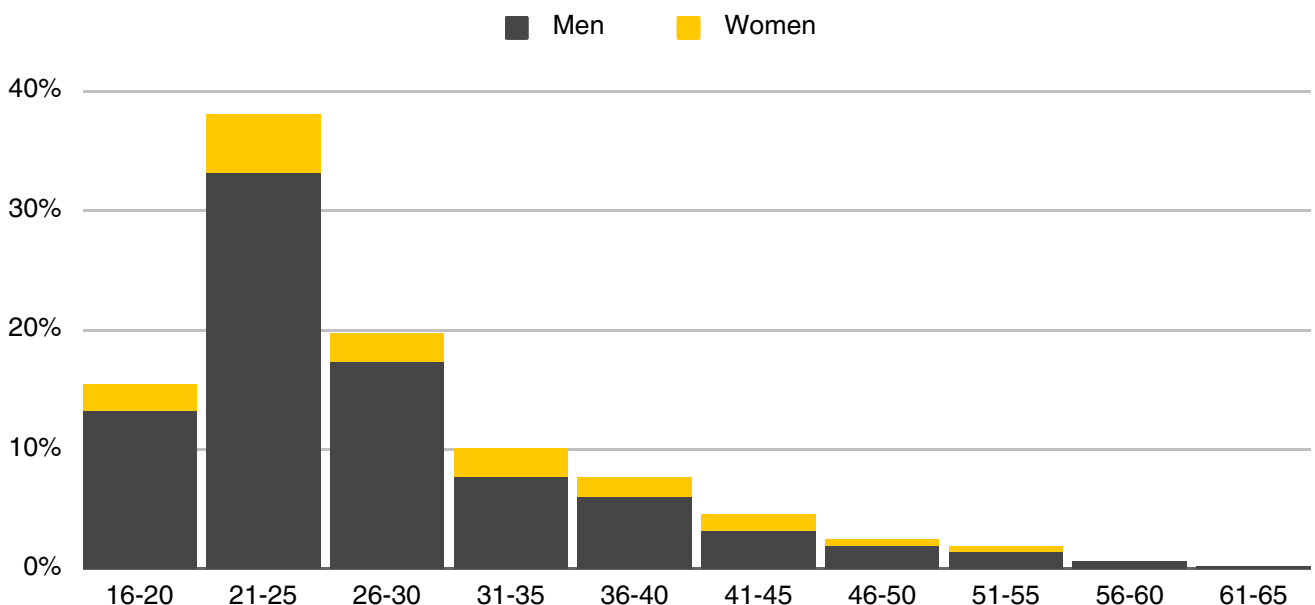


Figure 24: Age profile of apprentices

The apprentice workforce is slightly more diverse than what is seen in the workforce as a whole, with the proportion of white employees being about 2.5% lower.

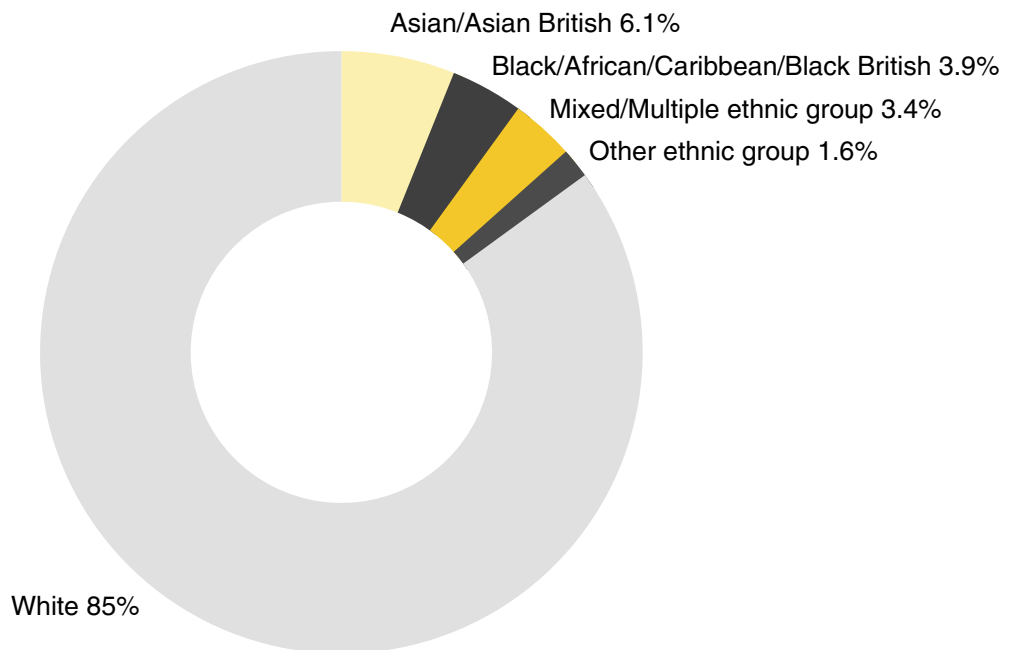


Figure 25: Ethnicity proportions of apprentices

From the data available about types of apprenticeships, common areas include Drivers, Engineering, Signalling and Customer Service.

Apprenticeships are showing downward trends in both start rates and participation rates, particularly in engineering and manufacturing courses. The demography of apprenticeships is also changing. Higher-level apprenticeships are increasing their percentage share of the overall market, and intermediate-level apprenticeships (level 2) have fallen substantially, with 31% being at the intermediate level in 2019/20, down from 65% in 2013/14.

Levels of apprenticeship take-up, completions and levels of apprenticeship levy underspend all suggest that rail has yet to fully embrace apprenticeships as a method of workforce planning and a way to increase the diversity within rail.

As noted earlier, the use of apprenticeships for Train Drivers has been steadily increasing over recent years and in many respects is an industry success story. There is a strong investment case for doubling the number of apprenticeships in the supply chain and wider training increases to reduce wage inflation, increase productivity and improve safety. NSAR’s Skills Match aims to do exactly that.

Recommendation

Apprenticeships are a great way to bring new talent into the rail industry and facilitate knowledge transfer. The industry needs to train more apprentices to reach industry targets and create a talent pipeline.

Spotlight on women in the workforce

The rail industry has focused much effort into increasing gender diversity in rail, as evidenced earlier in the report in the increased proportion of women in the workforce since 2018.

It is easier to target recruitment efforts when demographics are known. From the workforce survey data, we have separated out the gender proportions in different asset types and skill levels across the rail workforce to help employers with their recruitment strategies.

Asset type by gender proportions

Each job role fits within an asset type. **Figure 26** shows the distribution of the rail workforce across the various asset types.

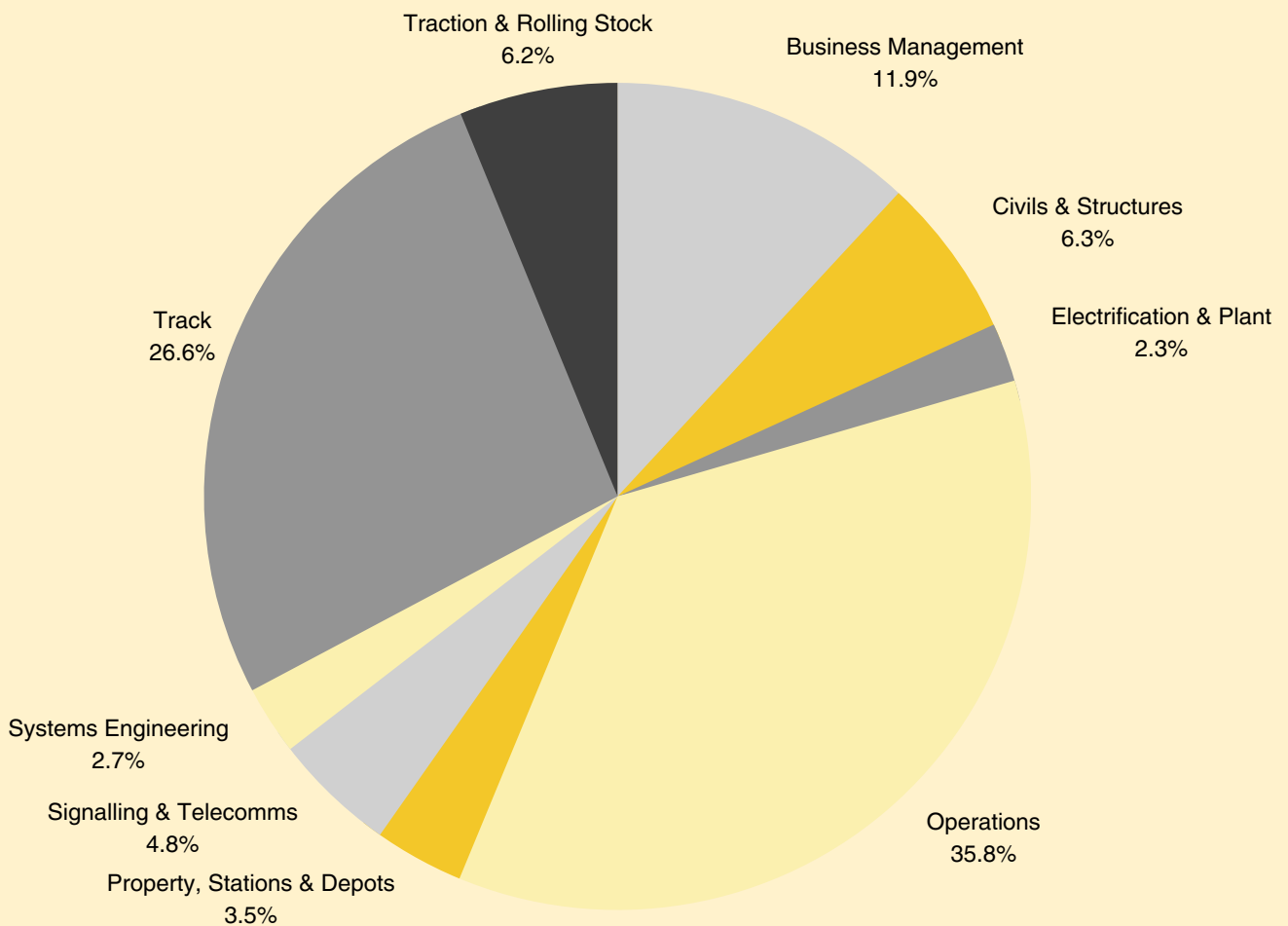


Figure 26: Distribution of the rail workforce across asset types

Figure 27 compares asset type to gender. It shows women have the highest profile in the asset type of Business Management, which includes the corporate support functions such as HR, finance and administrative roles. Operations and Property, Stations & Depots have the next highest proportions. These asset types have a higher propensity of customer-facing roles.

At the other end of the scale, Electrification & Plant and Civils & Structures have less than 10% of the employees categorised as women. These figures indicate that these asset types would be ideal places to start increasing the number of women in the workforce, especially because they have a high people need compared to other asset types.

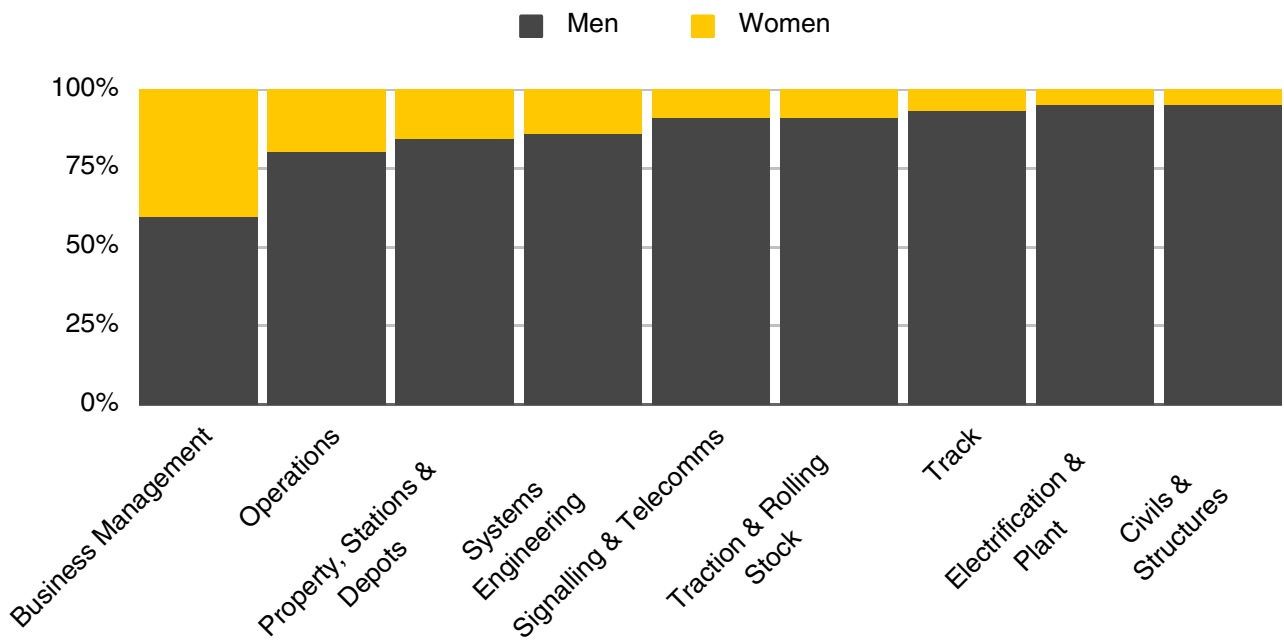


Figure 27: Asset type by gender proportions

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Women in leadership

Sector leaders are aware of the need to increase the proportion of women in senior roles as currently just 8.5% of women are in Skill Level 6 (senior) or skill level 7 (executive) roles, compared to 11% of men. It is useful to understand which areas and roles women are excelling in. Business Management has the highest proportion of women and the highest proportion in senior roles. The Operations asset type, which includes back office and support roles like HR and payroll, has the second-highest proportion of women but the lowest numbers in senior roles.

Asset type	Proportion of women	Proportion of women in senior roles	Proportion of women in executive roles
Business Management	40.7%	4.90%	0.72%
Civils & Structures	5.3%	1.13%	0.08%
Electrification & Plant	5.4%	0.91%	0.05%
Operations	20.3%	0.19%	0.05%
Property, Stations & Depots	16.0%	0.19%	0.06%
Signalling & Telecomms	9.3%	1.78%	0.13%
Systems Engineering	14.4%	4.92%	0.30%
Track	7.3%	0.59%	0.05%
Traction & Rolling Stock	9.3%	1.89%	0.13%

Figure 28: Proportions of high-skilled roles held by women in each asset type

The industry must continue to provide opportunities to increase the number of women in the workforce as one route to enhancing diversity (which has also been proven to improve productivity). Workforce planning can be used as a vehicle to do so.



CONCLUSION

The rail sector needs to take action to address skills and labour shortages, attract a more diverse workforce and ensure it has access to the future skills required to deliver projects and maintain an efficient rail system.

The industry has begun responding to this challenge. Our collective efforts are starting to yield benefits but current investment is about half of what is required – and indeed expected – and the industry should make further commitments. The recommendations outlined in this report represent the key starting points.

Levels of apprenticeship take-up, completions and apprenticeship levy underspend all suggest that rail has yet to fully embrace apprenticeships as a method of workforce planning and a way to increase diversity within rail. It is much cheaper to train new people than to pay inflated wages to attract existing talent. Apprenticeship programmes supply the industry with an ongoing cohort of qualified talent and are a useful way of teaching the practical, hands-on skills the modern railway needs. Efforts must be made to train more apprentices in rail.

Furthermore, rail needs to create a culture and reputation for outstanding training opportunities. Offering high-quality training to new employees and upskilling existing employees will help the industry attract and retain workers. Getting our training supply side fit for purpose is critical and will require investment across the industry. The rewards are significant.

A concerted and collaborative effort can enact real change across the sector as it aims to attract and retain a more diverse set of skills. This in turn will reverse the trends of wage inflation and provide further opportunities for increasing productivity.

BE PART OF THE NEXT SURVEY

Participation in the workforce survey is crucial for the provision of up-to-date and relevant industry overviews. If you would like more information on how your organisation compares to other industry organisations, or how you might improve your workforce's skills to meet future needs, please [contact us](#).

<https://www.nsar.co.uk/projects/annual-workforce-survey/>

simsurvey@nsar.co.uk

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NSAR is not-for-profit membership organisation and expert skills and workforce consultancy. We are trusted by government, industry and training providers to deliver services and projects within rail and other sectors.

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