

Nuclear Apprenticeship Survey 2019



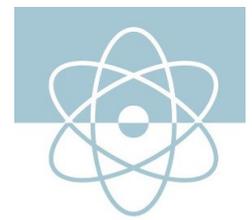
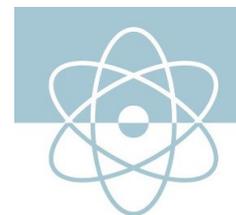


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Foreword

Jennie Chapman, EDF Energy

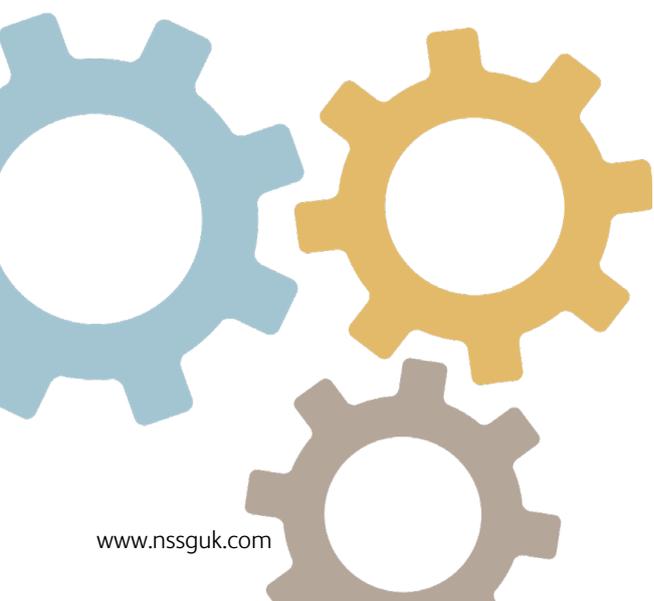
Nuclear Skills Strategy Group Theme lead on Apprenticeships



In the nuclear sector, we are proud of our apprentice workforce, and this Survey Report shows the breadth and importance of apprentices across a range of organisations. This importance is reflected in the Nuclear Skills Strategy Group’s incorporation of Local Apprenticeships as one of its five key Themes in its Strategic Plan, fully integrated with the Nuclear Sector Deal. The work that we present here is the first time that we have undertaken an analysis specifically of apprenticeships in nuclear. The results provide us with insights on the use of apprenticeships across the sector and show the impact and use of the Apprenticeship Levy.

Almost all nuclear organisations responding to our survey do use the apprenticeship route, and it is clear that they have applied it in different ways as reforms have been introduced in recent years. As a sector, we were early developers and adopters of new Apprenticeship Standards in England, and their use continues to grow in nuclear-specific and generic occupations alike. Although we have generally welcomed these approaches, many would like to go further, and we have made recommendations in this report regarding public policy. The £24 million of Apprenticeship Levy reported here is just part of what the nuclear sector pays annually, but our analysis shows that only 61 % of it is currently being used in the sector. Our recommendations on flexibility of the Levy would help to ensure that it is spent in the sector for the purpose it is intended: developing apprentices to grow our skilled workforce.

We are already collaborating on improving apprenticeships in our sector, through the Nuclear Skills Strategy Group, the Standards Advisory Group, and other relevant industry groups. We will continue to drive this with sector employers, government and other public partners to build a nuclear workforce fit for the challenges of the future.





Introduction

Donna Connor, Sellafield Ltd
*Chair of the Nuclear Standards
Advisory Group*



I am delighted to present this Apprenticeship Survey Report, which has been planned and produced with significant input from members of the Standards Advisory Group. The survey shows that apprenticeships remain vitally important to the nuclear sector. We have always used this route to ensure that we have a pipeline of skilled new entrants, and as we see in this report, they are increasingly being used to provide our existing staff with the knowledge, skills and behaviours to undertake new roles.

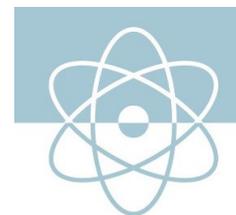
This is reflected in the levels of apprenticeships. We were among the first sectors to develop a degree apprenticeship – one that now has over 200 participants. We are in the process of developing new Standards at Levels 6, 7 and 8, so that we can apply the apprenticeship route to strategically important higher level occupations as well as the traditional roles at Levels 2 to 5.

It is especially gratifying to see the range – our nuclear-specific apprenticeships are well used, but the survey results also show that there are at least 32 occupations where Apprenticeship Standards and Frameworks are being used in the sector, most of which are developing transferable skills applicable across other sectors as well as nuclear.

This is only the first phase of research into apprenticeships in our sector, and we will take the lessons learned from this exercise into planning further work. We will make sure that analysis reaches as far as possible across our sector, including the supply chain, and we will explore how data can be integrated with other sources such as the Nuclear Workforce Assessment.

The Standards Advisory Group will take these results into our planning for the standards and qualifications that the sector needs. We regularly review employers' needs alongside Labour Market Intelligence and new policy developments, and where appropriate we commission the development of new Apprenticeship Standards and Frameworks.

We are especially keen to make sure that approved Standards are turned into reality, so that employers have a range of good-quality provision available to meet their needs.



Executive Summary

This Nuclear Sector Apprenticeship Survey was conducted from April to September 2019 with 18 employers, estimated to represent more than half of the workforce of the UK nuclear sector. Respondents represented all of the major parts of the sector, civil and defence, including the supply chain.

The apprenticeship route remains vitally important to the nuclear sector as a means to developing a pipeline of suitably qualified and experienced personnel for its current and future workforce. Analysis in this report covers 2,078 current apprentices, of whom 72% are new entrants to the sector and 28% are existing staff re-skilling or upskilling to fulfil new roles. Regarding the age range, 62% are in the traditional 16-24 year old category. The figures are dominated by apprentices in England, with very low numbers in Scotland and none in Wales.

Apprenticeship completion and retention rates in the sector are very high. When asked for the approximate completion rate in general for their apprentice recruits, employers reported a rate of 96% (weighted based on the number of apprentices employed). This figure is much higher than the official average rate seen across all apprenticeships in England, which stands at 67%. When similarly asked what proportion of their apprentices they expected to retain at the end of their apprenticeship period, the weighted figure from employers was even higher, at 99%.

A wide range of Apprenticeship Standards and Frameworks is used in the sector, of which the survey was able to gather information on 32. Of those selected, over half of the total number of apprentices reported are accounted for by the top two named Standards: Maintenance & Operations Engineering Technician L3, and Engineering Operative L2. These Standards are found in a range of sectors, as are popular responses such as Project Management/Controls and Business Administration occupations, demonstrating the applicability of more generic “skills for nuclear” rather than just nuclear-specific skills in the sector.

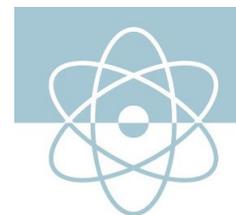
This report shows that the sector’s current collaborative efforts to improve gender diversity are still required. Only 17% of apprentices reported are female, although that figure rises to 25% when the Royal Navy is excluded. Female apprentices tend to be found either at lower levels (especially in Business functions), or at higher levels in Scientific and Management roles, and still relatively few are to be found at Levels 3 and 4 where many of the traditionally male-dominated technician roles are often found.

Between them, respondents pay £24.25 million annually in Apprenticeship Levy, of which they spend only £14.69 million (61%) on their apprentices. The Levy’s introduction has influenced their behaviour, with a significant number of them having increased their number of apprentices and taken the opportunity to upskill or re-skill their existing workforce.

Data on apprenticeships across the sector would benefit from a deeper representation of supply chain companies, many of which are smaller and may have different approaches to apprenticeships than the Site Licensed Companies and larger contractors. Efforts were made to encourage responses from a wide cross-section for this survey, and this will be further developed in future surveys.

The results of the survey will be used by the Nuclear Skills Strategy Group, the Standards Advisory Group, related working groups and partner organisations to develop collaborative actions to address issues raised, and to improve the contribution of apprenticeships to growing a skilled nuclear workforce for the UK.





Summary of Recommendations



Flexibility of Apprenticeship Levy

Allow further flexibility in use of the Levy to increase diversity and improve career progression



Funding for higher apprenticeship levels

Continue to fund apprenticeships at all levels, up to and including Level 8



Flexibility for off-the-job training

Allow flexibility in the proportion of apprentices' time required to be spent off-the-job



Collaborative apprenticeships

Government and industry should collaborate on funding the costs of setting up and managing collaborative apprenticeship schemes



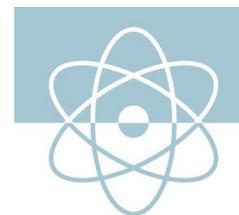
Funding bands

Reverse the general trend of reducing apprenticeship funding through funding band reviews



Transfer of Levy

Increase further the amount that employers can transfer to the Levy accounts of other organisations, to allow more flexibility in dealing with supply chain organisations and Apprenticeship Training Agencies (ATA)



Methodology

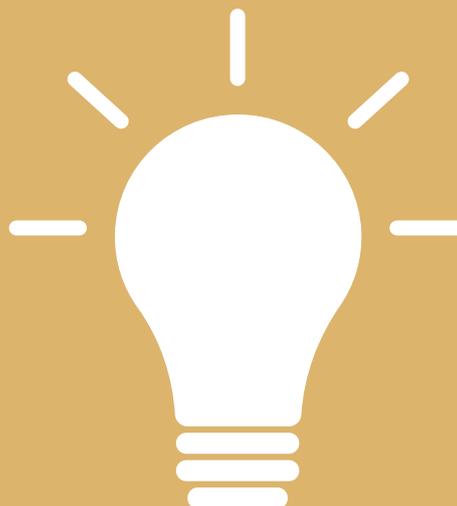
Civil and defence nuclear employer organisations were invited to respond to an online survey, designed by the Nuclear Standards Advisory Group, between April and September 2019. Companies were contacted directly, and invited through the Nuclear Industry Association, the Nuclear Institute, the National Skills Academy Nuclear, the ECITB Nuclear Forum, and related partners. The survey was publicised through the Nuclear Skills Strategy Group's social media channels, and industry-wide e-shots.

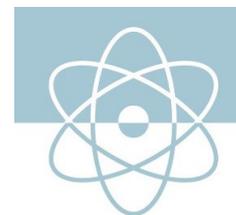
Since some respondents cover defence and civil activities, the two subsectors remain combined in this report. Eighteen complete responses were obtained from the following organisations.

It is estimated that the respondents represent in excess of 50 % of the UK nuclear workforce.

AWE plc
BAM Nuttall
CGN UK
Doosan Babcock Ltd
DSRL
EDF Generation
Hinkley Point C (part of EDF Energy)
Jacobs
Low Level Waste Repository
Magnox Ltd
National Nuclear Laboratory
Nuclear Decommissioning Authority
Office For Nuclear Regulation

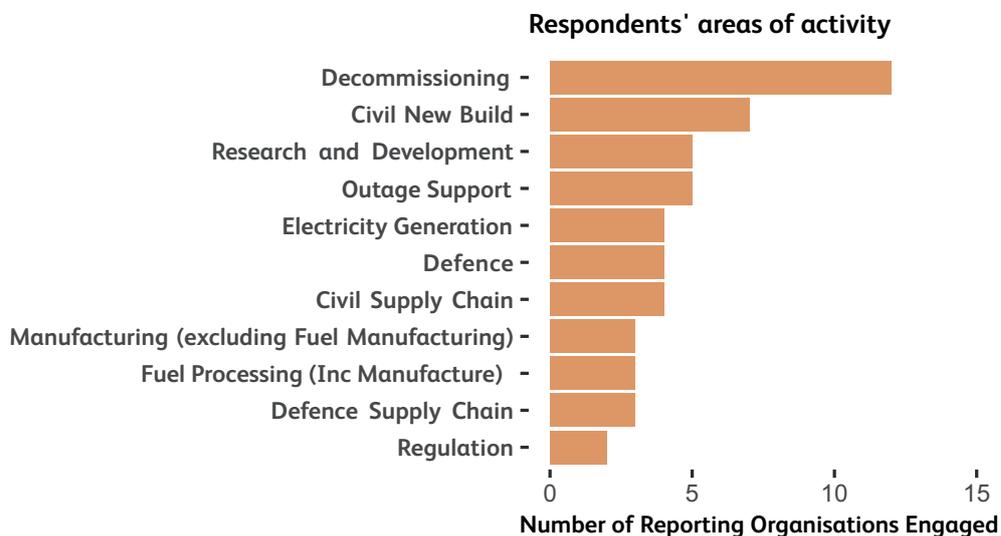
Rolls-Royce Submarines
Royal Navy
Sellafield Ltd
Westinghouse Springfields Fuels Ltd
wood.





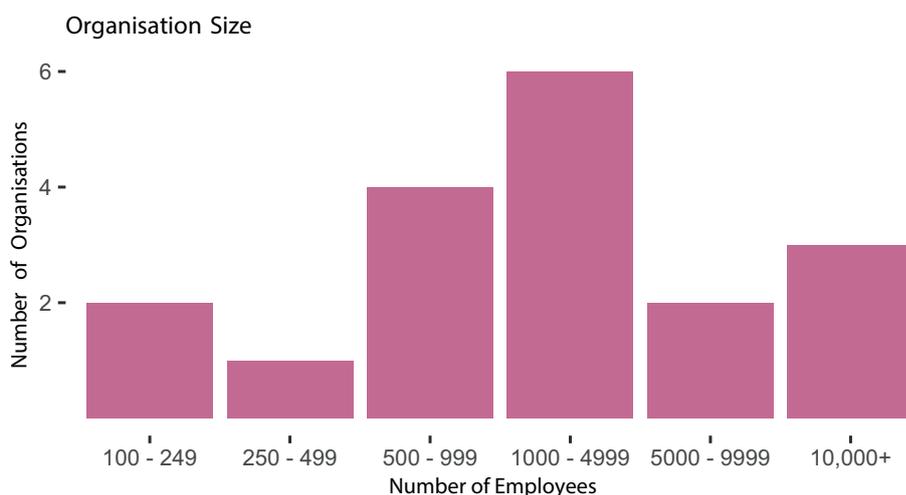
Findings and discussion

Respondent organisations’ size and areas of business activity



The UK’s nuclear sector is diverse, and the responses to the survey represented all of the major categories used in the Nuclear Workforce Assessment¹. Since organisations sometimes cover more than one activity, the numbers in the graph above do not tally to the total number of survey respondents.

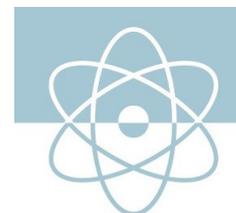
Data on apprenticeships across the sector would benefit from a deeper representation of supply chain companies, many of which are smaller and may have different approaches to apprenticeships than the Site Licensed Companies and larger contractors. Efforts were made to encourage responses from a wide cross-section for this survey, and this will be further developed in future surveys.



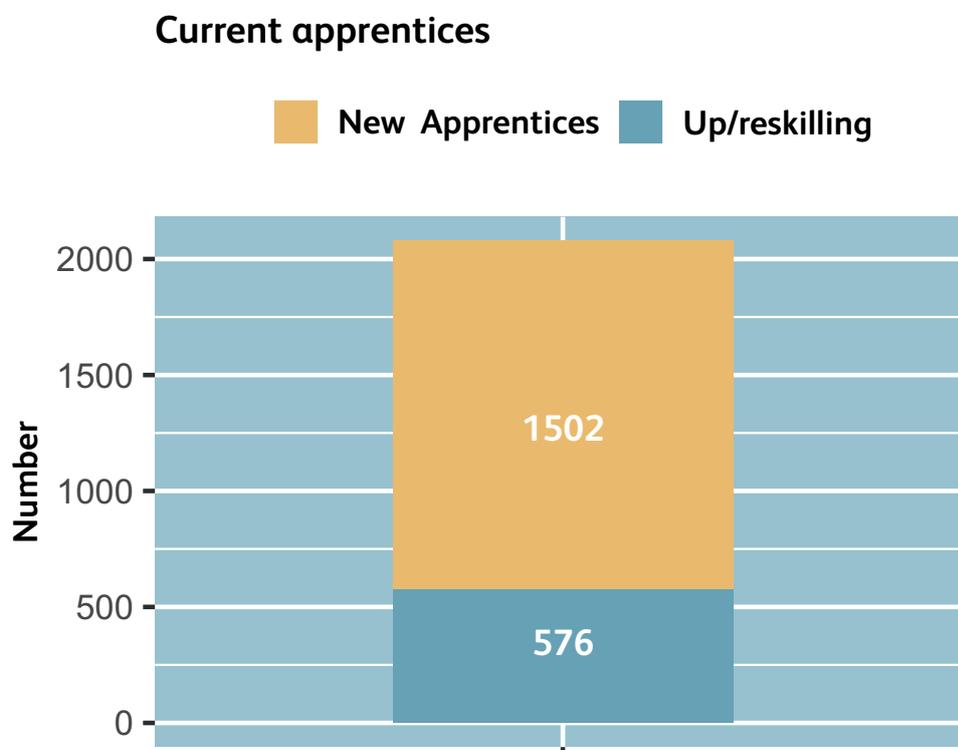
A total of 18 employer organisations provided information for this survey. Although this might appear low in overall numbers, the nuclear sector is quite compact in that a significant proportion of the workforce is employed in a relatively small number of organisations. It is estimated that the respondents between

them employ at least 50% of the UK’s nuclear workforce, which means that reliable conclusions can be drawn from the sample. Respondents’ organisation sizes varied from under 250 employees to over 10,000, giving a good spread of experiences of incorporating apprentices into different sizes of workforce. Further work will be done in future surveys and research into gathering information from the wider supply chain companies, many of which are smaller and may therefore have different experiences and priorities when it comes to apprentices.

1. Nuclear Workforce Assessment 2019, published December 2019. www.nssguk.com/resources/nssg-publications



Current apprentices

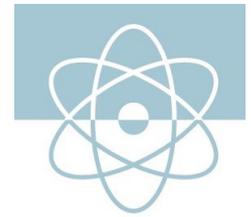


The total number of apprentices reported by respondents was 2,078. The figures show that 28% of apprenticeships are used for upskilling and reskilling existing staff, and discussion in the Nuclear Skills Strategy Group and Standards Advisory Group suggests that this approach has increased since the introduction of the Apprenticeship Levy.

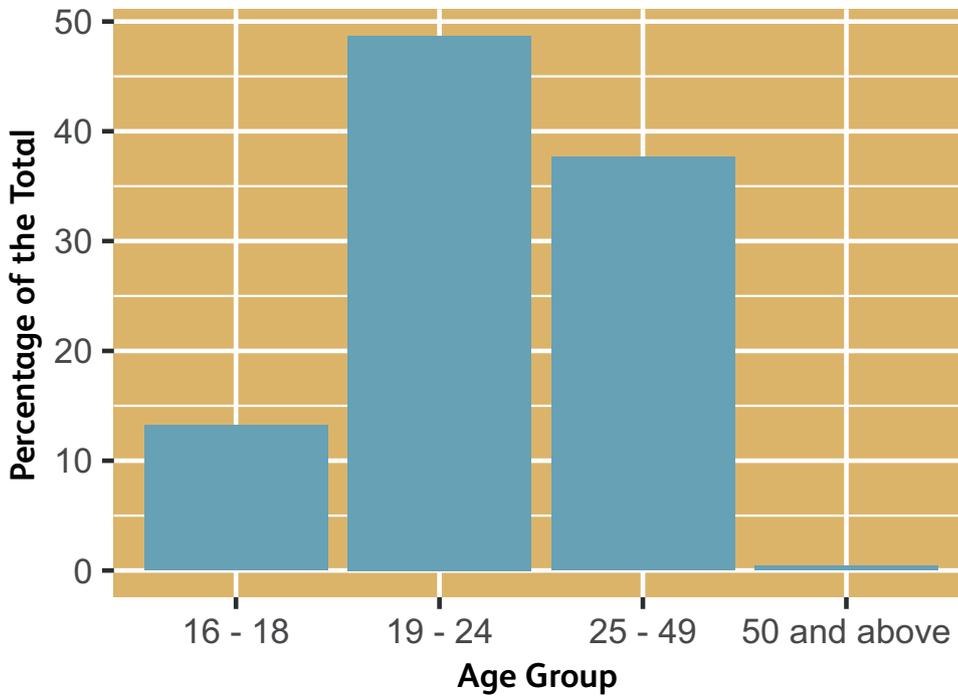
All but one of the 18 respondent organisations were already using apprenticeships. The reason given by the other organisation was that they were too new to UK operations to support apprentices in training, but they expect to do so from 2020.

Although the scope of the survey covered England, Scotland and Wales, the figures are dominated by apprentices in England (99.5%). The total reported number on Modern Apprenticeship Frameworks in Scotland was 12 (0.5%). Discussions with respondent employers suggests that there is scope for further apprentice recruitment in Scotland.

No apprentices were reported in Wales, but this position would change significantly if there were developments regarding the identified new nuclear build site on Anglesey (or indeed any other major developments in the sector in Wales). When plans for the Wylfa Newydd development were suspended, apprentices who had been recruited by Horizon Nuclear Power were transferred to other companies, many of them remaining within the nuclear sector by moving to EDF Energy to work in England.



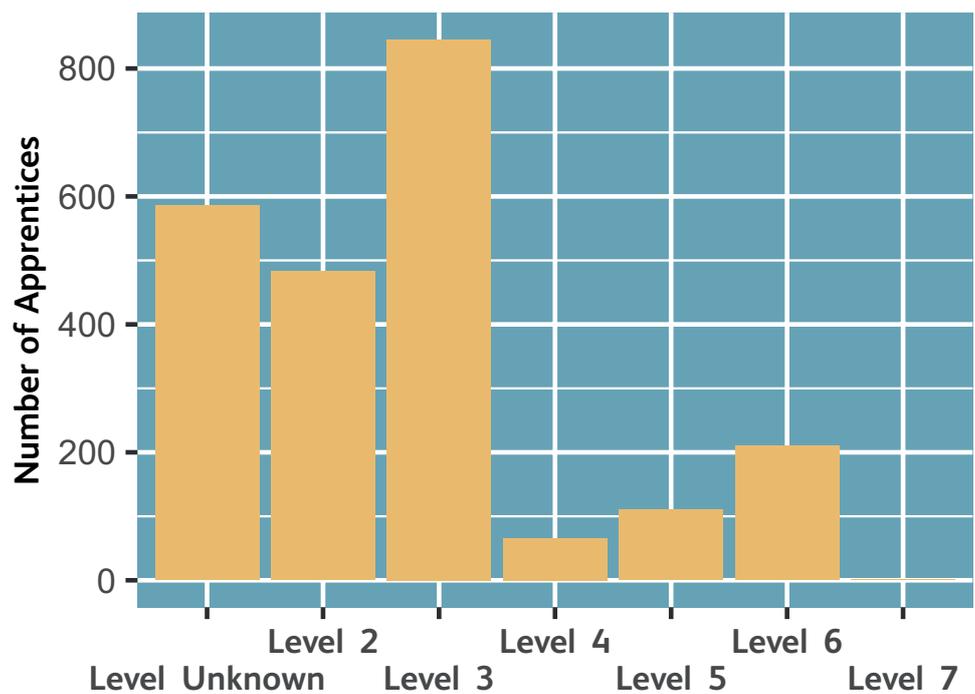
Current apprentices by age

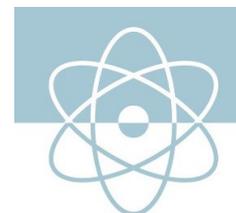


Almost half of the apprentices reported fall into the 19-24 years age category, demonstrating the importance to the sector of the apprenticeship route as a means to recruit young new entrants. In addition to this, the open-age nature of apprenticeship funding (in England) means that over a third are aged 25-49, which can be linked to figures elsewhere showing the importance of using apprenticeships to upskill and reskill the existing workforce. The use of apprenticeships among those over 50, however, remains very low.

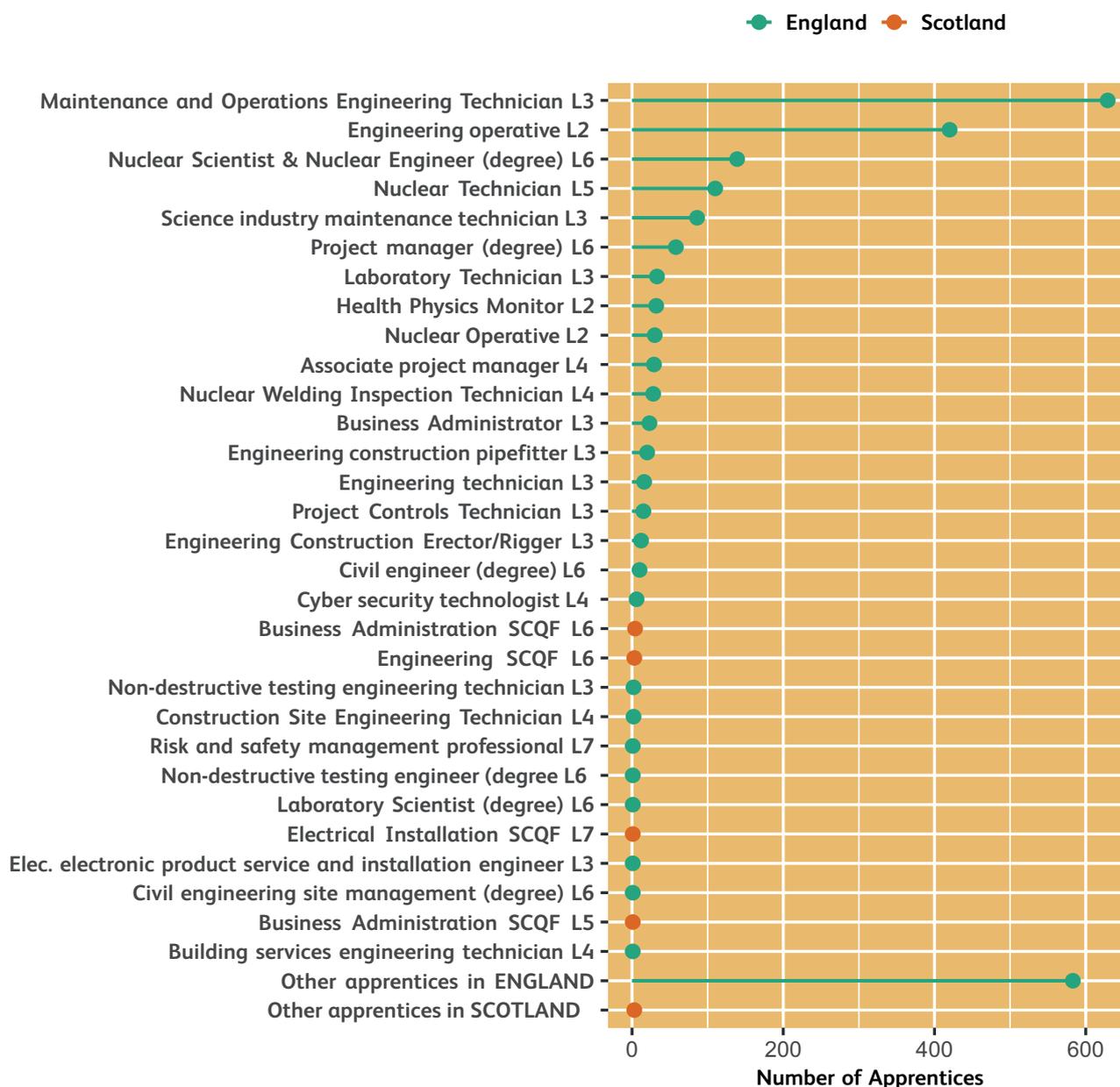
The spread of apprenticeship numbers across levels shows the applicability for a range of occupation in the sector. The large majority of apprentices are at the traditional Levels 2 and 3, and low numbers at Levels 4 and 5 reflect the fact that roles there have typically been seen as ones that people would progress to after their initial apprenticeship. There is also a smaller but significant number at Level 6. This reflects the importance to the sector of the degree apprenticeship route. Take up of the sector's own Nuclear Scientist and Nuclear Engineer Standard, and others including the Project Management degree apprenticeship, are aimed at addressing specific skills shortages identified within the sector at higher levels.

Current apprentices by level





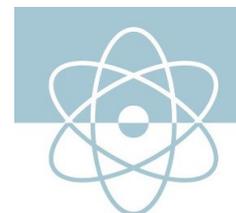
Apprenticeship Standards and Frameworks used



For the survey, a list of commonly-used Standards and Frameworks was agreed with the Nuclear Standards Advisory Group, for respondents to select from (54 from England, 40 from Scotland and 40 from Wales). The above chart shows the list of Standards and Frameworks reported as being used in the sector.

Of those selected, over half of the total number of apprentices reported are accounted for by the top two named Standards: Maintenance & Operations Engineering Technician L3, and Engineering Operative L2. These Standards are found in a range of sectors, as are popular responses such as Project Management/Controls and Business Administration occupations, demonstrating the applicability of more generic “skills for nuclear” rather than just nuclear-specific skills in the sector.

The second-highest category selected was “Other” – in other words, none of the Standards on the named list. The fact that this category is approximately 29% of the total demonstrates the long tail of apprentice occupations in the sector that have low annual volumes across a wide range. Further detail on this category is not available, but future surveys will aim to explore the range of those being used by nuclear employers from the full list of over 1,300 Standards and Frameworks.



Plans for recruitment

The figures reported above relate to apprentices currently on programmes in 2019. When asked about their planned recruitment for 2020, the aggregate total from respondents was 912 apprentices, a figure equivalent to 43 % of the current total on programme. Given that the typical duration of the more common Standards used varies between one to three years, this figure is within the range that would be expected to keep the number of apprentices in the sector about the same.

However, plans for apprentice recruitment are subject to significant change depending on developments within organisations and in the wider sector, so these plans can only be indicative at this stage.

Completion and retention rates

When asked for the approximate completion rate for their apprentice recruits, employers reported a rate of 96 % (weighted based on the number of apprentices employed). This figure is much higher than the official average rate seen across all apprenticeships in England, which stands at 67 %.²

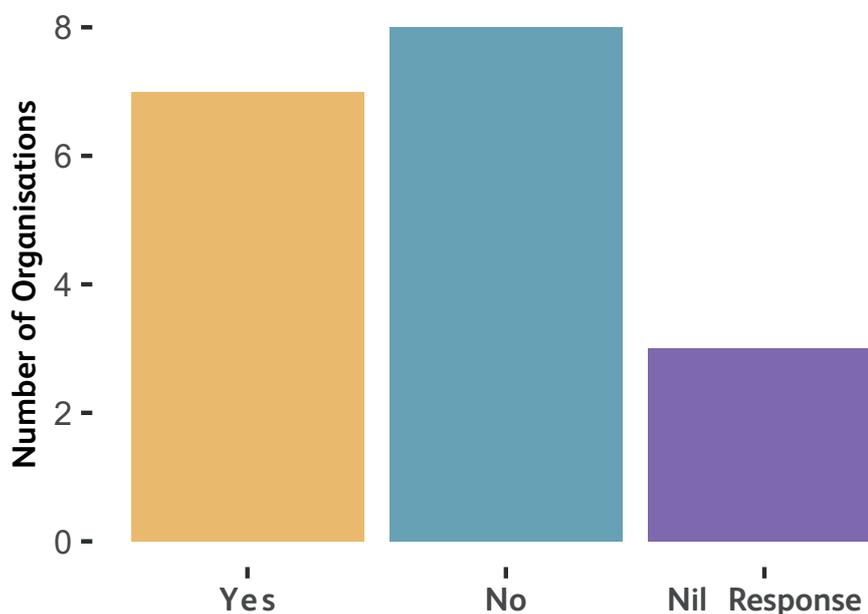
When similarly asked what proportion of their apprentices they expected to retain at the end of their apprenticeship period, the weighted figure from employers was even higher, at 99 %. These figures are self-reported, and subject to variations, but taken together they show the level of commitment from nuclear employers to their apprentices, given that substantially all of them can be expected to complete their apprenticeships and remain as competent members of the workforce.

Additional use of qualifications

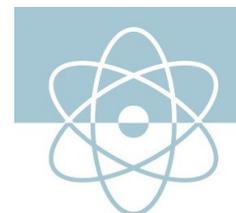
Respondents were asked whether they used additional regulated qualifications such as BTECs, alongside their training towards Apprenticeship Standards in England. The question specified that this related to qualifications not already embedded in the relevant Apprenticeship Standard.

Seven of the respondent organisations answered that they do this, and this issue has been further discussed in the Nuclear Standards Advisory Group. The cost of a qualification that is not integrated into a Standard is not recoverable through the Apprenticeship Levy, so this practice incurs an extra cost for the employer. It is clear that employers sometimes do not feel that the Apprenticeship Standards cover all of the Knowledge, Skills and Behaviours necessary to demonstrate and evidence competence in the relevant roles, and additional qualifications are being used to supplement them. This has implications for Trailblazer Groups when developing and reviewing Standards for the sector.

Additional use of regulated qualifications

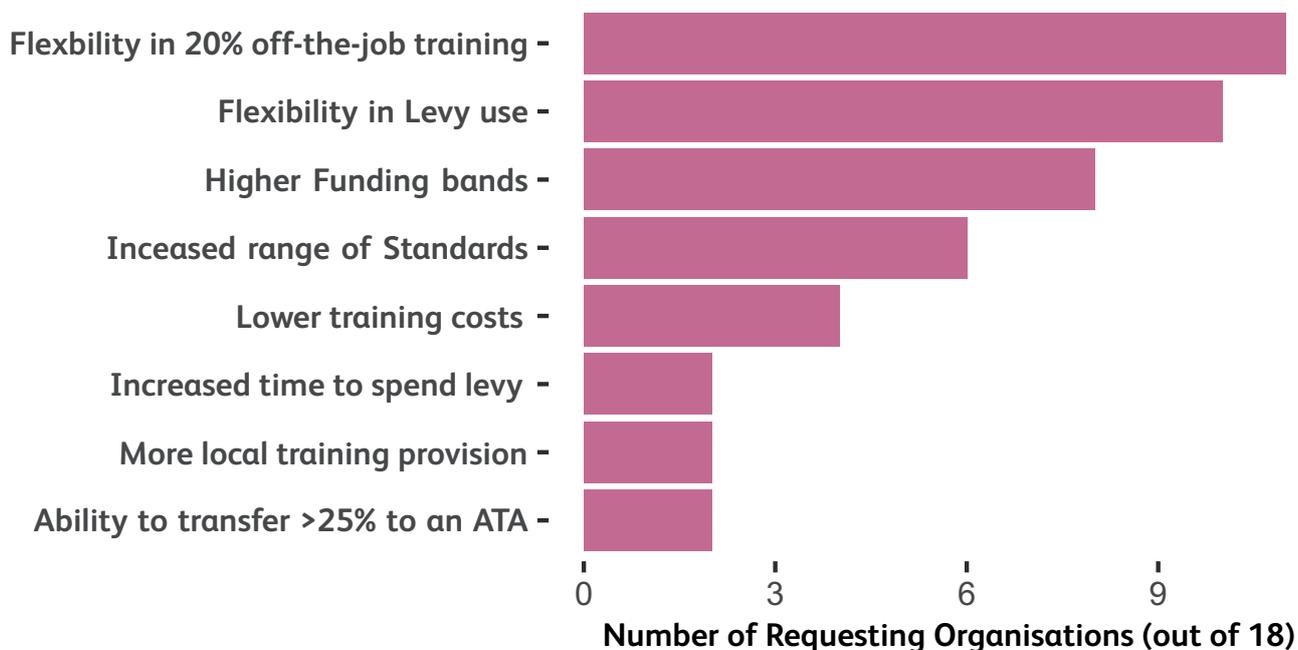


2. Department for Education National Achievement Rate Tables, March 2019



Drivers of apprenticeships

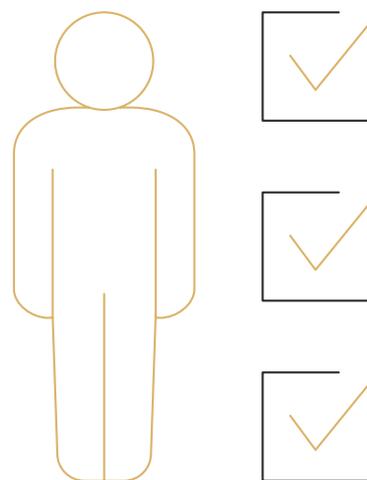
Drivers to increase Apprenticeships

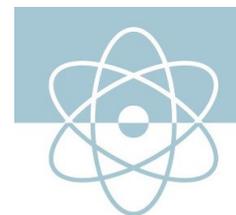


When asked what factors might encourage them to use more apprenticeships, employers selected a range of issues relating to public policy and apprenticeship delivery.

Off the job training - The most popular answer, with 11 of the 18 respondents, related to flexibility in the 20% off-the-job training requirement. In sectoral discussions on this issue, nuclear employers have been clear that they do understand the need to ensure that apprentices are given time away from their role to fulfil learning requirements, but believe that this off-the-job element should have greater flexibility. In technical roles such as those typically seen in the sector, a high proportion of the necessary skills, knowledge and behaviours are best learned on the job.

Flexibility of Levy – Ten respondents said that they would increase apprenticeship takeup if there were more flexibility in use of the Levy. Current restrictions on Levy use allow it to be used only for external training and assessment costs. This excludes significant other investment associated with employment of apprentices in the nuclear sector, such as supervision, backfilling productive posts, personal protective equipment, travel, and engagement with training providers and end point assessment organisations.

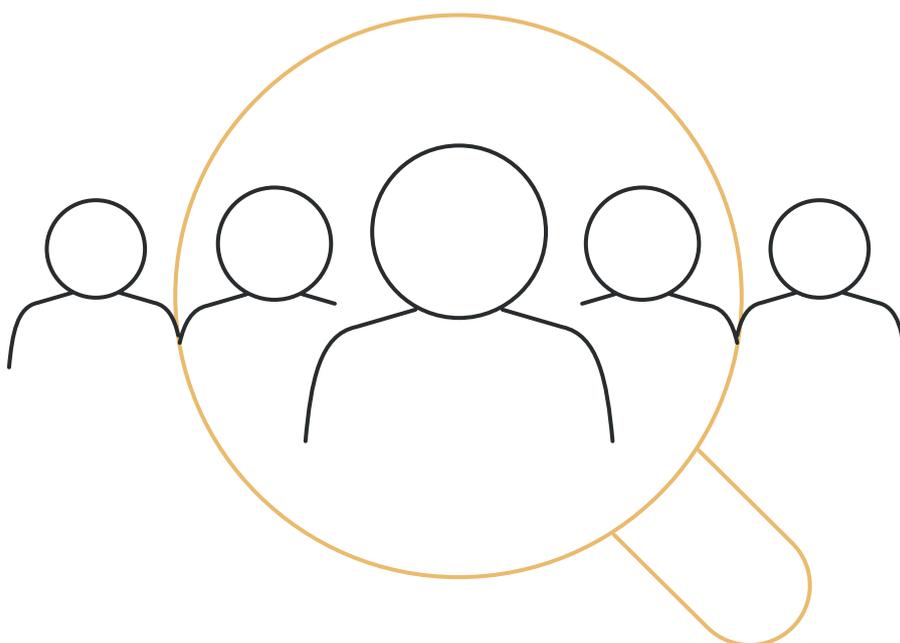


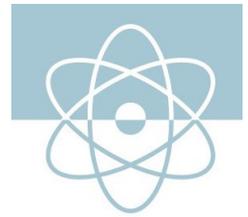


Funding bands, training costs and time to spend Levy – Nuclear sector employers are keenly aware of the comparison between costs and available funding, which affects commercial decisions on apprenticeship recruitment. The current system requires employers to spend Levy funds within 24 months of incurring the liability, which introduces a time pressure that might not meet the pattern of business requirements.

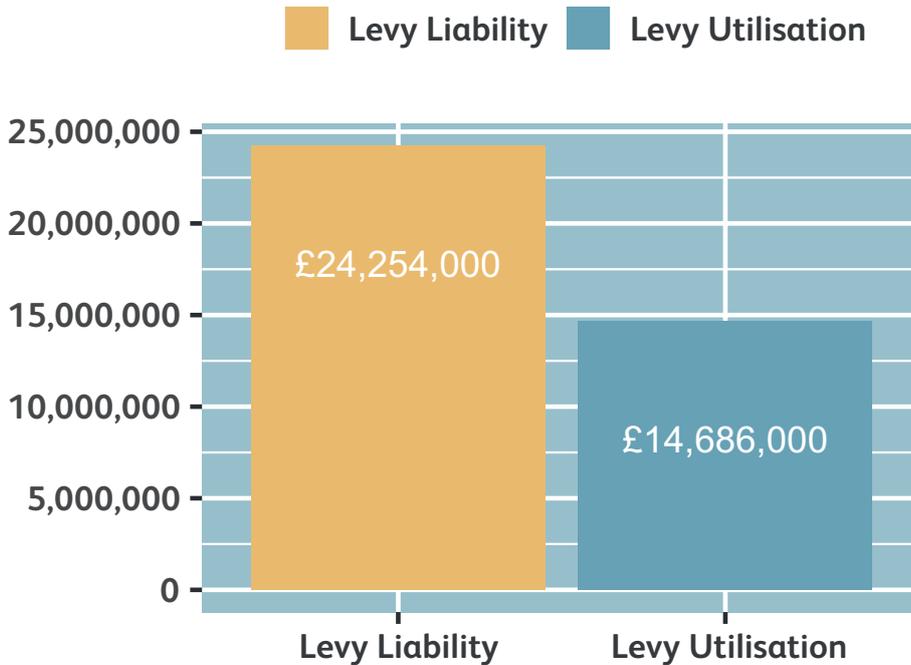
The outcomes of funding band reviews published so far by the Institute for Apprenticeships and Technical Education (IfATE) have, more often than not, seen reductions in funding. Employers in the sector have said that they believe this general downward pressure on funding will lead to lower use of the Levy, and make it more difficult for them to make the commercial case for uptake of apprenticeships.

Transfer of Levy – The recent increase from 10% to 25% of the amount that employers can transfer to the Levy accounts of other organisations was welcomed in the nuclear sector. A further increase would allow more flexibility in dealing with supply chain organisations and Apprenticeship Training Agencies, to improve the number of apprenticeship starts. This factor was selected by two of the survey respondents.



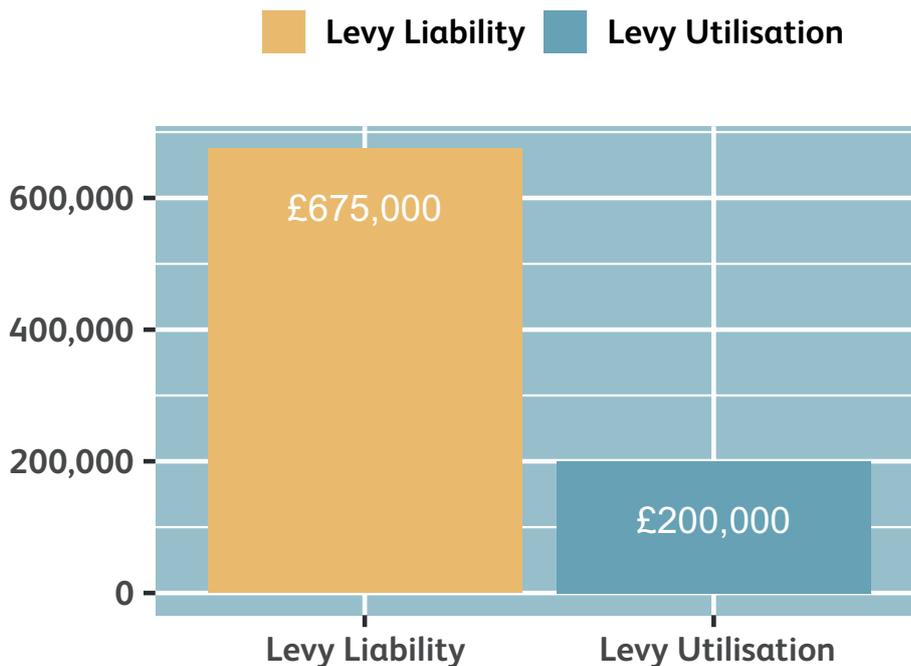


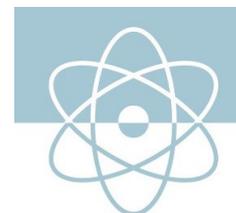
Levy liability and utilisation



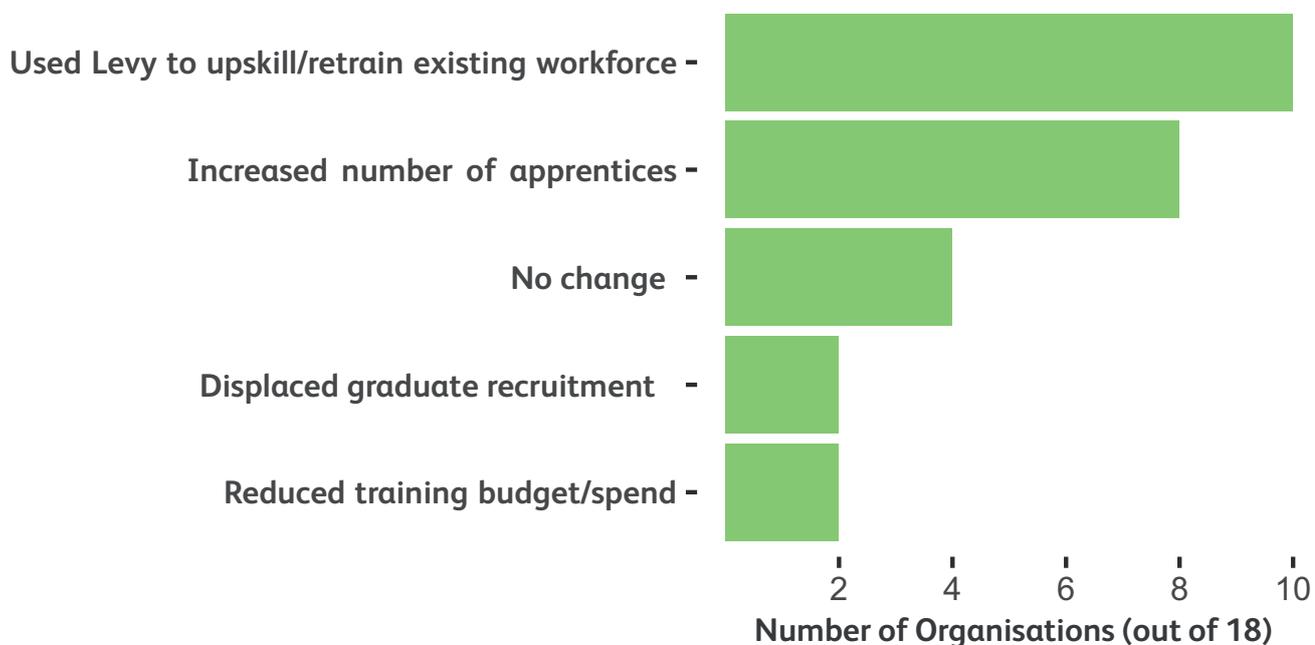
The aggregate amount of annual Apprenticeship Levy paid by survey respondents was at least £24.25 million (and assumed to be higher than this since not all respondents were able to provide full information). Of this amount, they were currently able to utilise £14.69 million (61 %) through apprenticeship recruitment. There were variations in the respective ratios of Levy liability and utilisation, with the median liability reported being £675,000 and the median amount utilised being £200,000.

Median levy



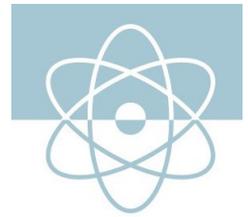


Levy influence



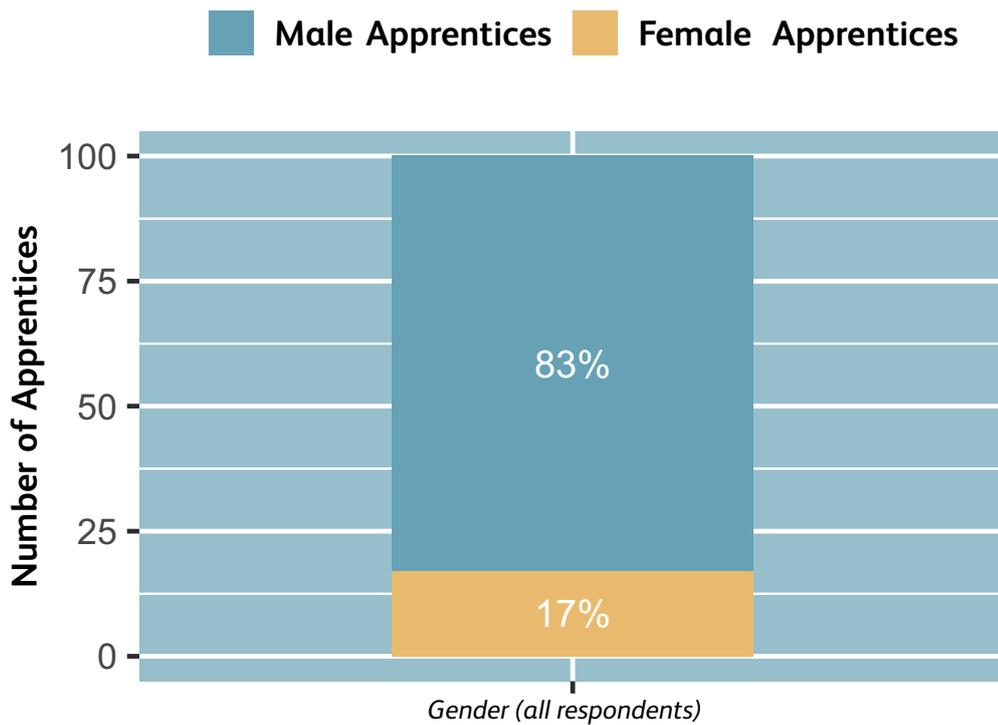
It is clear from survey responses that the introduction of the Apprenticeship Levy has changed behaviour around apprenticeships in the sector. More than half of respondents had used apprenticeships to upskill or reskill their workforce, and more than a third had increased the number of apprenticeships since the Levy's introduction.

Only two respondents said that the Levy system had displaced graduate recruitment in their organisation. The same number had seen a reduction in training budget as a result of the Levy.



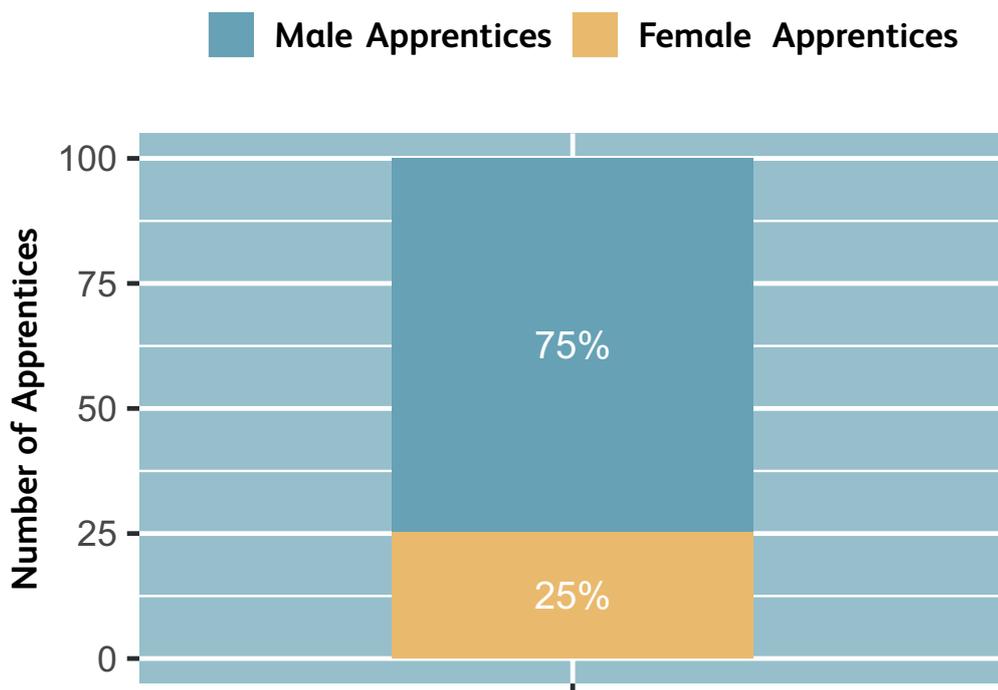
Gender

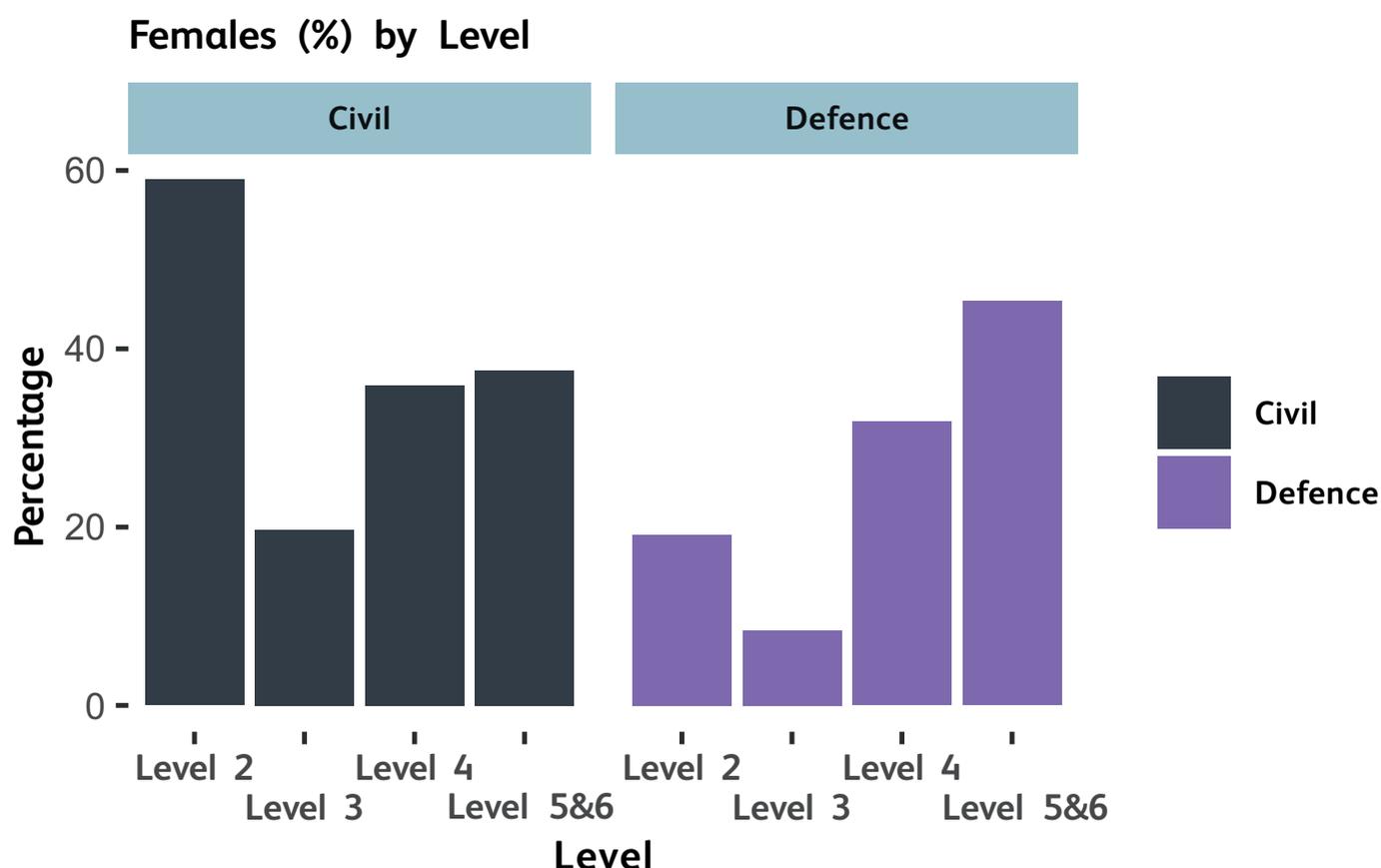
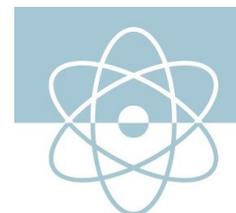
Gender



The issue of gender balance has been reviewed recently by the Nuclear Skills Strategy Group and partner organisations, as part of a drive to a more diverse sector workforce. Responses to the survey showed that only 17% of apprentices reported are female, although this figure rises to 25% when the Royal Navy is excluded from the sample. This figure is consistent with data provided to the Nuclear Workforce Assessment, allowing for sampling error rates.

Gender (excluding Royal Navy)

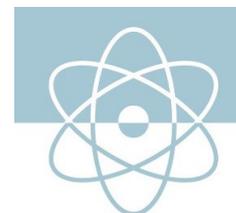




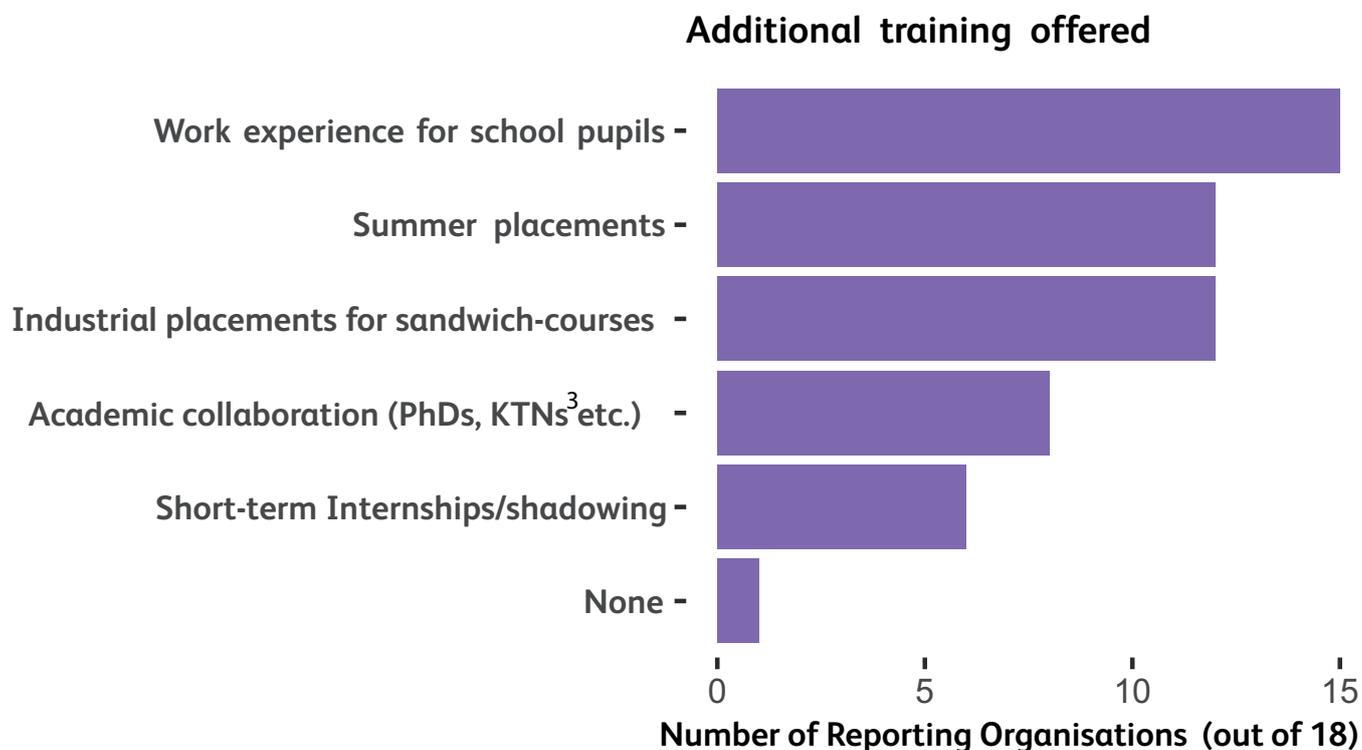
The above chart, showing the proportions of female apprentices by level, is taken from the new Nuclear Workforce Assessment 2019 (NWA). It demonstrates that female apprentices are distributed towards the ends of the scale, rather than the middle. On the civil nuclear side of the sector, we know from other data in the NWA that a significant number of the female apprentices are in the “Business” function. Conversely, the numbers for Level 2 and 3 in defence are dominated by large numbers of recruits into the Royal Navy, who are predominantly male.

These concentrations of female apprentices in Level 2 business administration roles, and in scientific and management roles at Levels 5 and above, suggest that the sector still has some way to go in attracting female entrants to apprenticeships into the more traditionally male-dominated technical roles typically seen at Levels 3 and 4.

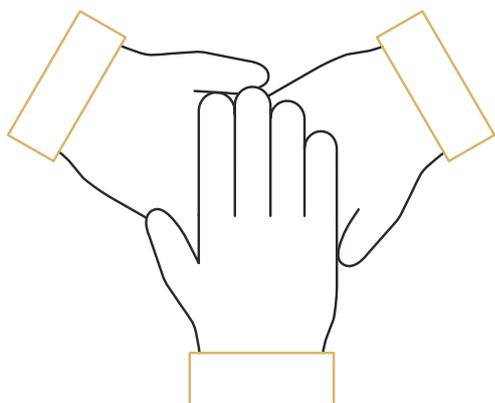
Having said this, the proportions of female apprentices at Levels 5 & 6 seen here are higher than in the NWA’s figures for graduate trainees in the sector, demonstrating that the apprenticeship route is contributing to addressing gender balance at these levels

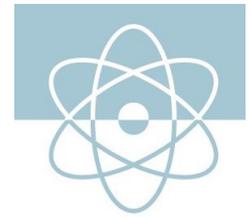


Additional recruitment pipeline activity



In addition to the information above relating to apprenticeship activity, respondents were also asked about other activity aimed at growing their recruitment pipeline of young people entering the sector. All but one of the responses listed at least one of the activities named, with the largest numbers engaged in work experience for school pupils (15 respondents), summer placements, and industrial placements for sandwich courses (12 each).





Recommendations

Flexibility of Apprenticeship Levy

The current restrictions on use of the Levy allow it only to be used for external training and assessment costs. This excludes significant other costs associated with employment of apprentices in the nuclear sector, such as supervision, backfilling productive posts, personal protective equipment, travel, and engagement with training providers and end point assessment organisations. We recommend that further flexibility in use of the Levy be introduced to recognise these costs and allow them to be offset against Levy funding.

We are keen to encourage diversity in our workforce, and we recognise that people from some backgrounds experience barriers to working in the nuclear sector, including economic and geographical barriers, and also those of perception. Given that geographical locations of nuclear organisations are often isolated, and that apprentices need to travel to work and to specialist training provision, we recommend the flexibility to allow bursaries for travel and other ancillary costs from Levy funding, to address economic barriers to diversity and social mobility.

Levy-paying companies in the sector are keen to recruit a suitable number of apprentices, it is not always possible to make as much use of the funds in their digital accounts as they would like. Although the aggregate rate of Levy recovery in this report is 61 %, there is clearly a range between organisations, and we have anecdotal accounts of some employers using a quarter, or less, of their Levy amounts. Further flexibilities as suggested in this report would help employers to make use of their funds to develop apprentices for their workforce, thereby contributing to national targets for apprenticeship growth.

Funding for higher apprenticeship levels

Employers in the nuclear sector read with concern the proposal in the Augar Review of Post-18 Education and Funding, to restrict the availability of Apprenticeship Levy funding at Level 6 and above for individuals who already hold a degree. They feel that, if adopted, this proposal would affect the sector's ability to address critical skills needs. They have already developed a nuclear-specific Apprenticeship Standard for the sector at Level 6, and developments are underway at Levels 7 and 8, including the Nuclear Technical Specialist at Level 8 that was outlined in the Nuclear Sector Deal. This report also demonstrates the wide use of Standards at these levels that have been developed in conjunction with other sectors. The sector welcomes the fact that the Government's apprenticeship reforms in England over the past few years allow the flexibility to apply the apprenticeship approach at all levels, and recommends that this should continue.

Off the job training

Over three-fifths of respondents said that more flexibility in the current 20 % off-the-job training requirement would encourage them to increase apprenticeship uptake. While nuclear employers recognise that time away from their role is an important part of an apprenticeship, many believe that this off-the-job element should have greater flexibility. In technical roles such as those typically seen in the sector, a high proportion of the necessary skills, knowledge and behaviours are best learned on the job.

Collaborative apprenticeships

In the submissions to the Nuclear Sector Deal, we proposed collaborative approaches such as a managed group apprenticeship scheme. This has the potential to address market conditions whereby potential contract bidding organisations have little lead-time to recruit and train apprentices to achieve competence. It can also enable the building of suitable cohorts of apprentices for training, widening provision and driving cost efficiencies. We would recommend that Government work with the sector on funding for the costs of setting up and managing such schemes.

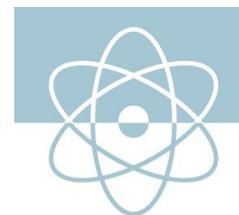
Such an approach can also address the position of agency supplied workers. Given the pattern of contracting in the nuclear sector, especially in decommissioning of existing sites and the construction of new ones, there is a substantial number of people in this category. Collaborative schemes can allow for flexibility across multiple employers to be managed for long enough for successful completion of an apprenticeship.

Funding bands

The outcomes of funding band reviews published so far by the Institute for Apprenticeships and Technical Education have, more often than not, seen reductions in funding. We believe that this general downward pressure on funding will lead to lower use of the Levy, and make it more difficult for employers to make the commercial case for uptake of apprenticeships. We recommend that this trend be reversed.

Transfer of Levy

We welcomed the recent increase from 10 % to 25 % of the amount that employers can transfer to the Levy accounts of other organisations. We would recommend that this amount be increased further to allow more flexibility in dealing with supply chain organisations and Apprenticeship Training Agencies, to improve the number of apprenticeship starts.



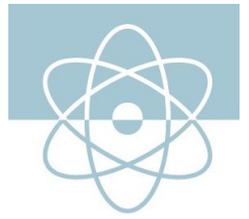
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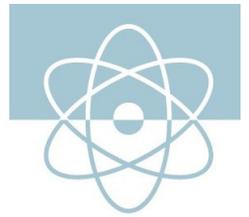
The Nuclear Skills Strategy Group and the Nuclear Standards Advisory Group would like to thank all the employers who completed the Apprenticeship Survey and those who have been involved in collaboration on developments regarding apprenticeships in the sector.

We would also like to thank the following organisations for helping us to disseminate the survey to the wider sector:

- Engineering Construction Industry Training Board
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- Nuclear Industry Association
- Nuclear Institute







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