Nuclear Skills Strategy Group

Nuclear Apprenticeship Survey 2020-21

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1. Foreword

Justine Fosh - Nuclear Skills Strategy Group Theme Lead on Apprenticeships

I am delighted to present this second Apprenticeship Survey for the nuclear sector in the UK.

The nuclear sector has always seen apprenticeships as an important tool in building a pipeline of skilled people for their workforce, and this report shows that this remains important today. The sector recruits to a wide range of high-quality, well skilled occupations, and uses a mixture of nuclear-specific and more generic Apprenticeship Standards and Frameworks to develop them.

The Nuclear Skills Strategy Group has Pathways and Apprenticeships as one of its six key themes. The strategic focus is now on co-ordinating the routes to and from apprenticeships, including new entrants and people who are more established in their careers. Our Strategic Plan is linked to the Nuclear Sector Deal – currently being refreshed – which contains the target of 50 % female apprenticeships starts. This Survey shows that we have further to go from the current position.

We included apprenticeship information in our contribution to the Green Jobs Task Force, and we are proud that apprentices working in nuclear energy generation are playing a key part in achieving the government's target of net zero carbon by 2050.

Respondents to the survey pay between them approximately £10.5m in Apprenticeship Levy – and of course the figure for the whole sector will be higher than this – but the amount recovered through apprenticeship training is only about 57 %. This means there is clearly more opportunity for nuclear sector employers to use apprenticeships to develop their workforce at all levels.

Justine Fosh - Nuclear Skills Strategy Group Theme Lead on Apprenticeships

2. Introduction

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

This second Apprenticeship Survey took place during the COVID-19 pandemic, and it is especially gratifying to see that the respondents have maintained a commitment to apprentices during difficult operating conditions. Most employers have been able to adapt their business and training practices, and the general approach was to delay rather than cancel normal recruitment and training of apprentices.

This demonstrates the importance of apprentices to our sector, and we know that employers are making various plans to catch up with apprenticeship development as things begin to return to normal.

The apprenticeship route does not only apply to young people in entry level roles – about 40 % of the apprentices in the sector are over 25 years old, and our recent developments of new Apprenticeship Standards in England have expanded opportunities at Levels 6 and 7 (equivalent to Bachelor's and Master's degrees). There is certainly scope for employers to expand their use of apprenticeships for workforce development for more established staff who are upskilling or moving to new roles.

Later this year, the Standards Advisory Group will oversee the revision and updating of all of the existing nuclear-specific Apprenticeship Standards, to ensure that they are up to date and reflect best practice in apprenticeship development.

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

3. Executive Summary

This Nuclear Sector Apprenticeship Survey was conducted in the second half of 2020, and the response period was extended to allow employers time to provide information during the COVID-19 pandemic. There were twelve respondent organisations, estimated to represent almost two-fifths of the workforce of the UK nuclear sector. Responses came from all major parts of the sector, civil and defence, including the supply chain.

It is clear from the information provided that the apprenticeship route remains 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 2,669 current apprentices, of whom 62 % are new entrants to the sector and 38 % are existing staff re-skilling or upskilling to fulfil new roles. Regarding the age range, 52 % are in the traditional 16-24 year old category. The figures are dominated by apprentices in England, with very low numbers in Scotland and Wales.

Apprenticeship completion and retention rates in the sector are very high. Employers reported a completion rate of 96 %; much higher than the official average rate seen across all apprenticeships in England, which stands at 67 %. The retention figure is 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. Over half of the total number of apprentices reported are accounted for by the top two named Standards: Maintenance & Operations Engineering Technician (Level 3), and Engineering Operative (Level 2). 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. 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 £10.5 million annually in Apprenticeship Levy, of which they spend only £6 million (57 %) on their apprentices. The Levy is clearly now well-embedded in their businesses, and most respondents have increased their number of apprentices and taken the opportunity to upskill or re-skill their existing workforce.

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.

4. Aims and methodology

Civil and defence nuclear companies were invited to respond to an online survey in late 2020. Companies were contacted directly and invited through the Nuclear Industry Association, the Nuclear Institute, the National Skills Academy Nuclear, and other nuclear skills channels. Since some respondents cover defence and civil activities, the two subsectors remain combined in this report. Twelve complete responses were obtained from the following organisations.

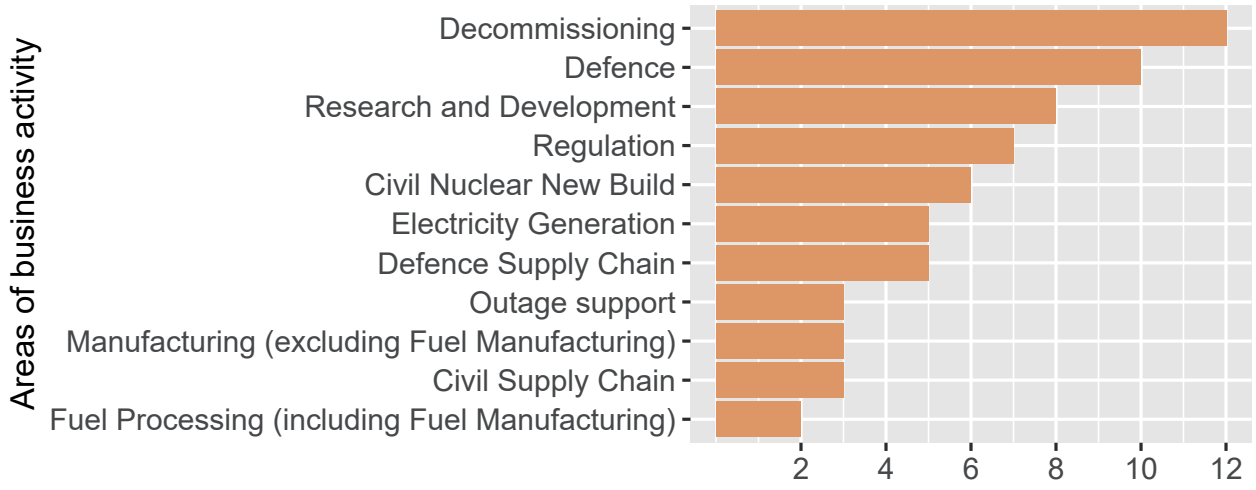
AWE plc	Magnox Limited
CGN UK	National Nuclear Laboratory
Doosan Babcock	NIS Limited
DSRL	Office For Nuclear Regulation
EDF	Royal Navy
Energus	Sellafield

The respondents between them represent over 35,000 nuclear workers; around 38 % of the UK's nuclear workforce.

Organisations' systems for recording data on their apprentices vary significantly, and this year's survey showed that some of the data presented in our previous survey was not comparable. For this reason, we have generally avoided drawing comparisons between the years, and are presenting the analysis as it relates to the year reported only. We hope to be able to draw comparisons over time in future surveys.

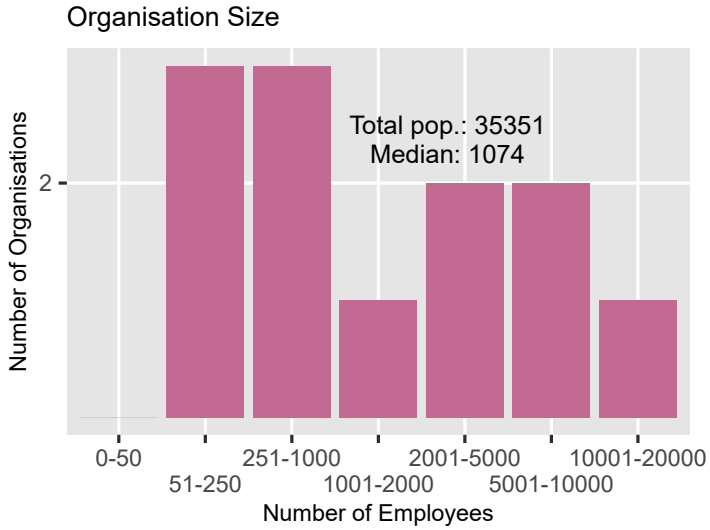
5. Findings and discussion

5.1 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 Assessment[1]. Since organisations sometimes cover more than one activity, the numbers in the graph above do not tally to the total number of survey respondents.

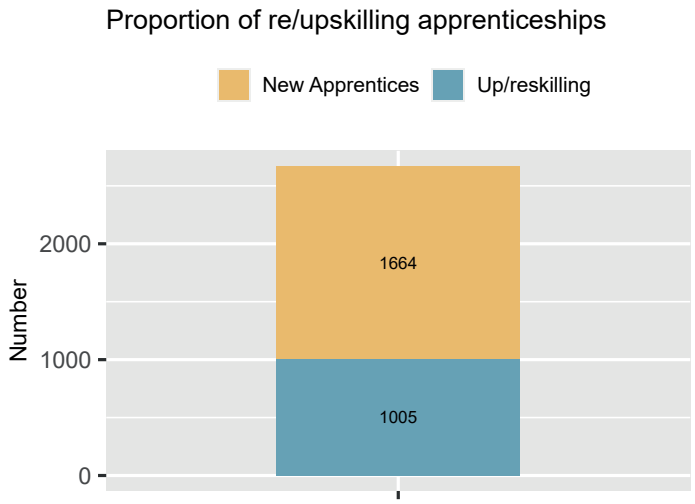
Data on apprenticeships across the sector would benefit from a deeper representation of supply chain companies, many of which are smaller and may have different approaches to apprenticeships than the Site Licensed Companies and larger contractors. Efforts were made to encourage responses from a wider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



A total of 12 employer organisations provided information for this survey. The respondents between them employ around 38 % of the UK's nuclear workforce. Respondents' organisation sizes varied from under 100 employees to over 10,000, giving a good spread of experiences of incorporating apprentices into different sizes of workforce.

1. Nuclear Workforce Assessment 2019, published December 2019, https://www.nssguk.com

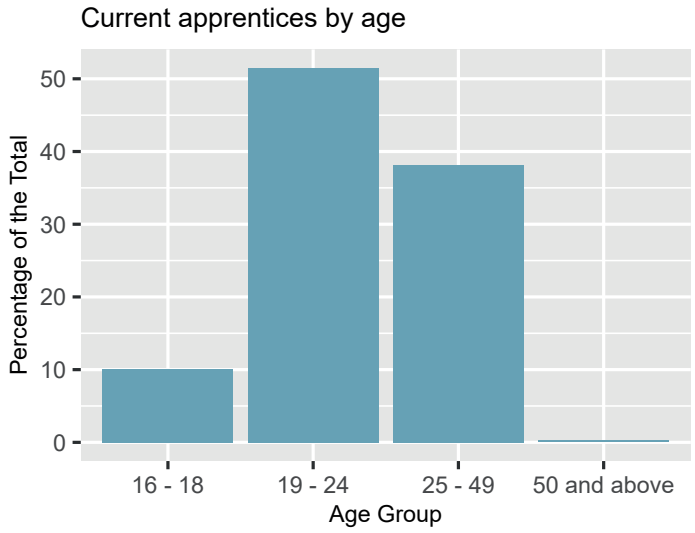
5.2 Current apprentices



All 12 respondent organisations are using apprenticeships.

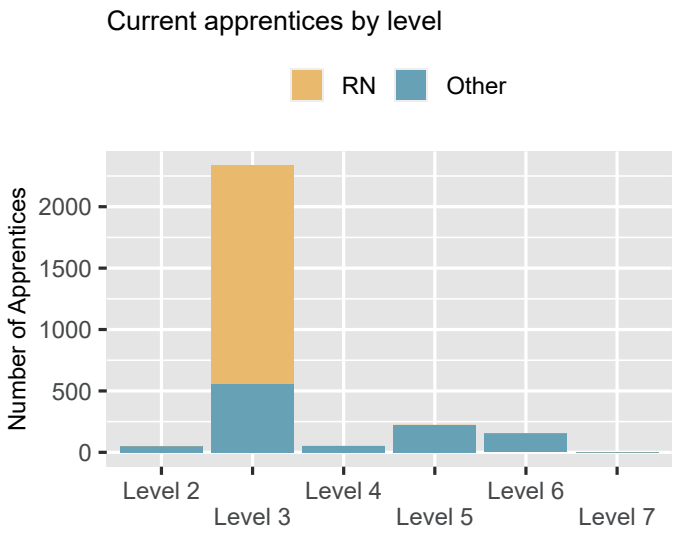
The total number of apprentices reported was 2,669. The figures show that 38 % of apprenticeships are used for upskilling and reskilling existing staff.

Although the scope of the survey covered England, Scotland and Wales, the figures are dominated by apprentices in England (98.4 %), with Scotland and Wales at 1.5 % and 0.1 % respectively. Discussions with respondent employers suggests that there is scope for further apprentice recruitment in Scotland, and the position in Wales would change significantly if there were developments regarding the identified new nuclear build site on Anglesey.



Slightly more than 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 well 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. Much of this is attributed to the Royal Navy, without which the age group accounts for under 10% of the total.

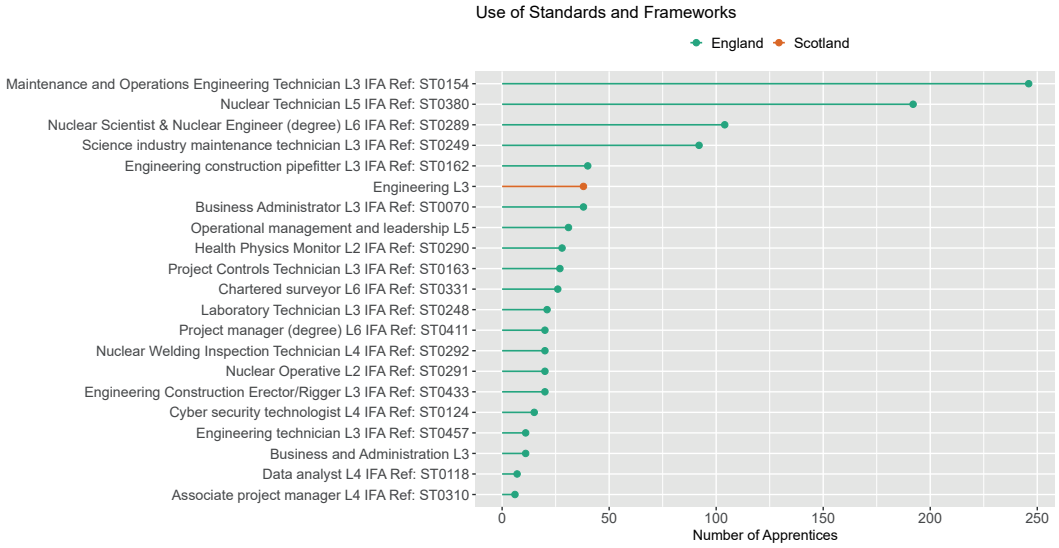
The use of apprenticeships among those over 50 remains very low.



The majority of apprenticeships in the sector are at Level 3, often seen as the typical, traditional skilled craft level. This is particularly true of the Royal Navy, where this is the standard route for recruits, but even without their cohort (colour-coded in the graph above) there are considerably more at Level 3 than any other. There is still good support at Level 5 (higher technician and HND equivalents), as well as Level 6 which reflects the popularity of degree apprenticeships.

Standard	Level	Ref	Number
Nuclear Operative	2	IFA Ref: ST0291	20
Nuclear Scientist & Nuclear Engineer (degree)	6	IFA Ref: ST0289	104
Nuclear Technician	5	IFA Ref: ST0380	192
Nuclear Welding Inspection Technician	4	IFA Ref: ST0292	20
Nuclear Health Physics Monitor	2	IFA Ref: ST0290	28

5.3 Standards 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 chart above shows the numbers of apprentices for each framework or standard. To aid clarity, the data for Royal Navy (1,778 apprentices), which was exclusively attributed to Engineering technician Level 3 (ST0457) has been excluded.

Plans for recruitment

The figures reported above relate to apprentices currently on programmes in 2020. When asked about their planned recruitment for 2021, the aggregate total from respondents was 790 apprentices, around a third 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 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 %.[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.

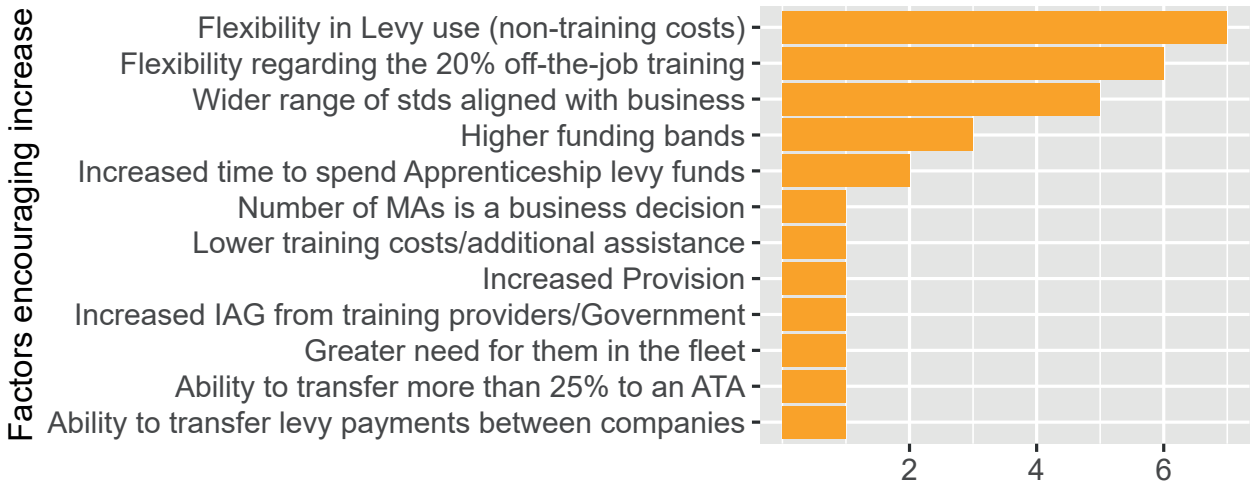
Additional use of qualifications

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 that are not already embedded in the relevant Apprenticeship Standard.

Five of the respondent organisations answered that they do this, and this issue has been further discussed in the Nuclear Standards Advisory Group. Employers are continuing to use additional qualifications to supplement Standards, and value the flexibility that multiple qualifications provide. This has informed the sector's response to government consultations on using qualifications in this way in the English apprenticeship system.

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

5.4 Drivers of 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 7 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 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.

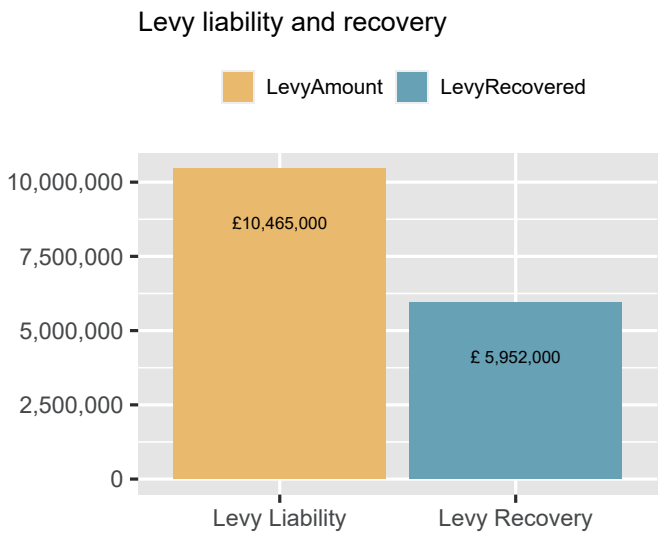
Flexibility of Levy - Six respondents said that they would increase apprenticeship takeup if there was more flexibility in use of the Levy. Current restrictions on Levy use allow it to be used only for external training and assessment costs. This excludes significant other costs associated with employment 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.

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 through payroll, which places a time pressure on expenditure that might not meet the pattern of business requirements.

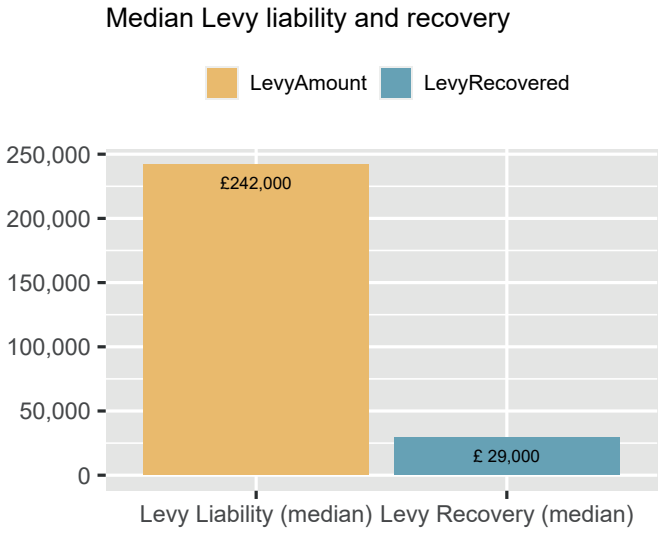
The outcomes of funding band reviews published so far by the Institute for Apprenticeships have, more often than not, seen reductions in funding. Employers in the sector have said that they believe this general downward pressure on funding will lead to lower use of the Levy, and make it more difficult 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 be replaced by Flexi-Job Apprenticeship Schemes), to improve the number of apprenticeship starts. This factor was selected by two of the survey respondents.

5.5 Apprenticeship Levy

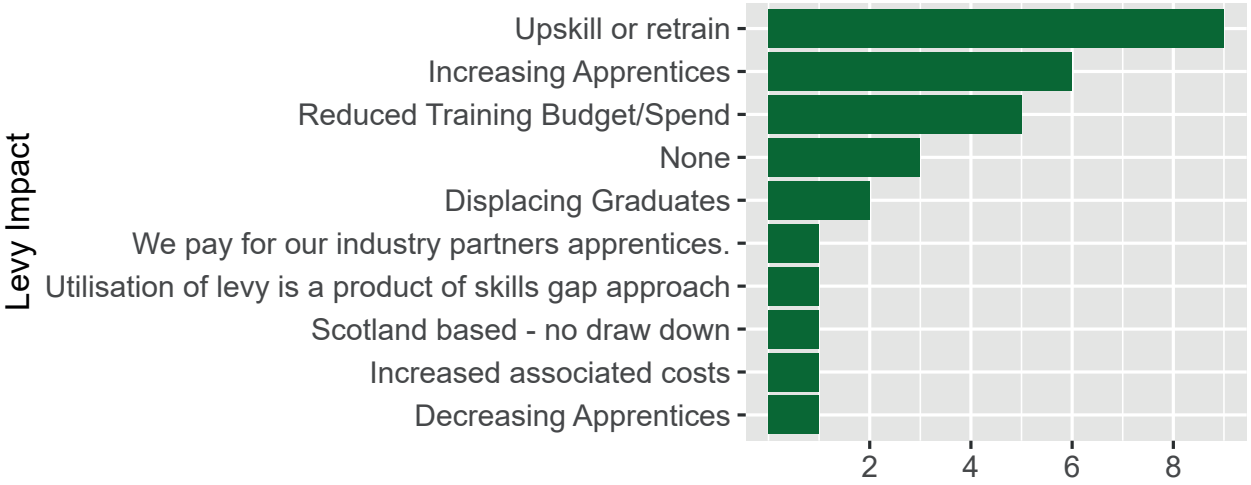


The aggregate amount of annual Apprenticeship Levy paid by survey respondents was about £10.5 million (and assumed to be higher than this since not all respondents were able to provide full information). Of this amount, they were currently able to recover £6 million (57 %) through apprenticeship recruitment. There were variations in the respective ratios of Levy liability and recovery, with the median liability reported being £242,000 and the median amount recovered being £29,000.

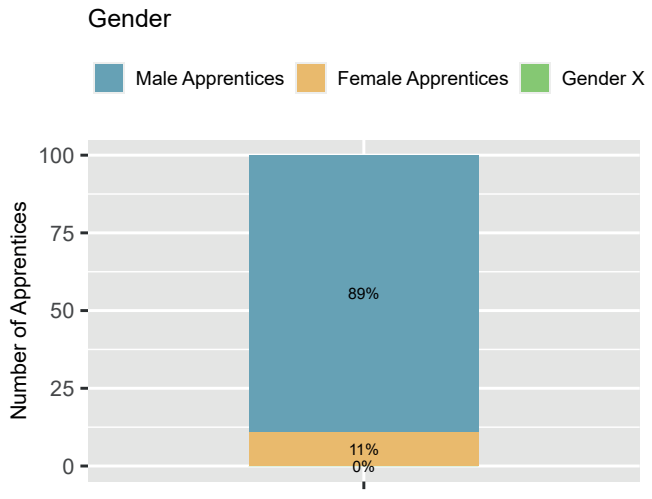


More than half of respondents had used apprenticeships to upskill or reskill their workforce, and half had increased the number of apprenticeships since the Levy's introduction. Five had seen a reduction in training budget as a result of the Levy.

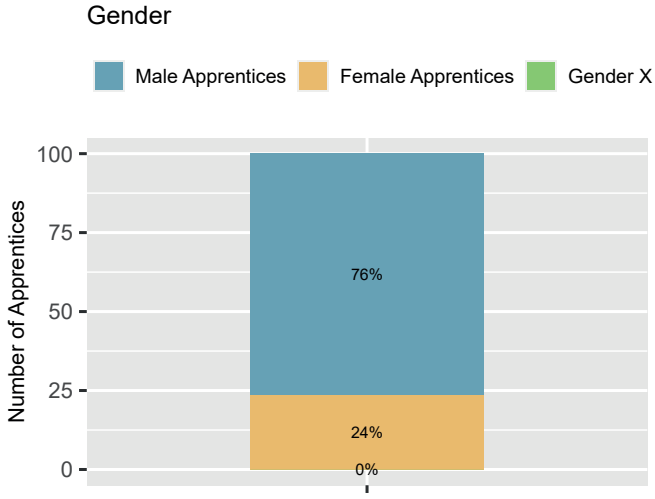
Only two respondents said that the Levy system had displaced graduate recruitment in their organisation.



5.6 Gender



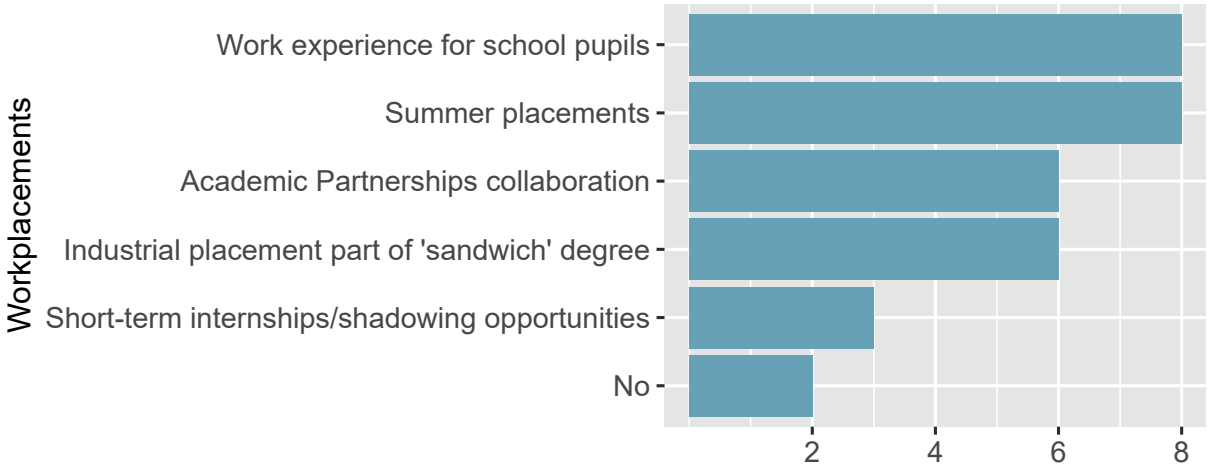
Gender including Royal Navy data



Gender excluding Royal Navy data

Gender balance continues to be reviewed by the Nuclear Skills Strategy Group, as part of a drive to a more diverse sector workforce. Responses to the survey showed that only 11 % of apprentices reported in this sample are female, although the figure rises to 24 % without the Royal Navy, which continues to have a very different gender balance. Please note that these figures are rather lower than suggested by the Nuclear Workforce Assessment, which might be due to sampling from the respondent organisations.

5.7 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 two of the responses listed at least one of the activities named, with the largest numbers engaged in work experience for school pupils (8), summer placements (8), and industrial placements for sandwich courses (6).

5.8 Impact of COVID-19

In this year's survey, an additional question was asked about the impact to date of restrictions arising from the coronavirus pandemic. As expected, the largest influence was on the delivery of training (all respondents), with delayed recruitment of new apprentices being reported by half of the respondents.

However, the overall effect was smaller than seen in the economy as a whole, bearing in mind that most of the apprentices in the sector are in occupations considered to be part of essential national infrastructure. Almost all nuclear sector employers therefore continued operations throughout the pandemic, albeit in a restricted or altered form, so their need for the pipeline of skilled new entrants remained. A quarter said there was no impact on the employment of apprentices.

6 - Acknowledgements

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:

National Skills Academy Nuclear

Nuclear Institute

Engineering Construction Industry Training Board

Nuclear Skills Strategy Group

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