



The Electrotechnical
Skills Partnership

Electrotechnical apprentice return on investment

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Smarter thinking

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1. Background and aims

1.1 Background

One of the most important questions facing employers is whether it is worthwhile taking on an apprentice. Studies from both government and industry bodies have outlined that apprenticeships are not only good for young people but bring substantial benefits to the companies that take them on. Indeed, uptake of electrotechnical apprenticeships has increased in recent years – a recent study indicated around 8,500 starts in 2022/23, compared to an average of just over 6,000 per year over the preceding decade.¹

However, The Electrotechnical Skills Partnership (TESP) has received anecdotal reports that announcements in the October 2024 budget may potentially have an adverse impact on this trend, with suggestions that employers may be freezing apprenticeship recruitment, or in extreme cases laying off apprentices.

Announcements that are impacting employers' decisions centre around changes that will come into force from April 2025, and include:

- employer National Insurance contributions increasing from 13.8% to 15%, and the salary threshold at which this is paid falling from £9,100 to £5,000, and
- the apprentice minimum wage increasing by 18%, which follows a 21% increase last year.

These changes will directly impact the costs associated with maintaining and expanding workforces. In particular, this is placing a squeeze on SMEs which often work to tighter margins and may be disproportionately affected. To remain viable, businesses are being forced to carefully examine their finances, to review where efficiencies might be realised. This is, anecdotally, leading to some businesses considering freezing recruitment or even laying off staff – including apprentices.

As part of labour market research in 2019, Pye Tait Consulting examined the potential return on employers' investment in apprentices.² Findings indicated there were potential benefits over four years for all levels of charge out rate, with apprentices at the 'medium' and 'high' charge out rates paying for themselves by year two.

However, given the substantial change in the landscape, with recent government announcements and the anecdotal reports of the subsequent impact this may have for apprenticeships in the sector, it is now timely to update the 2019 return on investment (ROI) calculations to demonstrate their value. To that end, TESP commissioned Pye Tait Consulting to update the 2019 research.

¹ Electrotechnical: A comparative guide to CITB, ECITB, and Building Services Engineering (Pye Tait, 2024) – unpublished

² TESP/Pye Tait, 2019, Labour market intelligence research

1.2 Aims

The aim of this commission is to provide TESP with an updated calculation of the ROI of employing electrotechnical apprentices by seeking answers to specific questions on costs of recruiting, mentoring and deploying apprentices within England through their four-year apprenticeship – mirroring the approach successfully utilised in 2019.

An additional objective of the research is to seek to corroborate anecdotal reports received by TESP, to verify and confirm employers' future intentions with regard to apprenticeship recruitment and retention.

2. Methodology

The work involved a two-phase approach consisting of 101 qualitative interviews with employers based in England which formed the backbone of the report.

This was supplemented with desk research to gather information on the following.

- The latest apprenticeship wage rates that apply across England
- The amount of time an apprentice spends in college
- Apprentice holiday entitlement
- The average annual electrical supervisor salary
- Apprentice charge out rates

2.1 Primary fieldwork

Interviews were conducted in February 2025 with 101 employers based in England who have employed an electrical apprentice within the last two years.

Pye Tait Consulting identified in-scope businesses and this was kindly supported by promotion by TESP.

Job roles of interviewees included Business Owners, Directors, Commercial Directors, Finance directors, Human Resources, Talent Acquisition Teams, Office Managers, administrative staff, and electrical supervisors. In some cases, it was necessary to speak to more than one person within the business.

Questions gathered quantitative information on apprentice wages, supervisor wages, any additional costs for course fees, recruitment costs (both in terms of fees and time spent on recruitment) as well as time spent by an apprentice doing unskilled work, skilled work under supervision, or other tasks, and time spent by supervisors mentoring apprentices. The question set was designed in close collaboration with TESP and used a very similar approach taken to 2019 to enable comparability of research findings.

2.2 Respondent profile

The 101 participating businesses comprise an even mix of company sizes (see Table 1) and are based or headquartered across England (see Table 2). Between them they:

- employ 10,855 FTE staff, and
- have recruited 550 electrical apprentices in the last two years.

Table 1 Respondent profile by company size

Company size	Number interviewed
Micro (1 to 9 employees)	25
Small (10 to 49 employees)	26
Medium (50 to 249 employees)	25
Large (250+ employees)	25
Total	101

Source: Pye Tait Consulting 2025

Table 2 Respondent profile by business location

Region	Number interviewed
North (NE, NW, YH)	34
Central (EE, EM, WM)	32
South (Lon, SE, SW)	35
Total	101

Source: Pye Tait Consulting 2025

3. Return on Investment calculations

Based on the information gathered, it is possible to calculate an approximate return on investment (ROI). These calculations employ a modelling approach which uses estimates and assumptions, and provide an estimated ROI based on three different levels of charge out rate (similar to 2019).

3.1 Working assumptions inputted to the model

- Apprentices spend one day per week in college for 36 weeks per year, and for the remaining 16 weeks of the year, that additional day is spent at work.
- It is assumed that all businesses responding to this research have apprentices that work at least 30 hours per week, which means they are entitled to 28 days' paid leave (including bank holidays).

- Based on this, apprentices are with their employer for four days per week which equates to 208 days per year ($4 \times 52 = 208$) plus an additional 16 days for the weeks they are not at college, minus 28 days of leave, equating to 196 days they are with their employer per year.
- Apprentices can only generate returns (unskilled and skilled work) for the business for the time when they are in work. The net effect is that they will be in work with their employer, generating revenue, for 196 days per year, which equates to 3.77 days per week.
- Apprentices are paid for 39 hours per week, 52 weeks per year. This includes four days with their employer (32 hours) and one day at college (seven hours).
- Supervisors work eight hours per day, five days per week i.e. a 40-hour working week.
- When calculating the costs of supervision, similar assumptions are used to when apprentices can generate returns, to estimate the proportion of a supervisor's time an apprentice will require supervision, i.e. they are based on the apprentice spending 3.77 days per week with their employer, which equates to c.75.4% of the supervisor's working week.
- As was the case in 2019 recruitment fees turned out to be so low in weekly terms that they have been ignored in the cost-benefit model.³
- We have displayed the cost/benefit for three different charge out rates (as we did in 2019) for both unskilled and skilled work. This is because employers indicated they take different approaches to charge out rates and allows the model to accommodate different scenarios based on an employer's particular situation, while charge out rates are grounded in feedback from interviewees. For instance, employers variously noted that:
 - Charge out rates are used for apprentices for both skilled and unskilled work
 - Some employers use the same charge out rate for apprentices for both skilled and unskilled work.
 - Some work is quoted on the price for the job rather than a charge out rate.

Our model ensures we can take these different scenarios into account.

A range of other costs have been incorporated based on employer feedback. These include:

- time spent on recruitment, which was used to derive a cost by using the average UK salary of £37,430,⁴ a 40-hour working week, and with the cost applied to the first year of the apprenticeship,
- course fees where 100% of fees could not be claimed back, and
- additional one-off costs associated with employing an apprentice.

Appendix A contains further supporting information relating to ROI model inputs.

³ Only one business reported paying a recruitment fee of £25 to acquire their apprentice.

⁴ ONS Employee earnings in the UK April 2024

3.2 Return on investment

Rows a to d in the table below show the average of all responses received by participating employers in relation to time spent by apprentices on different tasks, and the average hourly wage, for each year of the apprenticeship. Subsequent rows e to j outline the average weekly cost of an apprentice per year.

The result of these calculations shows that the average weekly cost for an apprentice ranges between £527 and £609 over the four years of the apprenticeship, with the first year slightly cheaper than years two, three and four. Increasing average hourly wage rates over the course of the apprenticeship are offset by lower supervisory costs.

Table 3: Average work completion, supervision and costs for employing apprentices

Row	Activity type	Year 1	Year 2	Year 3	Year 4
(a)	Time spent watching and being mentored	50%	43%	25%	12%
(b)	Time spent on menial tasks	35%	30%	27%	21%
(c)	Time spent doing electrical work under supervision	15%	27%	48%	67%
(d)	Apprentice average hourly wage	£7.45	£9.92	£11.76	£12.96
(e)	Weekly cost of an apprentice	£290.55	£386.88	£458.64	£505.44
(f)	Weekly cost of an apprentice as a percentage of a skilled electricians wage	32%	42%	50%	55%
(g)	Percentage of supervisor time spent on monitoring/training	32%	29%	20%	12%
(h)	Weekly cost of supervision ⁵	£222.41	£201.56	£139.01	£83.40
(i)	Other costs ⁶	£14.12	£9.36	£11.51	£13.66
(j)	Total weekly cost of an apprentice (j) = (e)+(h)+(i)	£527.08	£597.80	£609.16	£602.51

⁵ This calculation is based on a supervisor's mean average weekly earnings (gross) of £922. The median average is £835.

⁶ The average weekly cost which includes costs for time spent on recruitment, course fees employers cannot claim back, and other costs associated with delivering an apprenticeship.

The table below shows the calculations for an ROI which uses the average costs and times provided by responding employers and sets them against three possible charge out rates, reflecting the differing rates that employers utilise – following a similar approach to that adopted in 2019.

For low and medium charge out rates the apprentice is making money for the company by year 3, at higher charge rates they are showing positive returns in the first year. By year 4 apprentices are providing positive returns to the business at all charge out rates of between £12,024 and £27,469.

Table 4: Apprentice Cost/Benefit Model

		Year 1	Year 2	Year 3	Year 4
Weekly Costs	Apprentice wages	£291	£387	£459	£505
	Supervision and mentoring	£222	£202	£139	£83
	Other costs	£14	£9	£12	£14
	Total weekly cost of apprentice	£527	£598	£609	£603
Weekly Value	Unskilled work				
	at £20/hr charge out	£211	£181	£163	£127
	at £28/hr charge out	£296	£253	£228	£177
	at £35/hr charge out	£369	£317	£285	£222
	Skilled work				
	at £35/hr charge out	£158	£285	£507	£707
	at £40/hr charge out	£181	£326	£579	£808
	at £45/hr charge out	£204	£366	£651	£909
	Weekly Net cost/benefit of apprentice				
	Low charge out rate	-£158	-£132	£60	£231
	Medium charge out rate	-£51	-£19	£198	£383
	High charge out rate	£46	£85	£327	£528
	Annual Net cost/benefit of apprentice				
	Low charge out rate	-£8,200	-£6,860	£3,133	£12,024
	Medium charge out rate	-£2,634	-£980	£10,283	£19,911
	High charge out rate	£2,384	£4,429	£17,010	£27,469

When looking at the four-year net benefit, those with low charge rates have small net benefit of £97 to the business, whereas those on medium and high charge rates show a substantial net benefit of between £26,580 and £51,292.

The ROI model illustrates that there are potential benefits over four years for all levels of charge out rate. The figures relate to an individual apprentice completing the full course, but they also enable an employer to see what the net cost or benefit might be should an apprentice drop out of their course.

Table 5: Four-year net benefit for employers from an apprentice

Charge out rate	Net benefit
Low	£97
Medium	£26,580
High	£51,292

For comparison to 2019, the respective net benefit at lower, medium and higher charge out rates were £11,396, £34,076 and £56,756 – showing a slight decrease across all rates, but overall still a net positive benefit, and a substantial ROI for medium and high charge out rates.

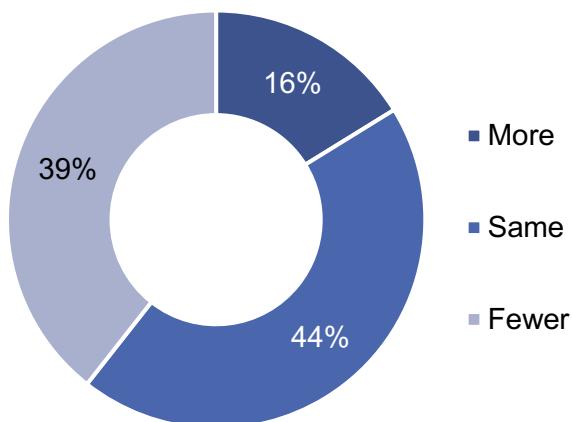
In calculating net costs and benefits much depends on the rate used by an employer to charge out an apprentice's time but also on the actual rates of pay and the true amounts of any additional weekly costs.

4. Future intentions

4.1 Future intentions around apprenticeship recruitment

Businesses were asked whether they plan to recruit more, fewer or the same number of apprentices over the next 12 months, compared to the previous year. Around half (44%) have intentions to recruit similar numbers for the next year, of which 19 are large employers, 12 medium, nine micro and four small. Just under two in five (39%) will recruit fewer, 15 of which are small employers, 14 micro, seven medium and three are large. One in six (16%) will recruit more. There are no notable variations by region.

Figure 1: Employers' apprentice recruitment intentions over next 12 months



Base: 99 respondents. Source: Pye Tait Consulting 2025.

Employers were asked to explain the rationale behind their intentions.

Same

Of the 44 employers planning to recruit a similar number of apprentices, 12 highlighted that they need a healthy supply of apprentices in order to grow the business. Eleven said there is a skills shortage, and it is their way of dealing with it. Nine will recruit apprentices to assist with an increased workload.

'We're growing our own skilled workforce and our future leaders.' – Large, South East

Other comments included that apprentices:

- are a cost-effective labour source (four),
- increase the diversity of the workforce (three), and
- can be trained in the way the business wants them to work (two).

Fewer

Of the 39 anticipating scaling back apprentice recruitment, eight mention they are at capacity for staff under current workloads, while the same number comment that they do not have the time to train an additional apprentice. Six say it is down to economic uncertainty, four already have enough apprentices. Others reason mentioned include the following.

- The planned increase in employers' NI contributions (three)
- Apprentices' wages increasing (two)
- No local courses (two)
- Prefer to employ fully qualified electricians (two)
- Poor quality of candidates (two)

More

Of the 16 anticipating increasing apprentice recruitment, seven say it help them deal with the increased demand for work, and six highlight the importance of recruiting apprentices to the growth of the business.

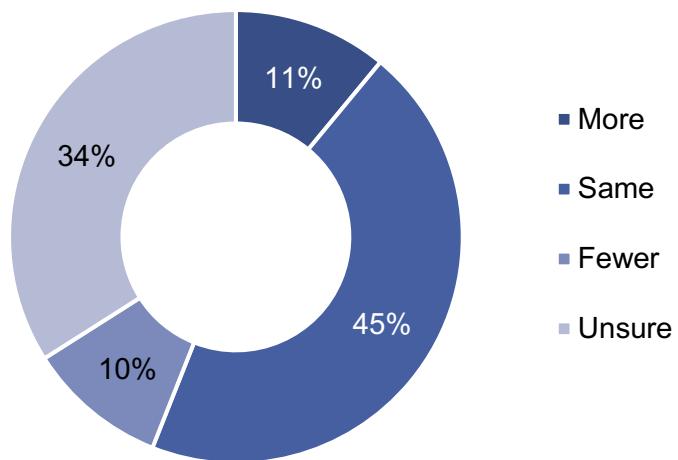
'We need apprentices in order to grow the business. They are the future of any good business.' – Large, East Midlands

Five say they are cost effective source of labour, while others mention they can train apprentices in the way the business works, while another would like to recruit more but cannot find enough fully qualified electricians to train them.

Plans for the next three to five years

Recruitment plans look more uncertain over the next three to five years. Almost half (45%) expect to recruit the same number of apprentices over this time period, of which 15 are large employers. Roughly equal proportions expect to recruit more (11%), or less (10%, of which none are large employers) compared to the last year. The remaining third (34%) are unsure what their plans will be.

Figure 2: Employers' apprentice recruitment intentions over next 3 to 5 years



Base: 93 respondents. Source: Pye Tait Consulting 2025

4.2 Value placed on apprenticeships

Employers were asked what non-financial benefits apprentices bring to their business. Of the 77 providing comment, almost half (37, 48%) said apprentices are the businesses workforce of the future.

'Eighty five percent of seniors in the group were apprenticeships originally. Apprenticeships secure future talent, succession planning.' – Large, West Midlands

Just over a quarter (20, 26%) emphasised the importance of being able to train apprentices to their standards. Approximately a fifth (17, 22%) state they are a cost effective source of labour. Thirteen (17%) mention apprentices help to improve diversity, and the same number (13, 17%) highlight they are the 'future leaders of the business'. Some reflected how apprentices:

- improve morale (six),
- are loyal (four),
- have good and different ideas (four),
- support the local community (three), and
- improve the image of the company (three).

4.3 Apprentices' impact

Responding employers explain what it would mean to the sector and to their business without a continuing health supply of apprentices, and 76 provided comment. The majority (46, 61%) stated that it would be very damaging to both businesses and the sector in general.

'It would be a disaster – the skills gap is widening as it is. The sector needs more skilled electricians.' – Medium, East England

Employers expanded on the potential extent of the impacts.

- Almost half (35, 46%) said it would lead to skills shortages.
- A fifth (15, 20%) mention there would be no new people coming into the sector to replace the ageing workforce, and five mention they would not be able to futureproof the business without apprentices.

'The average age in our company is 50-56. If we advertised for an electrician rarely would anyone aged under 30 apply. There would be a massive shortage of electricians in the future.' – Small, North East

- Ten (13%) would instead seek to employ a skilled worker which they believe would be more expensive and impact profits. Meanwhile, seven (9%) said they would employ an unskilled person and train them up which would be more expensive.
- A similar number (10, 13%) see it detrimentally impacting the growth of their business.
- Seven (9%) say they would not be able to meet customer demand.

4.4 Suggested action to sustain apprenticeships

Employers were asked what action from industry would help to ensure businesses continue to recruit and sustain electrotechnical apprenticeships, and 65 comments were received. Suggestions included the following.

- Almost a third (19, 29%) would like to see more funding available to businesses towards the costs of employing an apprentice, to encourage more businesses to take on apprentices.
- A quarter (16, 25%) would like to see an improvement in the standards of training in colleges.

'Poor courses, lack of tutors, swapping and changing of college days, course work not marked or distributed correctly, too many people in classes etc. Colleges need to work better with the students to ensure they are getting a good learning experience otherwise they will drop out.' – Small, East Midlands

- A fifth (13, 20%) say incentives could be given to electrical apprentices, such as a signing on bonus or a balloon payment on completion of the course.
- Several (eight, 12%) commented that increasing apprentices' pay will help to prevent them leaving during their apprenticeship for more money elsewhere.
- The same number (eight, 12%) stated that more could be done to promote electrotechnical apprenticeships in schools and colleges from a younger age.

- Other comments included suggestions to:
 - allow more flexibility around time in college (five) with greater flexibility around training schedules or opportunity for more bespoke courses,
 - enable more onsite mentoring from tutors (four),
 - lobby government about the planned increase in employers' NI and workers' rights (two), and
 - remove additional course fees for older students (two).

Appendix A: Supporting information

This appendix contains supporting information gathered through the research that feeds into the ROI model, with information on:

- Average time for apprentice recruitment
- Course fees
- Other costs associated with apprenticeship delivery
- Average apprentice hours spent by type of work

A.1 Average amount of time spent on the recruitment of a single apprentice

The average amount of time spent by each business on the recruitment of a single apprentice is 10.5 hours.

A.2 Course fees that employers cannot claim back per year, per apprentice

The table below displays the average course fees that employers cannot claim back for each year of the apprenticeship.

Table 6: Course fees that employers cannot claim back

	Year 1	Year 2	Year 3	Year 4
Yearly	£331	£272	£384	£496
Weekly	£6.37	£5.23	£7.38	£9.53

A.3 Other costs associated with apprenticeship delivery

Ninety-one business provided feedback on other costs associated with apprenticeship recruitment showing an average total cost over four years of £858.61, which equates to an average yearly cost of £214.64, or an average weekly cost £4.13.

A variety of costs were cited by employers including:

- PPE (33, 36%), tools (24, 26%), electronic testing equipment (22, 24%), admin (11, 12%), additional training (11, 12%), training material for college (nine, 10%), laptops (seven, 8%), travel (five), CSCS cards (three), and driving lessons (three).

A.4 Average apprentice hours spent by type of work

The table below shows – for each year of the apprenticeship – the average number of hours an apprentice spends in skilled and unskilled work.

Table 7: Average apprentices' hours spent in skilled/unskilled work each week

Activity	Year 1	Year 2	Year 3	Year 4
Hours unskilled	13.65	11.70	10.53	8.19
Hours skilled	5.85	10.53	18.72	26.13

Appendix B: Dropouts and replacing apprentices

This appendix contains information gathered through the primary research on apprentice dropouts and replacing apprentices.

B.1 Dropouts

Responding employers estimated the average dropout rate of apprentices across each of the four years, and the findings are shown in the table below, with dropout rates decreasing each year. These are similar to findings from 2019.

Table 8: Apprentice dropout rates per year of the apprenticeship

Year 1	Year 2	Year 3	Year 4
8.14%	3.36%	0.86%	0.48%

These figures compare very favourably with national dropout rates of c.46%.⁷ Depending on the charge out rate an employer's returns could vary between -£8,200 and £2,384 on the one in twelve apprentices who drop out during Year 1 (see table 4).

Reason for dropping out were provided by 46 businesses with almost two fifths (18, 39%) saying the apprentices left to earn more money e.g. labouring and supermarket jobs. Three in ten (14, 30%) reflected that individuals were either not suited to the practical nature of the work, displayed poor timekeeping, or had a general lack of discipline.

'He wasn't practical onsite and struggled in college as well. It was a mutual decision for him to leave.' – Small, Yorkshire and the Humber

A few (seven, 15%) struggled at college due to its academic nature, and found the pressure of exams too much. Other reasons mentioned included travel to work (six, 13%), the work is not for them (five), wanting to work in a different sector (three), only taking the position due to parental pressure (two), or personal issues (two).

Forty-two businesses also provided further detail on how these dropouts are impacting them. Half (21, 50%) mentioned the financial loss incurred by the business due to the cost of training, uniforms, equipment, PPE, CSCS cards and the costs associated with the time spent on recruitment.

'We've invested in their training. They've left early in their apprenticeship, and we have not had the chance to make any money out of them.' – Micro, London

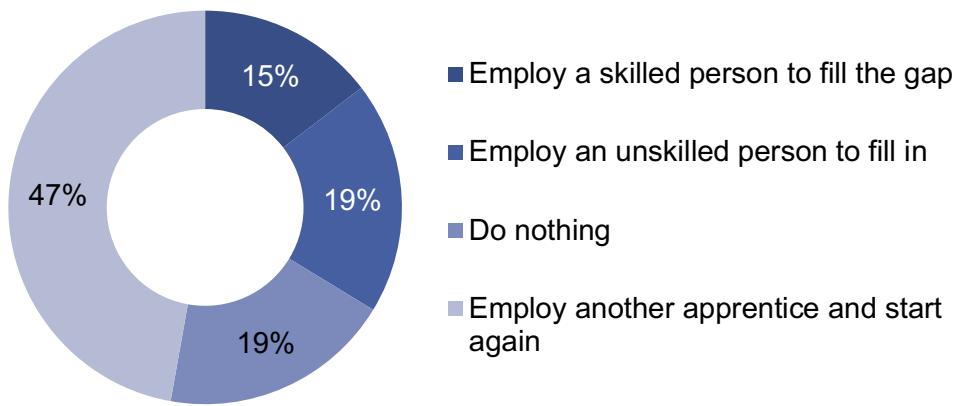
Almost half (20, 48%) highlighted the amount of time lost due to administration, recruiting, interviewing and having to replace them. Others say it impacts morale (two), remaining staff having to do more work (two), and the potential loss of customers (one).

⁷ Department for Education, Apprenticeship achievements March 2024

B.2 Replacing apprentices

Interviewed employers were asked what action they take when apprentices leave immediately on completion of their apprenticeship. Almost half (42, 47%) said they would employ another apprentice and start again when an apprentice leaves immediately upon completion of their apprenticeship, the majority of those being large (15) and medium (13) sized businesses. Some would do nothing (17, 19%), a similar proportion would employ an unskilled person to fill in (17, 19%) – most of which are small (seven) and micro (six) businesses – while others (13, 15%) would employ a skilled person to fill the gap.

Figure 3: Action taken when apprentices leave on completion



Base: 91 respondents. Source: Pye Tait Consulting 2025

Employers were asked to provide an estimated cost of the financial impact of replacing an apprentice in this situation. The average cost to the business was estimated at £6,685, and the cost associated with each course of action is displayed in the table below

Table 9: Associated costs with an apprentice leaving upon completion of the apprenticeship

Action	Base	Cost
Employ an unskilled person to fill in	17	£2,323
Employ another apprentice and start again	42	£94
Employ a skilled person to fill the gap	13	£15,264
Do nothing	17	£24,364
Average cost	89	£6,685