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#ACCELERATING ELECTRIFICATION

MARKET PULSE

FOR THE UK ELECTRICAL PRODUCTS SUPPLY CHAIN

BEAMA QUARTERLY MARKET PULSE – APRIL 2025

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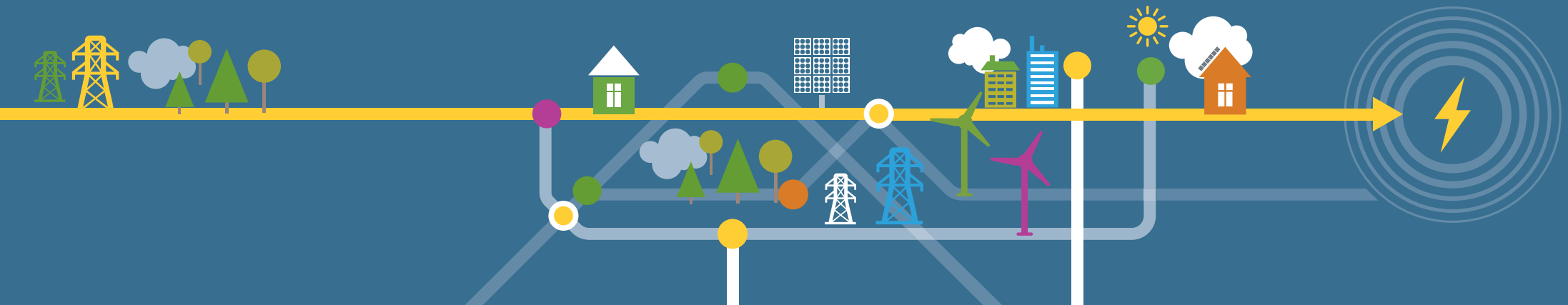
#ACCELERATING ELECTRIFICATION

Market Pulse

This quarterly review is developed and published by BEAMA, the representative trade association for energy infrastructure and systems.

Investment in the supply chain for electrical products is essential for delivering the UK's Net Zero requirement, while there is significant scope for industrial growth and job creation in the evolving electricity sector. Given the Government's pressing Clean Power by 2030 target and further challenges to come, pressure is now mounting to build capacity and ensure a cost-effective energy transition. This report is aimed at providing a measure for how well we are delivering against known targets and if we are on track to achieve the growth needed.



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Yselkla Farmer
CEO
BEAMA

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Foreword

This latest edition of Market Pulse comes at a time of both great opportunity and severe threats to the state of the UK electrical and energy products market. As we have reported in previous editions, investment in our electricity system will need to be greatly accelerated to deliver Clean Power by 2030 and electrify transport and heat. For some BEAMA sectors this could mean scaling up their production to 10 times[1] what it is today, bringing huge growth possibilities for the UK economy. At the same time, the turmoil in global trading conditions caused by a rise in protectionist approaches, exemplified by the recent imposition of unprecedented new tariffs on exports to the USA, brings enormous uncertainty to UK manufacturing.

The resilience of BEAMA's manufacturing sector has been proven through difficult times repeatedly over the decades. Most recently, the impact of Brexit and ensuring uninterrupted supply to the UK energy and construction sectors through material and component shortages in the COVID pandemic indicate the resilience of our members. There are inevitably limits to how far investment can be maintained and increased in the UK and the uncertainty generated by this global trading turmoil stretches those limits.

Where this global turmoil prompts wavering on existing Government positions and policies, it may prompt companies with UK operations but global options for investment to relocate that resource to other markets. Our survey of BEAMA members has shown that business optimism in our sector dropped dramatically as we entered 2025 in the knowledge of the disruptions to come. The single largest factor cited by our members as determining their optimism, or lack of optimism, was Government. Uncertainty over the direction of policy and regulation is consistently cited as the primary concern for investment decision-making. In addition to direction of policy and regulations, there remains a significant issue in the enforcement of well-intentioned regulations to deliver a steady pipeline of upstream equipment demand.

We currently await the publication of the UK Industrial Strategy, to which BEAMA and our members have submitted large amounts of evidence and provided workshops for Government officials. To achieve the goals of growth in Advanced Manufacturing and in Clean Energy, support for the electrotechnical supply chain and for electrification is essential. While financial support may be required in many areas to match what is being made available by other major economies, the key ask of our members is for certainty. Certainty of demand for their products, certainty of policy direction and certainty of government backing for the innovation, investment and growth they are seeking to deliver.

1 BEAMA, Energy Systems Catapult, Growing a supply chain for a net zero energy system, March 2022

Introducing BEAMA

The trade association for energy infrastructure & systems, BEAMA is the UK manufacturing representative body for the electrotechnical sector, providing leadership, expertise and independent influence in the areas of product safety, performance, energy efficiency, digitalisation and sustainability. Our activities span a broad spectrum of technology groups, from energy networks through to electrical infrastructure and service technologies in the built environment.

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Our sector

UK TURNOVER
£14 BILLION

90,000
PEOPLE EMPLOYED IN THE UK

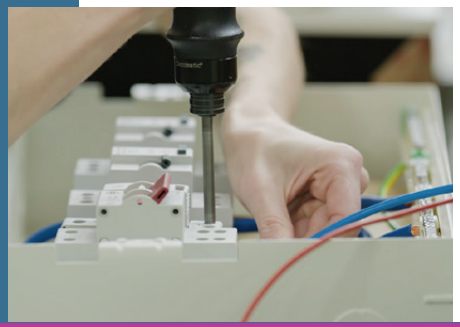
EXPORTING
£5 BILLION
WORLDWIDE

Low carbon potential

£1tn
GLOBAL MARKET OPPORTUNITY

400,000
NEW UK JOBS NEEDED BY 2050






Our members

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Armorduct cable management
ASPEN PUMPS
ATB
Atkore
atlantic
AUTEL
BRITISH BG GENERAL
EUROPA
BRISTAN GROUP
RLB
RELIABLE UK TRADING CO., LTD
CEMBRE
certas energy
chargepoint
MYSON
volution
Landis+Gyr
enviroVent
Drayton
by Schneider Electric
easee
Trilliant
LAWSON FUSES
FUNDAMENTALS
FLEXEL
FERNOX
MAKES WATER WORK
focus sb
GARO
Polypipe
legrand
gaia
Underfloor Heating
mixergy
Nu-Heat
Feel the difference
STIEBEL ELTRON
Lucy Electric
iskraemeco
BY ELSEWEDY ELECTRIC
KAIFA
Innovation Brings a Better Life
CABLEFLOW
WP
nuaire
SIEMENS
WORCESTER
Bosch Group
electrium
MITSUBISHI ELECTRIC
mira
SHOWERS
PRODUCTS
Global Source & Supply of metal Products
RWC
PEGLER
Titon
VIESMANN
geo
EMMETI
UK
GREEN BROOK
ELECTRICAL
Dimplex
resideo
Honeywell
pod POINT
EATON
Powering Business Worldwide
CSS
SUPPORT SYSTEMS LTD.
Sunamp
Versinetic
versatile ev charging solutions
PROTEUS
tepeo
TOSHIBA
Schlüter Systems
SmartElectri
Connected Solutions
VESTEL
GRUNDFOS
SENTINEL
Western Automation
RESEARCH & DEVELOPMENT
Itron
Electrorad
Advanced Heating Technology
PRYSMIAN
Professionals choose Prysmian
SICAME UK
Vaillant
zehnder
ZIP CLIP
WILSON
POWER SOLUTIONS
Zip
WATER
Schneider Electric
SECURE
uponor
hager

Our approach to data

It is important that policymakers utilise the findings of our Market Pulse in decision making. Data sources on delivery from outside of BEAMA could be improved to help analyse progress and to help our members make investment decisions. BEAMA also has a rich data history from our long-running work on member statistics, tracking trends in our industry, and publishing our globally renowned and respected Contract Price Adjustment indices.

Market Pulse provides a snapshot of a larger body of work as we work closely with Government and other key stakeholders, including utilities, to analyse our market data and build up the information we can share. Understanding the position of the UK's electrotechnical and energy supply chain is the key to devising a successful industrial strategy, to driving growth and investment in UK advanced manufacturing and to delivering clean power. Market Pulse provides the background to gaining the clarity needed for an evidence-led policy and regulatory framework.

There is a lot of data we have that can help us understand what is needed from the market today. The Future Energy Scenarios National Grid NESO database[2] is an important resource in setting the benchmark for successful delivery but data on delivery is still patchy, and in some areas, we are unable to confidently analyse progress without more complete datasets and monitoring. We comment on this in places in the report but will pick this up in more detail with Government and stakeholders going forward as we develop this work.

Modelling from our 2022 report with the Energy Systems Catapult demonstrated clearly the 6th Carbon Budget necessitates early action and the next 5 -10 years will be a crucial period of investment in manufacturing capacity for electrical products to support the energy transformation. We can therefore provide evidence that Labour's Clean Power 2030 Mission is absolutely the right way to go.

2 Future Energy Scenarios (FES) | ESO (nationalgrideso.com)

BEAMA Energy Systems Catapult – Growing the Supply Chain for a Net Zero Energy System

85%

of our members expect to scale up by

20-100%

to meet future needs, with some expecting to scale up

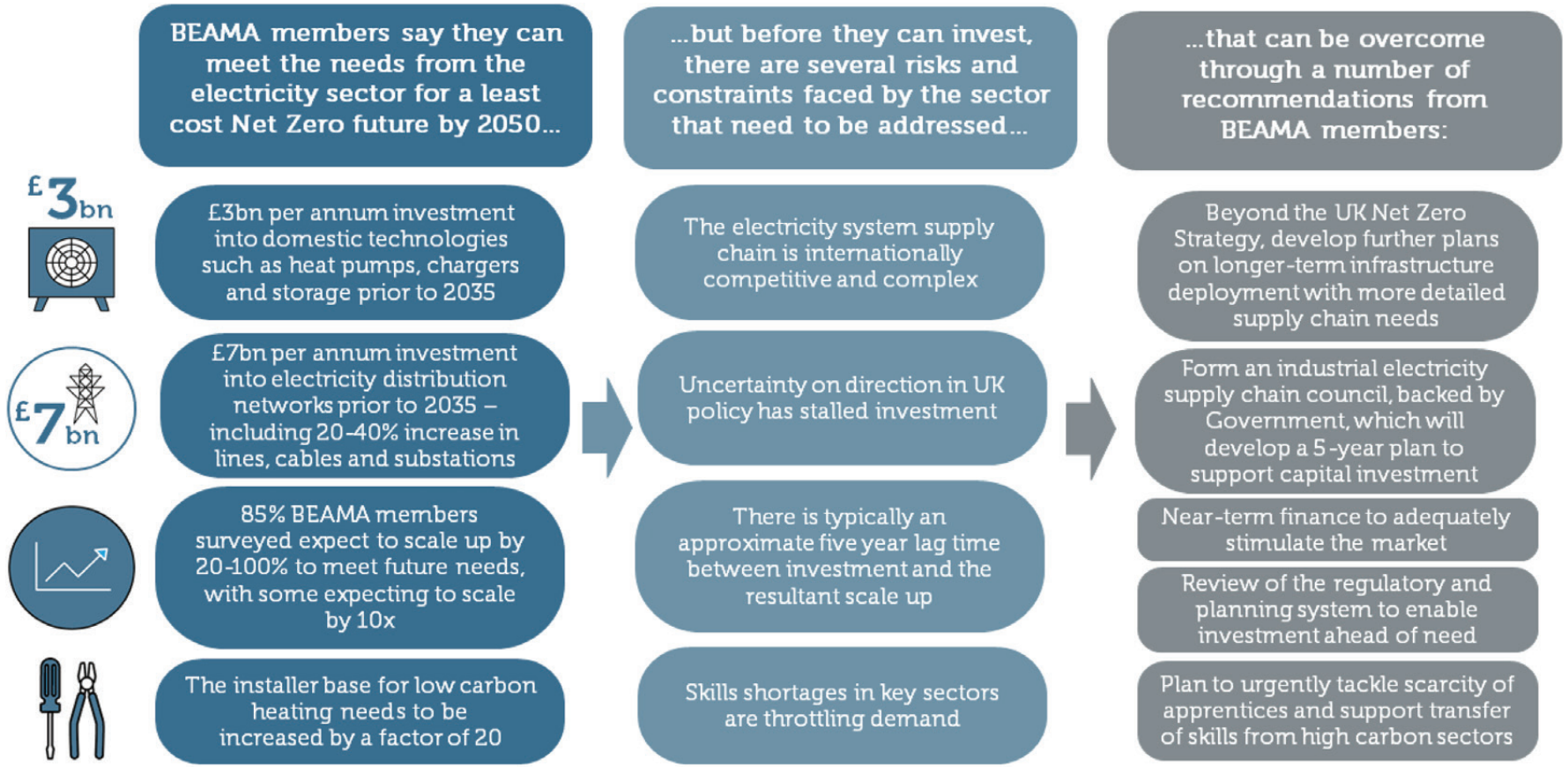
10 times

current capacity

BEAMA's modelling in 2022 shows significant investment in the supply chain will be required.

Project overview

Growing the supply chain for a Net Zero Energy System



https://www.beama.org.uk/resourceLibrary/growing-the-supply-chain.html

Policy tracker

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Immediately after July's general election, we shared with the new Government how to make great strides towards our vision for a low carbon, flexible and secure energy system, identifying policy measures that could help rectify current difficulties in the supply chain.

There has been progress on many of these policies, but most changes are yet to be implemented. Understanding the work that remains, and the close link between regulation and investment, helps to explain some of the latest findings from our member survey that are set out in the following section.

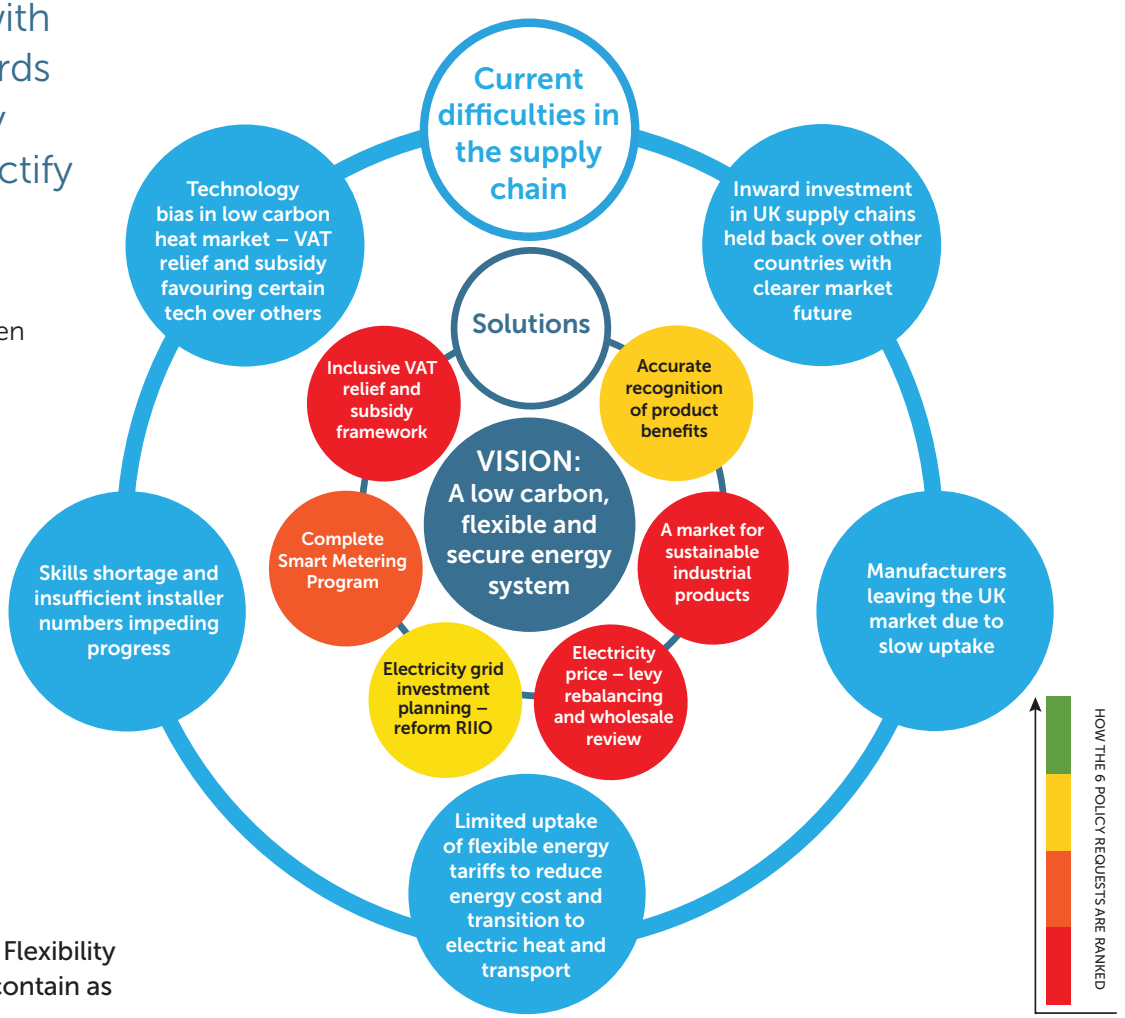
The updated diagram on the right shows where most progress is being made, and where work needs to be accelerated. If we see sustained momentum on a policy package that moves us closer to making low carbon options the best choice for consumers, this will encourage investment and we will see improvements in the indicators covered in our member survey.

This is reflected in our Industrial Strategy White Paper, which emphasised:

- Strong and clear demand is a prerequisite for investment
- Demand is heavily determined by policy and regulation
- Action is needed now to allow industry time to react to positive signals

Specific policy priorities for the next quarter should be:

- Publish a consultation on electricity pricing
- Ensure that the Warm Homes Plan, Industrial Strategy, and Low Carbon Flexibility Roadmap are published around the Spending Review as promised and contain as much delivery detail as possible
- Increase momentum in smart meter rollout, grid development, EV charging deployment and building metric improvements
- Align with BEAMA's industrial decarbonisation roadmap



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LATEST FINDINGS

BEAMA members' trends survey 2024

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BEAMA surveys members on a quarterly basis to gauge the state of the **electrical and energy equipment** industry by gathering data on sales, exports, unit costs, capacity utilisation, hiring, investment intentions and their business optimism.

The results for Q4 2024 and across 2024 provide some startling information for the industry and especially for Government in seeking to provide **Clean Power** for 2030 and to devise an **Industrial Strategy** for growth in **Advanced Manufacturing**:

- **Sales:** manufacturers report a three-year high in Sales for Q4 2024, partly attributable to the usual autumn/winter boost for heating products but still very encouraging for **growth** on the face of it. This is severely tempered though by the projection for early 2025 dropping back to below the 5-year average.
- **Business Optimism:** While this had shown a steady climb through 2024, for Q4 it tumbled to **below** the 5-year average as manufacturers foresaw a difficult 2025. The largest single factor in their reports on this, beyond all market and industry-based issues, was **Government**.
- **Unit Costs:** these had diminished dramatically as a concern over the past two years but jumped back in Q4, with **employment costs** being cited as the primary issue.
- **Capacity Utilisation:** despite some members reporting near 100%, the average remained bubbling **slightly under** the 5-year average at 76% showing the potential for growth and reflecting the disappointing immediate sales prospects.
- **Investment Intentions:** also disappointing on the 12-month forecast, hovering below the 5-year average. Much more encouraging on the 5-year view, with members planning investment in **Innovation**, citing e-business (including AI), plant & equipment, product improvement and R&D as key areas for investment.

SALES | PAST QTR | 2024 Q4

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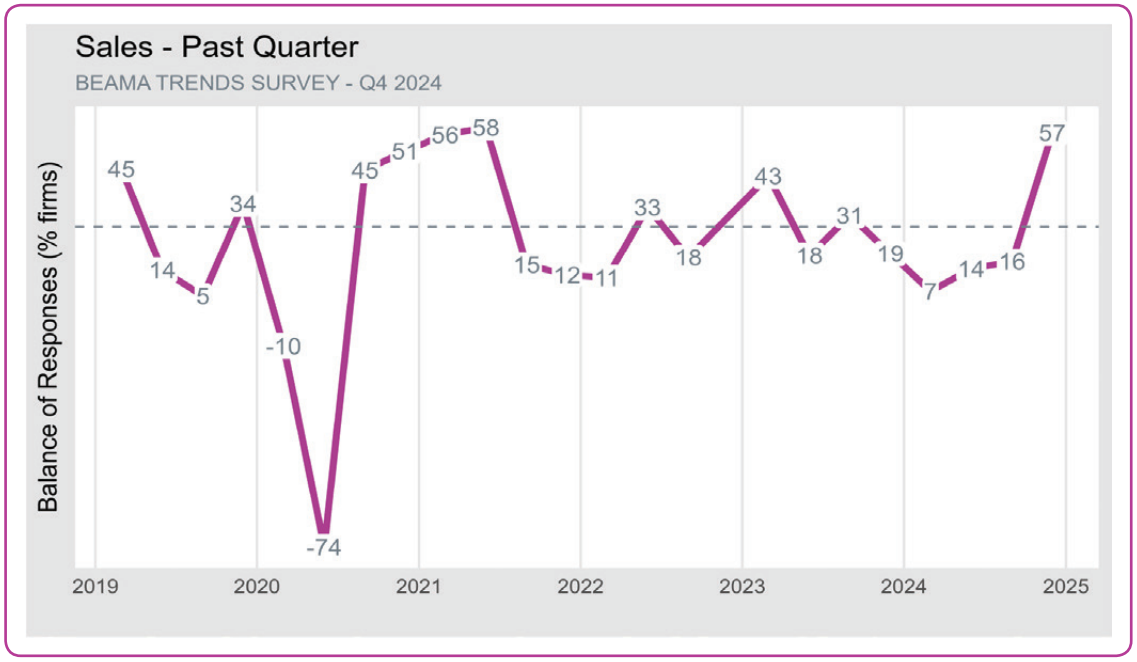
- **Sales balance jumped to a 3-year high in 2024 Q4**
- **Prospects for 2025 Q1 more moderate**

How have sales volumes during the current quarter changed compared with the previous quarter?

BEAMA members reported on balance an extremely strong sales performance in Q4 of 2024, the strongest in 3 years and effectively as strong as it has been over the past 6 years.

Members do not anticipate the same increases into 2025 although one-third expect to see further growth and just over half expect to maintain the same volume.

It is difficult to match up the strong increases in sales volume with the severe drop in optimism over business prospects into 2025. Of course, one measure is looking back and the other looking forward but the fact that so many members' optimism has dropped despite extremely strong sales performances suggests considerable disquiet over the state of markets.



Source: BEAMA

BUSINESS OPTIMISM | PAST QTR | 2024 Q4

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- **Business optimism plummeted to 6-quarter low in Q4 2024.**
- **This is despite extremely strong sales data**

Are you more, or less, optimistic than you were 3 months ago about the general business situation in your industry?

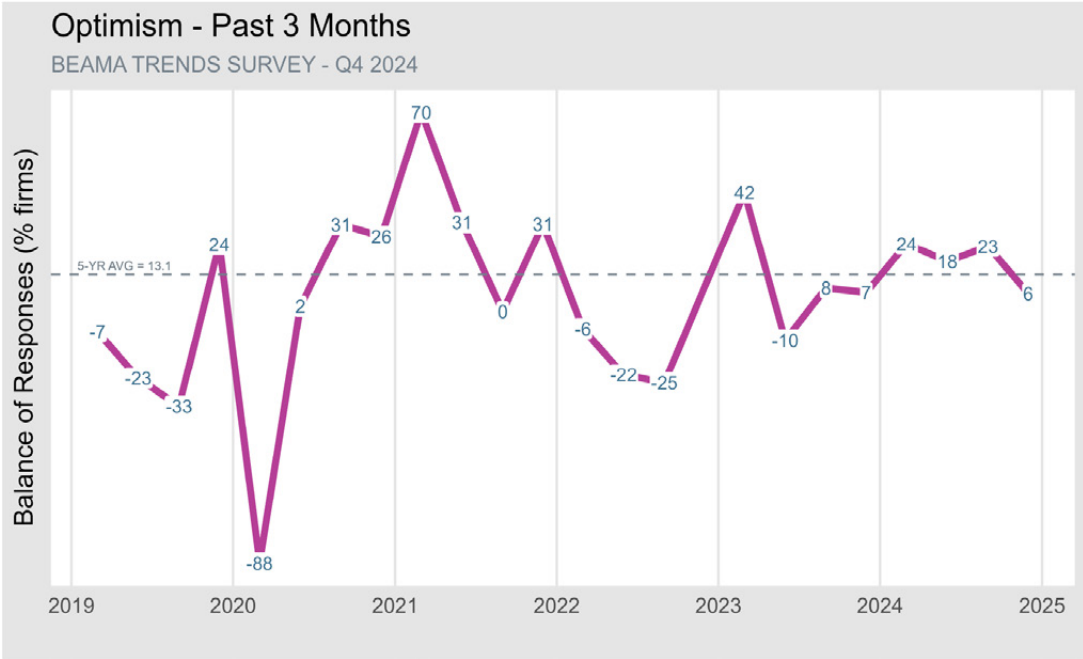
BEAMA tracks the business optimism of members. After a strong showing in the first three quarters of 2024, optimism plummeted following Q4.

Comments on the factors affecting members' optimism levels featured uncertainty over energy prices, the trade relationship between the USA and UK and government policy on environmental strategy.

Fears over the state of the Construction industry, tariffs for US and other trading and the consequences on employment costs from the Government Budget were also cited.

Those in more positive mood referenced improved Government engagement and progress on policy reviews that had previously stalled.

In our previous edition we expressed disquiet that although Business Optimism was above the 5-year average, this was a poor showing at a time when there should be a number of positive signs for our industry sector. The fact that this has now dropped below the 5-year level to the lowest figure in 6 quarters is alarming.



Source: BEAMA

CAPACITY UTILISATION | PAST QTR | 2024 Q4

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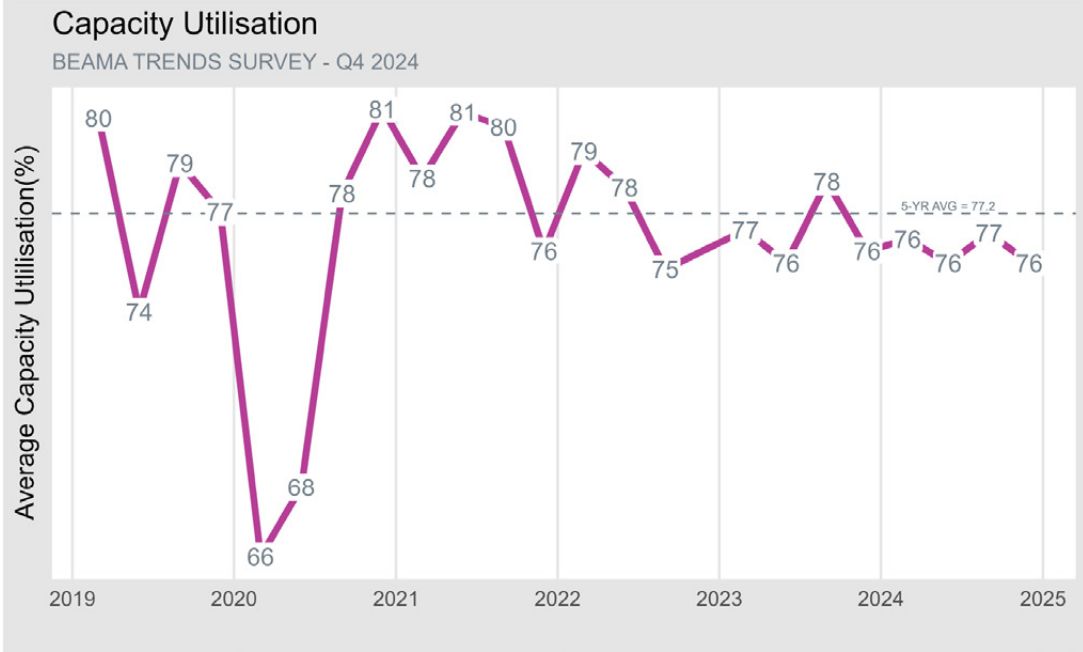
Average capacity utilisation edged lower in 2024 Q4 despite some parts of the supply chain reporting operating at full capacity

What is your estimate of the current level of capacity utilisation?

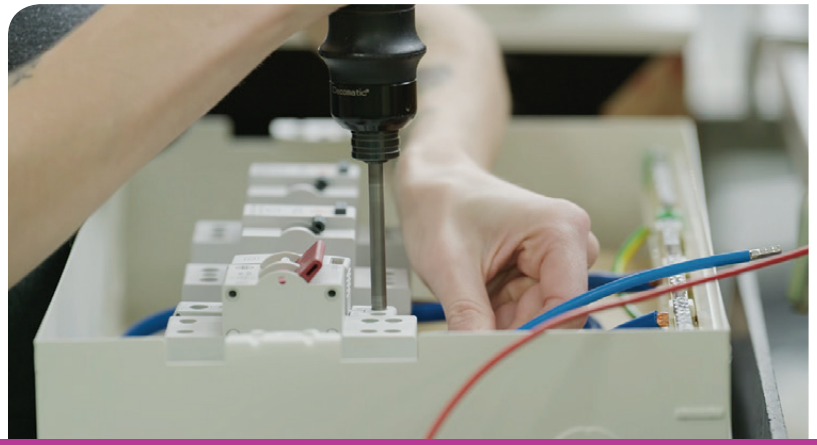
This asks BEAMA members the extent of their manufacturing capacity that is fully utilised, i.e. what scope there would be to increase production in the event of new orders arriving.

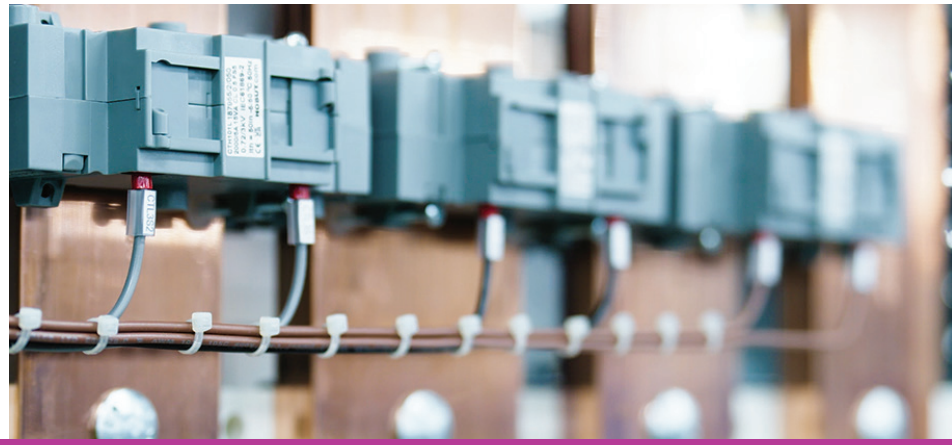
Although nearly 20% of respondents reported operating at over 90% capacity, and 55% were between 71% and 90%, this still leaves 25% at under 70%, despite extremely strong sales volumes and increasing demand in a number of sectors.

Although some members reserve some capacity for unexpected orders, the great majority do not so it is a continuing concern that overall, capacity utilisation is consistently below the 5-year average.



Source: BEAMA





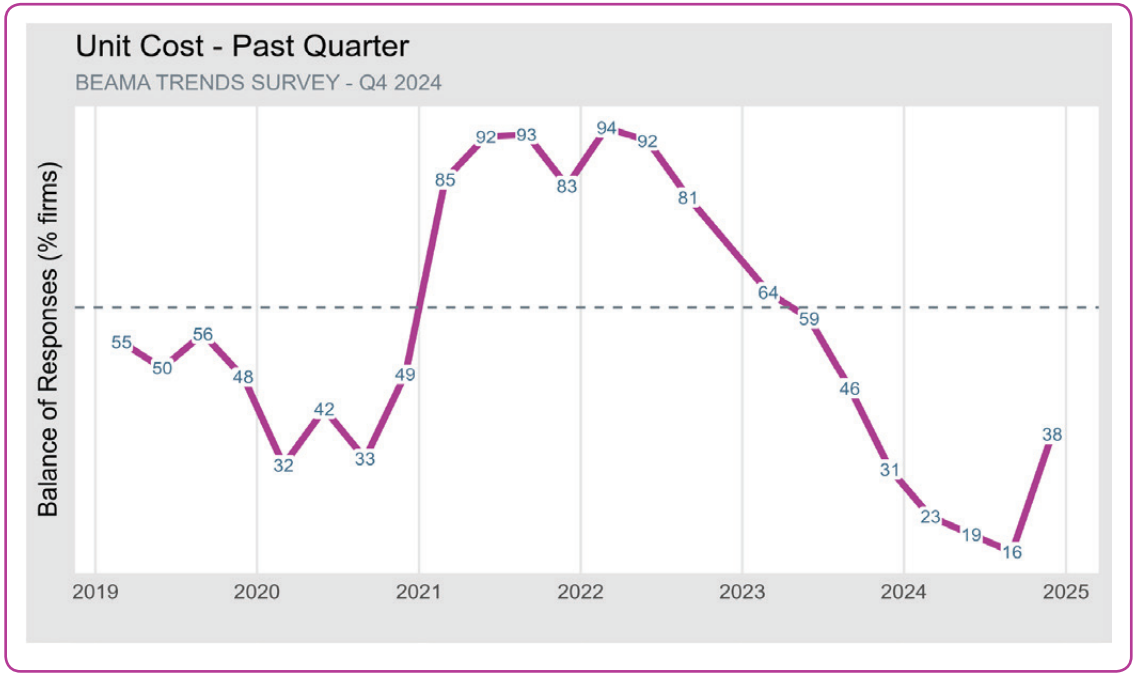
Unit Cost balance hits 5-quarter high in 2024 Q4

How have unit costs during the current quarter changed compare with the past 3 months?

Unit costs – the expenditure incurred by a company to produce, store and sell one unit of a particular product or service, can include raw materials, components, labour, energy, logistics and transport.

During 2024, unit costs had continued to drop to a new 6-year low, having been the most significant issue reported by members for 2022 and 2023. For Q4 2024, respondents overwhelmingly reported that unit costs were either rising or remaining stable, reversing this trend.

Raw material costs, energy costs and, overwhelmingly, wages and salaries were reported as showing increases and having a material impact.



Source: BEAMA

INVESTMENT INTENTIONS | NEXT 12 MONTHS | 2024 Q4

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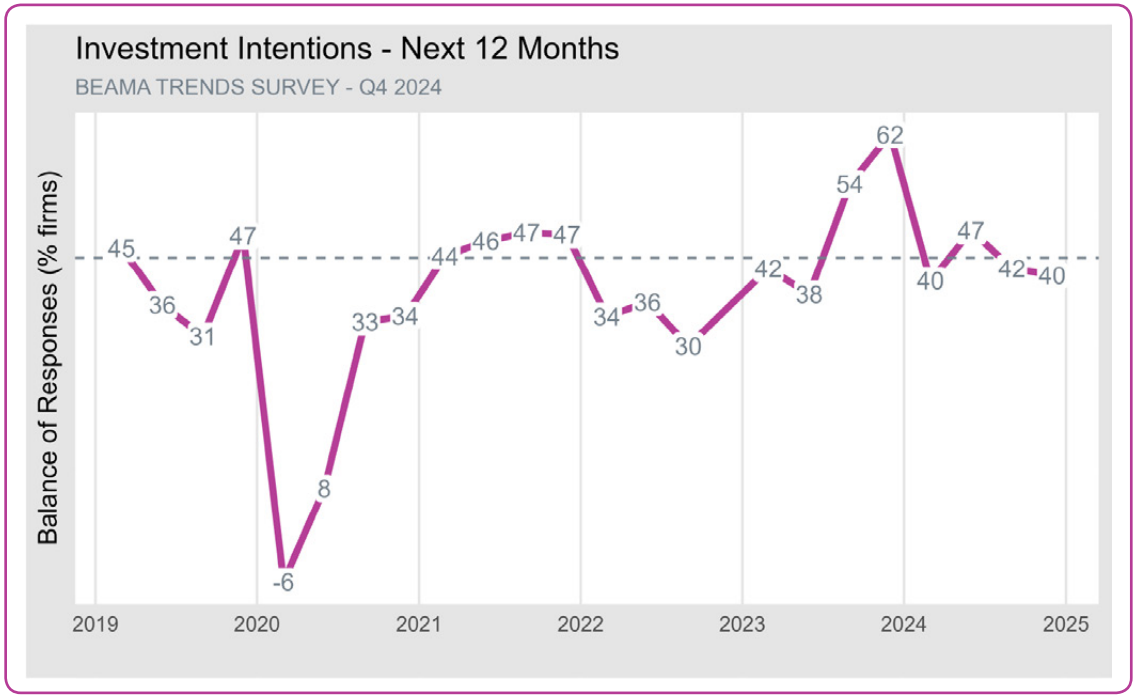
A continuing reduction in positivity for investment intentions for the next 12 months does not reflect the electrification needs for the UK. Uncertainties over demand and the assurance of future markets are hindering investment and growth.

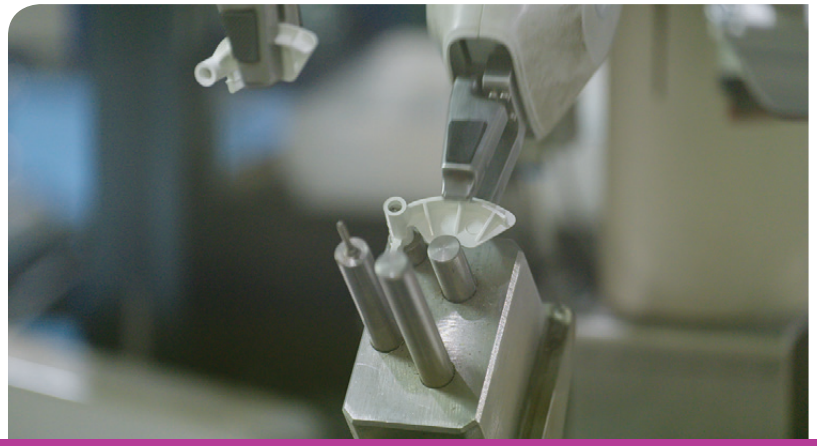


Source: BEAMA

How will your capital investment change in the next 12 months?

Tracking BEAMA members' intentions for investment in their UK businesses.

Despite strong sales volumes at the end of Q4 2024, respondents' shorter term investment intentions for the coming year remain relatively modest and on a very slight decline. This is surprising given the strong business prospects to be expected in some sectors but may reflect the sharp decline in business optimism expressed.



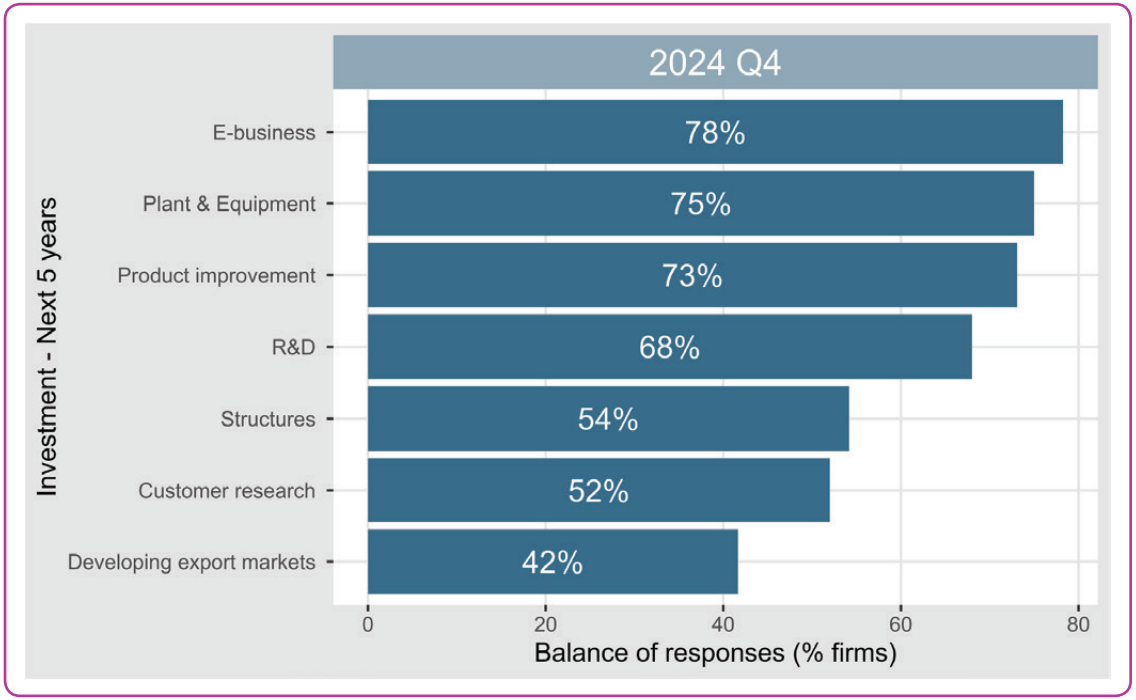
Investment intentions over the longer term show greater positivity, with a view to innovation.

How do you expect your capital investment to change during the next 5 years in the following areas?

BEAMA members report universal plans to maintain or increase investment over the next 5 years in all areas.

There has been a consistent focus from BEAMA member on R&D in recent quarters, this remains strong but there is an equivalent or greater focus on translating that into direct product improvement, upgrade of plant and equipment and especially e-business, which includes investment into Artificial Intelligence.

It is encouraging that although short-term investment prospects are constrained, the view to an innovative future is extremely positive. We need to ensure that investment conditions and incentives improve to turn these ambitions into reality.



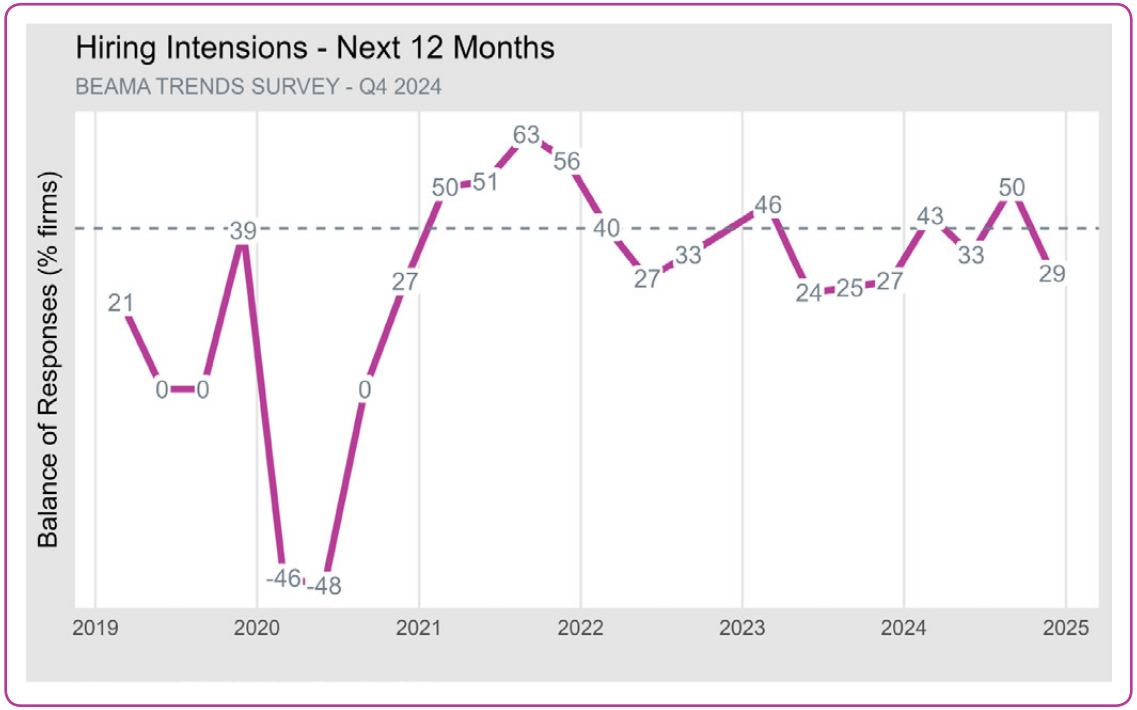
Source: BEAMA

Hiring intentions took a drop in Q4 2024 as members report severe challenges in filling vacancies and satisfying salary expectations and employment costs.

How do you anticipate your number of employees will change over the next 12 months?

Widespread challenges in filling vacancies continue to be reported as expectations took a drop in Q4 2024. Salary expectations are widely reported as a challenge and the impact of increased employment costs from government budget announcements are reported as a deterrent to employment and investment.

Skills shortage and availability of locally accessible workforce continues to be a significant challenger to growth in manufacturing.



Source: BEAMA

HEAT PUMP INSTALLATIONS

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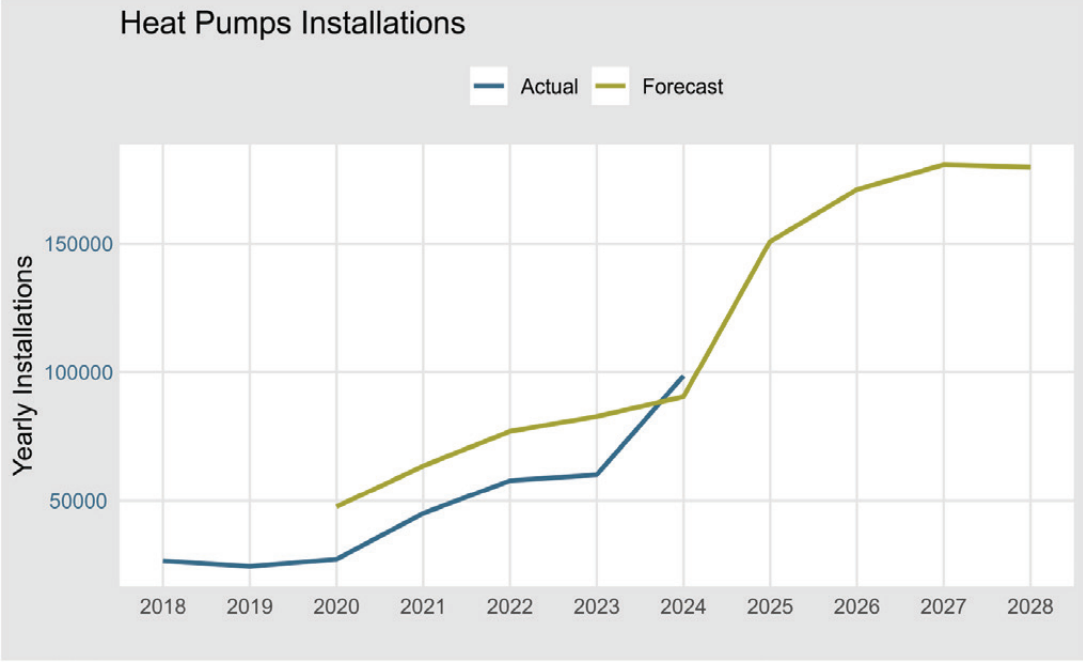
2024 saw encouraging increases in heat pump installations, pushing just above the forecasted levels required for the government 2028 target. It is unclear whether the huge jump required in 2025 for the FES forecast can be achieved. What is clear is that government support is essential to even get close.



Source: HPA/ OFGEM (FES forecast)

Actual installations reported by the Heat Pump Association

To achieve 2028 targets the UK will need to:

- Address the spark gap, i.e. the excessively high price of electricity compared to gas.
- Continue to increase the number of heat pump installers by training the same number each year until 2028.
- Simplify installation challenges including EPC reform to acknowledge fully the benefits of low carbon heating.
- Issues with the uptake of heat pumps include the currently high upfront costs of a heat pump system relative to a fossil-fuelled heating system.
- Improve incentives for consumers to install heat pumps given the high upfront costs compared to fossil fuel heating, e.g. a reduction in council tax.
- Tackle the disinformation put out in the media to create distrust in heat pump efficacy.
- Remove the myopic approach to heat electrification which discounts many thermal storage technologies and focuses on a single technology solution.

Through expanding the 'basket of heat electrification' measures, Government can offer light touch entry points for installers on their journey towards electrification and address the 20% non heat pump dwellings, and beyond.

SMART METER INSTALLATIONS

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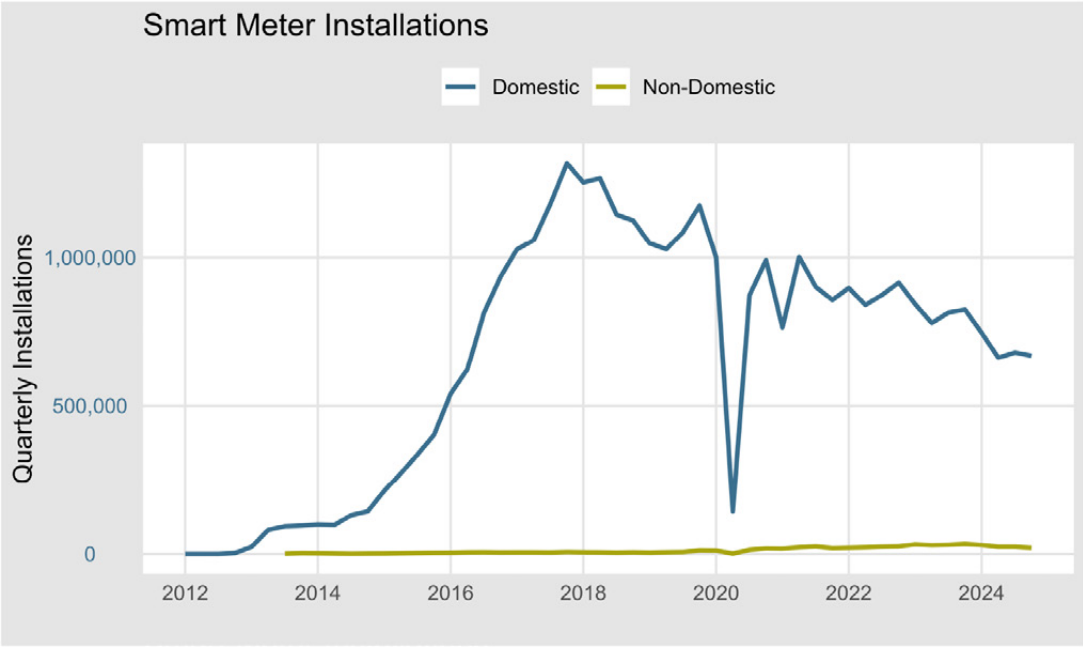
We are 11 years away from having a complete smart metering system to support a smart flexible energy system in the UK. This will not enable us to meet our Net Zero targets.

Manufacturers leave UK market due to slow down in smart meter deployment.



Source: DESNZ

The market is currently operating 1 million units per annum below expected levels.

This is approximately 25% down on what the supply chain has been told to expect and as a result we are seeing a number of companies withdraw from the UK market entirely. There are currently only a handful of manufacturers active in supplying domestic electricity smart meters. The pressures of making a highly complex product which is entirely bespoke to Great Britain, at a commoditised price, is driving long-established manufacturers out of the market.

Based on the current trajectory and rate of installations it would take approximately another 7 years to complete the rollout, factoring in additional SMETS1 meters that will need replacing to be compatible with 4G we are likely to be 11 years away from having a robust smart metering system that would support a smart flexible energy system in the UK. This will not enable the UK to meet our Net Zero targets.

The rate of smart meter installations continues to fall even as more and more technologies and stakeholders come to depend on a full roll-out to ensure take-up of smarter heating and other home electrical needs, along with the monitoring of networks by energy companies.

VEHICLE REGISTRATIONS – All Fuel Types

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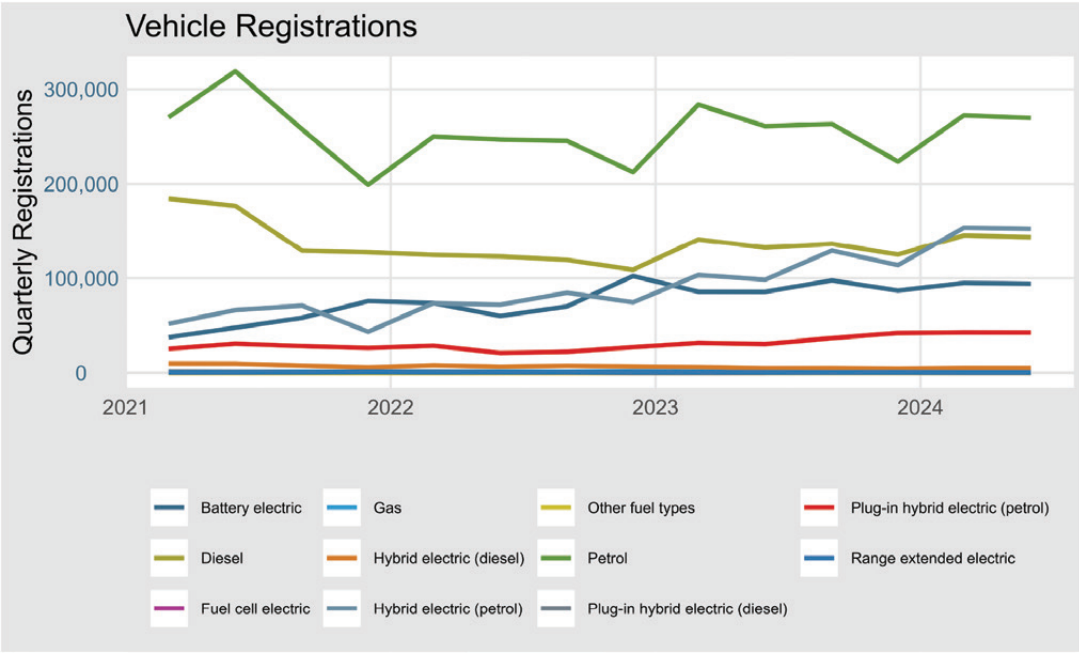
Battery EV sales are continuing to rise but take-up is still too low to assure progress to the levels required.

The proportion of Electric Vehicles sold in comparison to Internal Combustion Engines continues to increase, but at a slower pace than is needed.

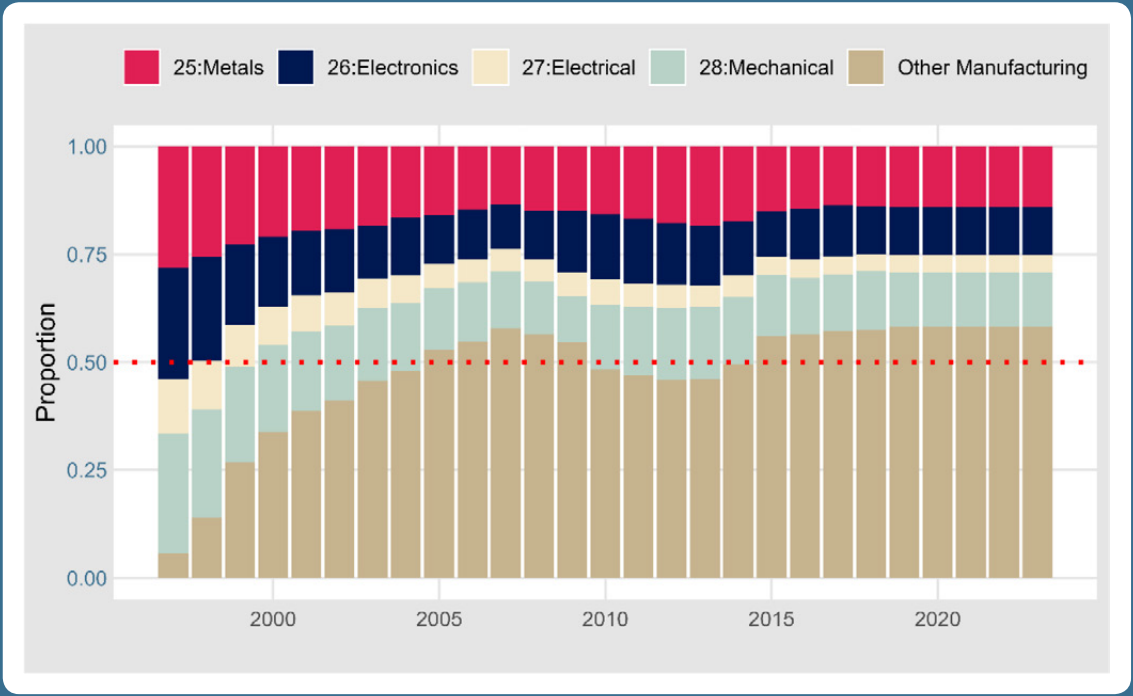
The maintenance and improvement of incentives to purchase EVs is essential to maintain growth in the market, linked to increased provision of EV charging infrastructure.



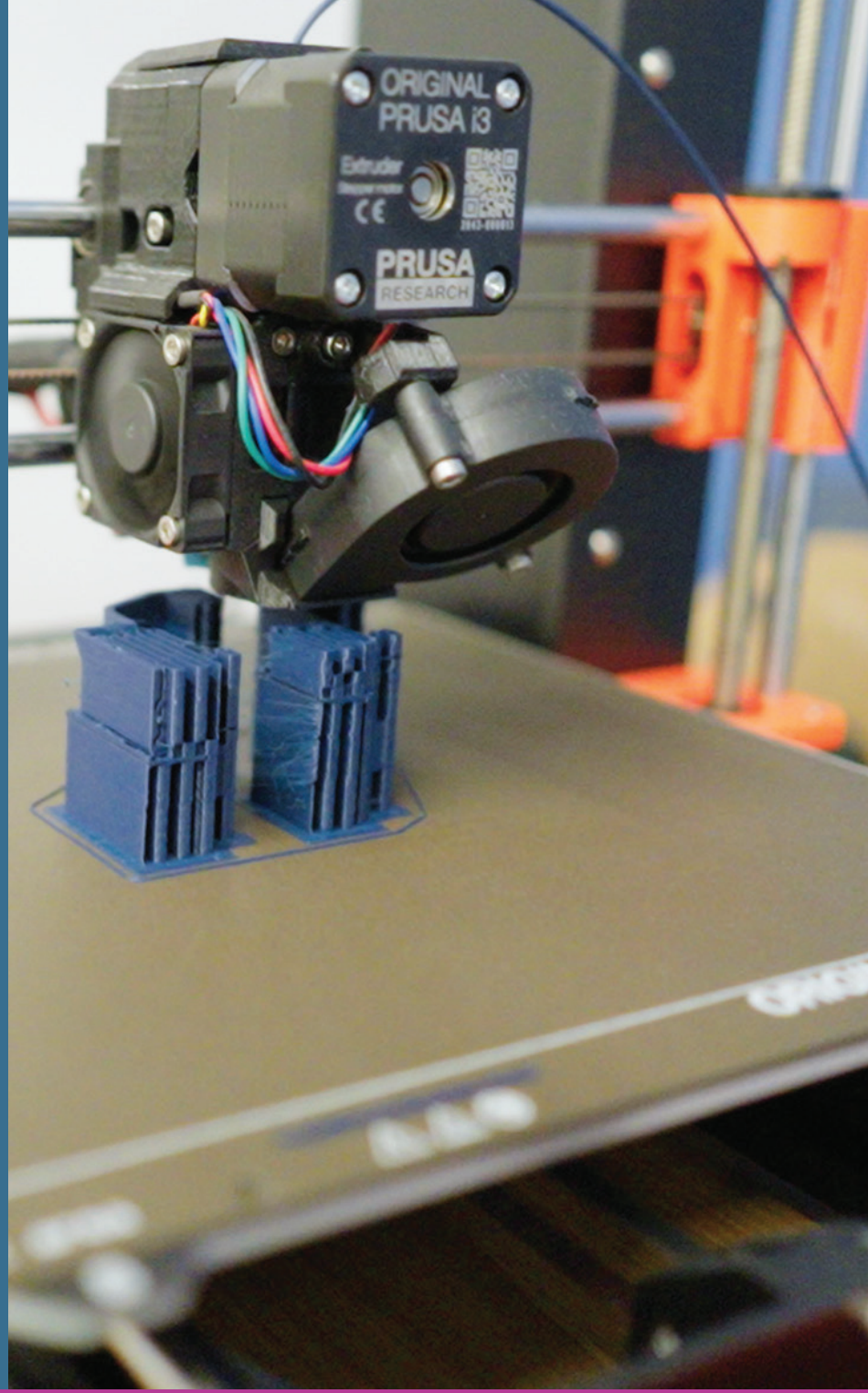
Source: Department for Transport

WEIGHTING OF PROPORTIONS OF GDP FOR MANUFACTURING

The proportion by value of electrical manufacturing in the UK has declined dramatically from 12.6% of manufacturing in 1997 to only 4% in 2023. The challenge to drive growth and improve supply chain availability is clear.



Source: ONS



Electricity Networks Infrastructure

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Investment in electricity networks as projected will have to increase significantly in the coming decades to enable the electrification of heat, transport and industry. Electricity lines, cables and substations will have to increase in quantity by roughly 20-50% by 2050, which could translate to up to £105 bn until 2035[3].

There has been an increase in confidence in the transmission network sector since Ofgem's decision to accelerate transmission network spend approvals. However, the supply chain still needs stronger and earlier signals to grow capacity. In the distribution network sector, there has been less progress because the regulatory regime and DNO procurement practices are still working on a 'just-in-time' basis, giving the supply chain inadequate signals to ramp up production.

In light of the Clean Power2030 Mission, it is especially worrying that DNOs are currently significantly underspending their ED2 allowances for reinforcement. The supply chain in the distribution sector is not getting signals to ramp up production. Ofgem should consider how it will ensure that DNOs give their supply chain improved visibility of future requirements and reinforce networks adequately during ED2. The aim should be to reinforce networks early ahead of need, to ensure the timely connection of renewable generation, EV charging stations and electric heating.

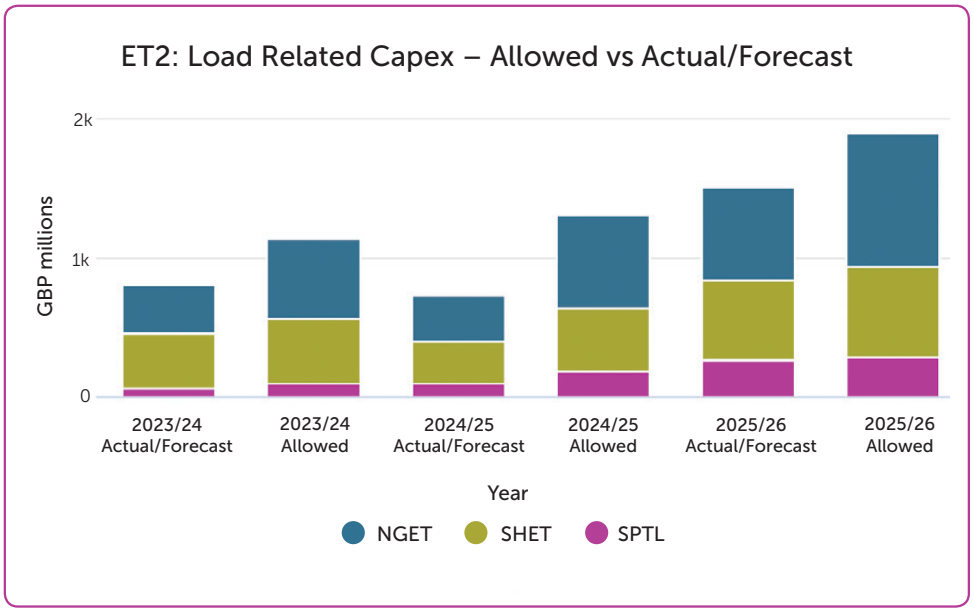
Transmission

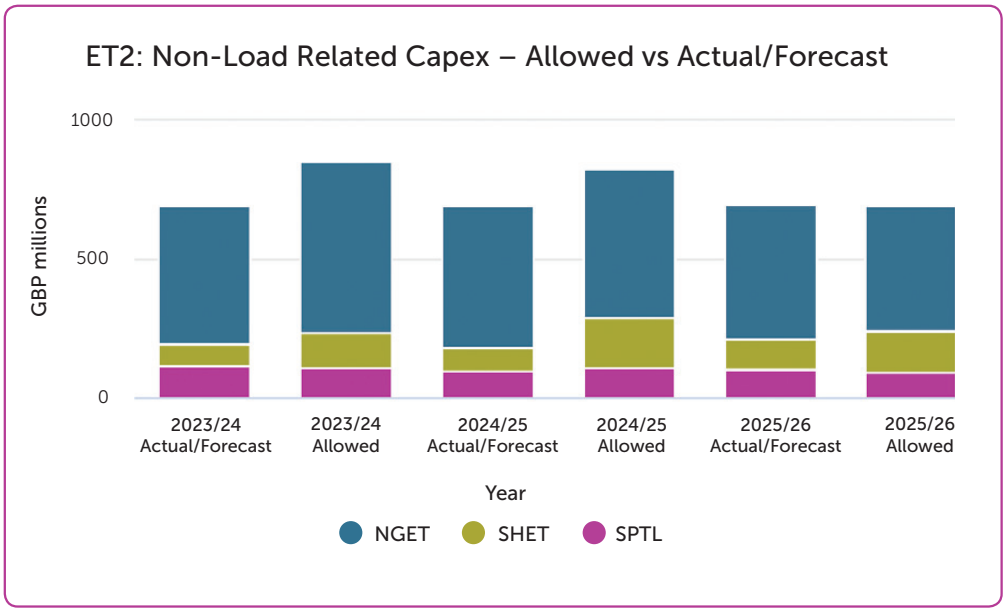
The significant growth in networks will require investment in increasing manufacturing capacity. The move to strategic transmission planning by the National Energy System Operator (NESO) and Ofgem decisions to accelerate transmission investment have given some improved confidence to the market. Further confidence in a pipeline of orders will be required for manufacturers to invest in growing capacity to meet Net Zero needs. Ofgem's decision to introduce an 'Advanced Procurement Mechanism' (APM) will hopefully allow TOs to place firm orders with the supply chain earlier.

BEAMA welcome Ofgem's decisions to accelerate the delivery of RIIO T2 and RIIO T3 investment plans through the Accelerated Strategic Transmission Investment (ASTI) programme, worth £20bn. However, in order to meaningfully compete for sparce capacity globally, and indeed drive further investment in additional capacity, TOs need to further evolve their procurement models towards truly strategic, long-term procurement with commitment on volumes of equipment. Companies must procure programmes of work (rather than procuring project by project). Ofgem's regulatory frameworks may also need to evolve further to enable this change.

3 BEAMA 2022 Growing the Supply Chain for a Net Zero Energy System

Comparing actual spend with TOs' allowances (including uncertainty mechanisms and baseline), BEAMA's data analysis shows that SSEN Transmission and Scottish Power Transmission are modestly underspending their allowances. NGET are underspending their allowances to a larger extent.





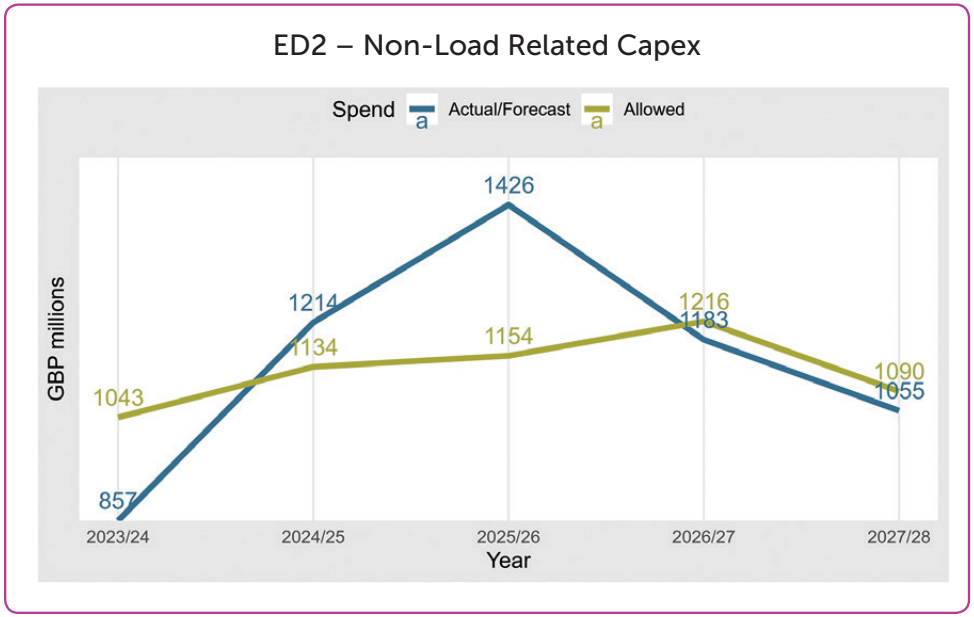
Source: Ofgem 2025 Price Control Financial Model (PCFM) ED2 and ET sectors.

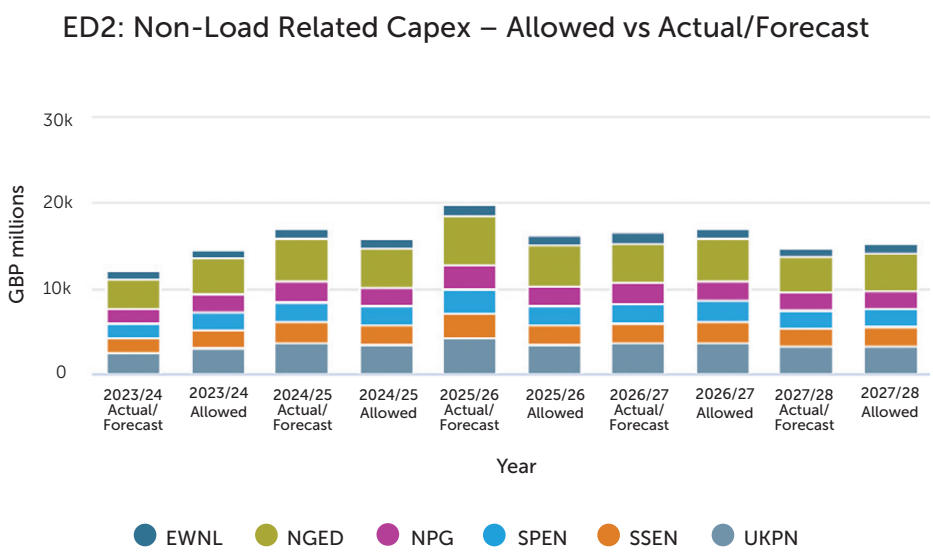
Distribution

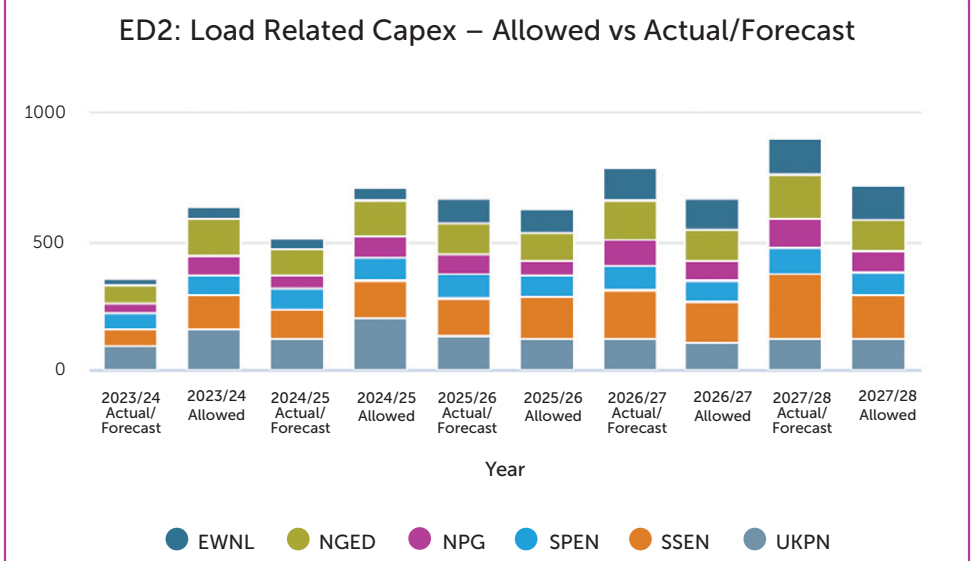
RIIO ED2 provided allowances of £2.36bn across all of the DNOS for the period 2023- 2028 for network reinforcement, alongside uncertainty mechanisms to increase and decrease allowances. In year one of RIIO-ED2, total DNO reinforcement spend averaged less than half the annual allowance. DNOs state the reasons for the underspend include lower electricity demand than forecast some areas, as well as delivery issues linked also to problems mobilising the supply chain, especially for installation of equipment[4].

It is imperative that the DNOs now begin to invest early ahead of need and give the supply chain the orders required to increase manufacturing capacity, and mobilise the workforce to install equipment. A sudden steep increase for load related expenditure could put worrying pressure on the supply chain, so investment needs to be brought forward.

The BEAMA analysis shows that DNOs are underspending load related allowances as well as non-load related capex allowances.







Source: Ofgem 2025 Price Control Financial Model (PCFM) ED2 and ET sectors.

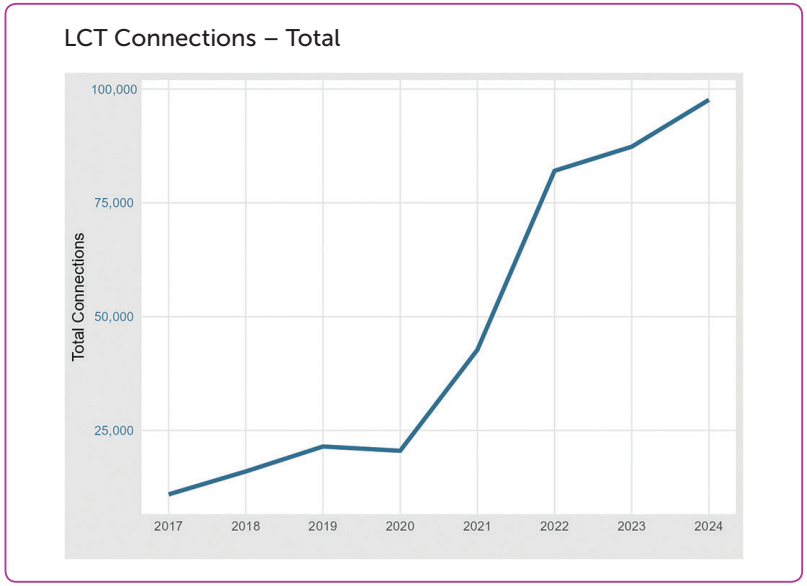
4 Historical and forecast Load Related Expenditure, electricity distribution. Ofgem 2024 Framework consultation: electricity distribution price control (ED3), published 6 November 2024, p. 38. Ofgem website https://www.ofgem.gov.uk/sites/default/files/2024-11/ED3_Framework_Consultation.pdf

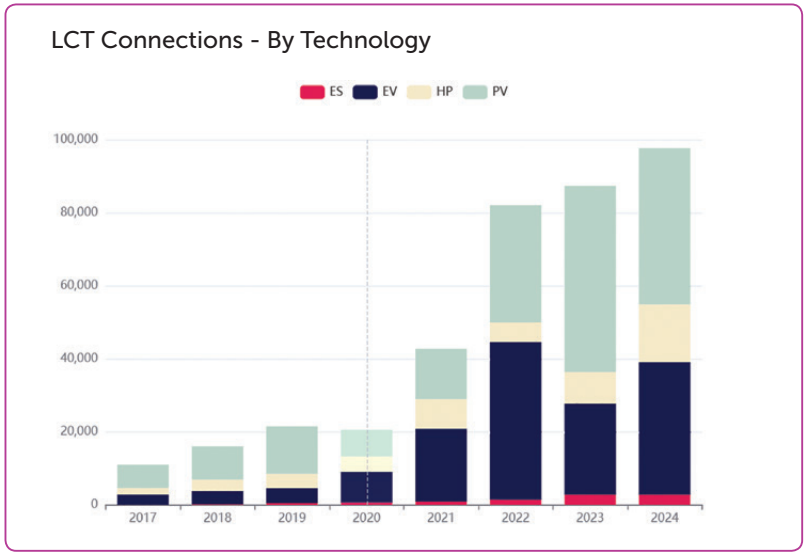
LCT connections to NGED's network are rising – or more connections are being registered

The numbers of LCT connections to NGED's network are increasing, showing the need to reinforce networks at pace to enable decarbonising power, heat, transport and industry (NGED is one of six DNOs and covers an estimated 25% of the GB network area.) It is important to note that for residential LCTs connected the numbers may not be complete, as asset registration is not 100% reliable, but it should be improving. This also means that some of the increase in monthly connections reported could be linked to increased registrations rather than actual adoption.

Better data on the connections of Low Carbon Technologies (LCTs) to the networks is important in enabling strategic planning and realistic assumptions. BEAMA fully supports the ongoing initiatives to address data gaps in LCT grid connections. However, to ensure these efforts deliver successful outcomes, greater urgency and focus are needed. Accelerating the development, implementation and integration of these projects will be critical in overcoming existing challenges, enabling timely infrastructure planning and ensuring the manufacturing sector is prepared to meet the demands of a low-carbon future.

NGED are the only distribution network operator reporting low carbon technology connections to their network at present such that it allows us to analyse the data in this manner.





Assumptions about demand flexibility

The underlying assumptions regarding load growth will likely need review. The DNOs undertook an exercise in 2018 to develop a common base for their scenarios[5] and have been publishing their Distribution Future Electricity Scenarios (DFES) annually since. DNOs and NESO are best placed to assess the overall implication of these trends for expected network demand and required investment. However, it is important to factor in realistic, evidence-based assumptions about the flexibility of HPs, to ensure that DNOs do not underestimate expected maximum demands and network loading, and as a result assume too slow a rate of network reinforcement.

5 ENA Common Scenario Report, 2018

ECA Heatmap for Electrical Apprenticeship Starts 2022/23

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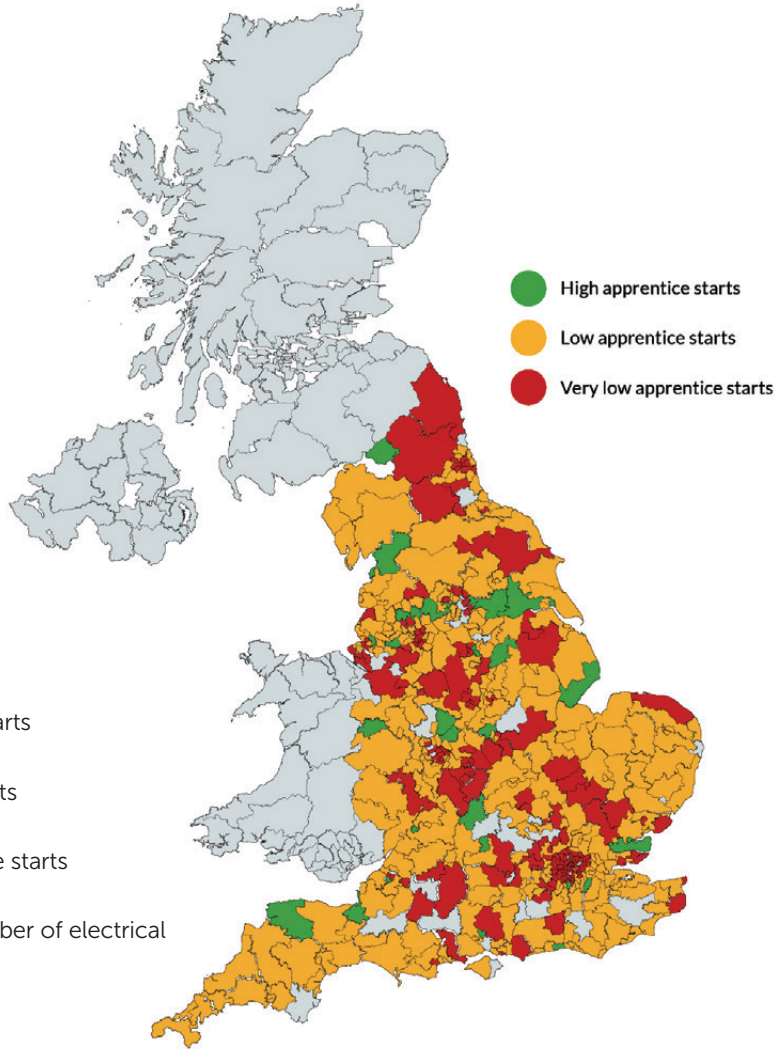

Mapping the electrical skills fault in England

- high electrical apprentice starts
- low electrical apprentice starts
- very low electrical apprentice starts

The data represents the number of electrical apprentices in 2022/2023.

**The data for the number of apprentices in each constituency is based on old constituency boundaries, which may affect the accuracy of the data, but not the ranking of the constituency itself. The constituencies which underwent significant boundary changes with a material impact on the accuracy of the data have been marked in grey.

The United Kingdom's Net Zero ambition is at risk – not due to a lack of technologies, but because of a lack of skilled electricians to install and maintain them. Electrical apprenticeship starts in England have fallen by 10% this year, and a projected shortfall of 15,000 electricians over the next five years signals that the workforce needed to deliver electrification is at risk of shrinking at the very moment it is needed most.

The electrical industry is the backbone of the Net Zero transition, yet it struggles to train new talent at the required pace and scale. The problem extends beyond recent declines in apprenticeship numbers – there is a fundamental disconnect between education and employment.

Fewer than 8% of individuals in 2024 completing government-funded, classroom-based electrical courses progress to apprenticeships within a year. This means thousands of aspiring electricians eager to enter the industry are unable to do so because the system doesn't have the capacity to support them.

The growing shortage of qualified electricians year on year, risks delaying the rollout of key infrastructure projects and technologies, including EV charging stations, energy storage systems, and heat pumps – directly impacting the UK's ability to meet ambitious Net Zero targets.

Without a stronger talent pipeline, labour costs for electrical installations will rise, making green technologies less accessible for businesses and consumers.

The Electrical Contractors' Association (ECA) has been leading efforts to close this gap through targeted initiatives; launching Recharging Electrical Skills Charter in England, the Electrical Skills Index. Using baseline data from 2023, the Electrical Skills Index shows, at a granular level just how severe the electrical skills shortage in certain regions of England. The heatmap gives a graphic illustration of the poor progression rates from classroom based electrical courses into apprenticeships within the industry.

Conclusion

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Broadly we recognise a gap between projected need and actual delivery, although in places (grid) patchy data doesn't allow us yet to fully analyse where we are against future need. Overall electrification in the real world (transport and heat) is not delivering at the speed needed to meet the 2050 target, and certainly not aligned with Clean Power by 2030 delivery.

The most significant and concerning shortfall is in the low carbon heat market, where we see a growing gap emerging between actual and projected delivery. We do not believe this can be filled through heat pump deployment alone and we need to expand the basket of heat electrification measures to reach the 20% of homes not suited for heat pump deployment at the very least – this includes the full range of heat storage solutions.

> Neglecting this and the overall need for a robust home retrofit plan across the UK will fundamentally limit progress to 2050.

Further to this ensuring the post 2025 plan for Smart Meter rollout supports energy suppliers to increase installations of SMETS2 smart meters, maintaining connection of SMETS1 and resolution to current connection issues is absolutely central to the 2030 clean energy target. We will not achieve a decarbonised energy system if we don't have engaged consumers. Currently 11 years away from having a complete working network, we are at risk of seriously delaying progress on the widespread adoption of flexible energy management which is a key enabler for electrification. BEAMA will be publishing more on this in the coming weeks.

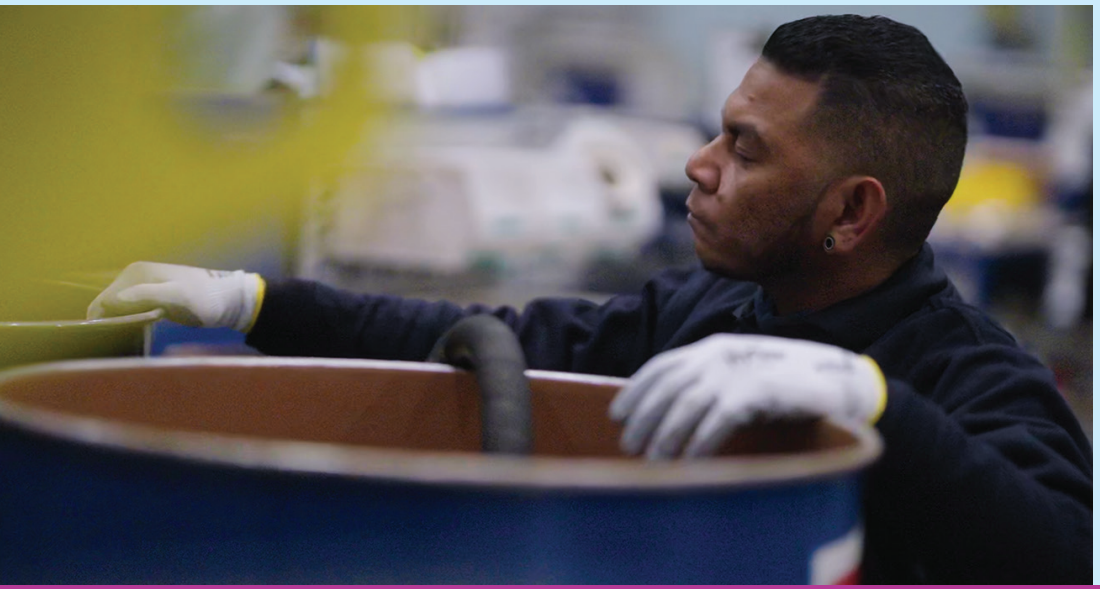
We would like to analyse electricity network investment figures in more detail and understand to which extent strategic planning and regulatory frameworks are driving network owners to invest at the ambitious rate required to enable networks ready for an electrified economy and connecting the required aligned low-carbon generation capacity. It is essential that network companies reinforce ahead of need and RIIO3 will need to encourage anticipatory investment to be fit for purpose. Anticipatory network investment will be central to avoid steep inclines in demand for infrastructure equipment that would put pressure on supply chains. Starting reinforcement early and making a steady pipeline of orders visible will allow the supply chain to prepare and invest. We do have a concern that network owners may not be planning to invest against realistic projections for electrification and required asset replacement associated with ageing assets. This could leave scope for under-investment in network reinforcement and the supply chain.

The key message for Government and policy and regulatory teams is that optimism and confidence is very far from the level required to build a growing and sustainable supply chain in the UK. Investment cycles can have long lead times and are built on a level of certainty. The particular challenge rests with innovators who have been operating in the electrification space for some time (particularly related to heat electrification) but are finding commercialisation at scale a very difficult prospect due to the slow progress with policy support and uncertainty over the construction sector outlook.

As stated in the report, the detail and implementation plans for GB Energy, the Warm Homes Scheme and other fiscal measures, the Home Energy Model, the Future Homes Standard, EPC reform and other instruments related to the built environment are now business critical. Without clarity in the lead up to the end of 2024, we foresee a downturn in optimism and possibly businesses unable to sustain their journey; a journey built on the rhetoric of successive Governments to push for an energy market transition.

> This report marks the start of what we hope will evolve into a substantial record of supply chain statistics tracking progress on the delivery of the UKs 2030 and 2050 target.

We want to ensure this starts a conversation around how we bridge the gap between projected delivery and actual figures, and the journey we need to go on to drive investment into the manufacturing supply chain. We know planning is central to the 2030 clean energy mission and as a supply chain we will continue to contribute our survey work into Mission Control. Working also through the UK Electricity Products Supply Chain Council we hope to collaborate with other Trade Associations in the sector to collate data and develop much clearer understanding of the whole supply chain today.



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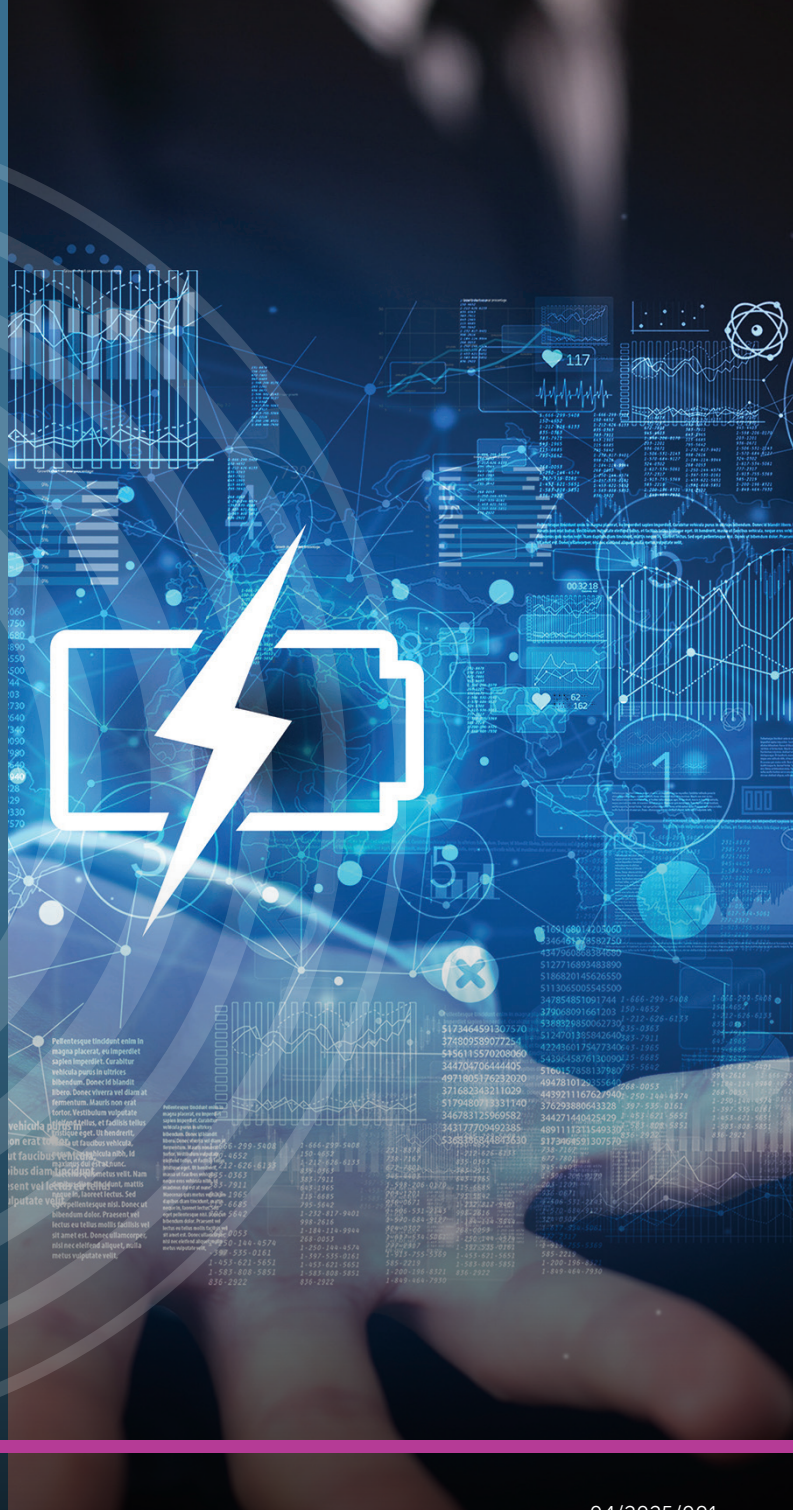
BEAMA MEMBER CASE STUIDES



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Vaillant – New Cylinder Manufacturing Facility in Derby

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Vaillant are making a £40m investment to manufacture in the UK for the UK, with future export potential, and supporting around 200 new green jobs. This will have a build period of around 2 years, converting a shell into a fully functioning manufacturing plant.

The premises are themselves heated by heat pumps, demonstrating our sector's growing active commitment to industrial decarbonisation.

The cylinders to be manufactured in Derby can be suitable for both heat pumps and gas boiler systems and include a slimline range that is especially suitable for retrofit. As such this is an intelligent investment to suit both the growing low carbon heating market and the fossil fuel boiler market which will remain significant for many years to come, while customers in that segment can benefit from higher efficiency products that can futureproof their homes.

Factors influencing the investment are:

The market and policy landscape:

- The UK's commitment to the net zero transition, which requires decarbonisation of heat and continued growth in the heat pump market
- Visibility of market trends showing a rise in heat pump sales, partly driven by the Boiler Upgrade Scheme which runs until 2028
- The upcoming Future Homes Standard which is expected to require low carbon heating in new homes, and the Government's commitment to housebuilding targets
- The expected continuation of a significant market for fossil fuel boilers and significant installed base for years to come, with the need to support those customers with high efficiency products

The location:

- Vaillant's existing links to the local area, with a current plant in nearby Belper
- The expansion is planned with agility and efficiency in mind, with staff being trained in multiple roles to aid flexibility, and safety and quality control staff able to work across both sites
- The capacity enables Vaillant to be ready for a further step change in demand, which could be triggered by policies that make low carbon heat more attractive for the customer such as lowering the relative price of electricity
- Vaillant used numerous UK-based suppliers for their factory fitout, demonstrating the knock-on benefits of supporting industrial growth, and have numerous links with community organisations and social enterprises

The necessity of heat decarbonisation as a large part of the net zero transition and visibility of market trends can help to stimulate investment.

Commitment to the general trajectory is important and helpful for investment in itself; specific policy decisions can then improve the case and allow for more specific planning. This shows an important link between energy and warm homes policy and industrial strategy.

Manufacturers can be agile, and if policy gives consumers a better case to choose low carbon heat – for example with policies like lowering the relative price of electricity – they will react with investment.

Difficult economic conditions may affect consumers' choices in maintaining and repairing heating appliances. But the market is less exposed than fast-moving lower-cost consumer goods.

The Boiler Upgrade Scheme runs until 2028 – we need to avoid a cliff-edge then that could see low carbon heating sales plummet, as has been seen in continental Europe. It is not desirable to have a market continually propped up by subsidy, so we need to improve demand more structurally and sustainably.

Siemens Energy – New Panel Build Facility in Newcastle

- Construction began in February, on a new panel build facility in Newcastle and is due for completion in the autumn.
- Siemens Energy is investing over £2m to enhance production capabilities at the Shields Road site and meet increasing demand from UK&I energy customers.
- As part of the expansion, Siemens Energy in Newcastle is creating 65 new job opportunities, ranging from strategic leadership to technical roles on and off the shop floor.

> "Our expansion in Newcastle demonstrates Siemens Energy's commitment to strengthening the local supply chain and enhancing skill development in the region and across the UK. This cutting-edge facility to be operated by our Digital Grid team and will significantly boost operational efficiency and production capacity, for the supply of protection and control panels on substation projects. There is significant demand for our panels, including in the UK market, driven by the clean power mission's need to quadruple grid projects into the 2030s."
>
> ***Darren Davidson, Vice President Siemens Energy UK&I***

Siemens Electrification – New Approach to Recruitment

> Siemens Electrification has moved to a "Hiring for Potential" principle under the banner of "Scrap The CV" – we have basically moved to roles across Project Management and Engineering where we use Behavioural Based Assessment with a company called Arctic Shores to broaden the pool of candidates, many new to the industry. Because that was the purpose of our change – we were just getting this cycle of industry norms with very fixed behaviours, and often non-diverse, with challenging time-to-hire length.
>
> ***Jon Turner, Siemens***

Schneider Electric – New Manufacturing Facility in Scarborough

Schneider Electric, the leader in the digital transformation of energy management and automation, is investing £42 million in a new manufacturing facility in Scarborough, North Yorkshire.

More than 200 jobs will be created to meet the increased demand for electrical equipment to drive the UK's move to cleaner energy including renewable energy sources, electric vehicles, and intelligent, energy-efficient buildings.

The site, which is almost triple the size of Schneider Electric's existing Scarborough facility, is a blueprint for sustainable design and operations in the manufacturing industry. It is poised to become a net-zero plant and will use modern technology to reduce energy waste and maximise the use of renewable energy. It is expected to be net-zero in Scope 1 and 2 emissions when it opens in late 2025.

- 30% of the facility's energy will be produced by a state-of-the art solar energy system, with solar panels covering 50% of the roof, to ensure the building harnesses solar energy efficiently
- Any energy consumed on site from the national grid will be "renewable certified"
- An intelligent Building Management System, based on Schneider Electric's EcoStruxure platform, will ensure energy-efficient operations including light sensors, automated heating and cooling
- It will feature one of the first fully electric paint lines in Europe to support decarbonised operations
- It is targeting a BREEAM 'Excellent' rating, setting it apart in terms of sustainable construction standards

The site is designed to be environmentally friendly, with sustainable transport options for employees.

- Employees will have access to 30 EV chargers on site
- There will be dedicated cycling racks, shelters, and showers on site for bike riders
- Work is underway with Natural England to create a habitat for protected species
- It will promote biodiversity by retaining as many of the existing trees and natural features as possible

Scarborough is a long-established manufacturing base for Schneider Electric, currently employing 450 people. It specialises in the manufacture of low-voltage switchgears which protect and distribute electricity and are crucial to the rollout of sustainable and energy-efficient operations such as EV charging infrastructure and net-zero buildings.

Kelly Becker, President at Schneider Electric, UK & Ireland, Belgium & Netherlands
"Sustainability is at the core of our purpose, culture and business. We're proud to be investing in and developing innovative solutions which will deliver immediate and lasting decarbonisation in the UK, while bolstering the creation of local, green jobs in Yorkshire.

The region has long been part of our operational presence in the UK, and we're excited to expand this as part of our commitment to investing in the UK's green economy. The new facility in Scarborough represents a pillar of innovation in net-zero, and one which will be an industry benchmark for the transition to sustainable, energy efficient buildings."

Business and Trade Secretary Jonathan Reynolds said:
"This huge investment from Schneider Electric will not only safeguard existing jobs but create 200 new ones. Increasing investment is a mission at the heart of this government, and our modern Industrial Strategy will help us deliver long-term, stable growth that supports skilled jobs. Our commitment to becoming a clean energy superpower is steadfast, and investments like these in North Yorkshire make a huge contribution to bolstering the UK as a leader in energy management and automation. We're showing investors that Britain is back as a stable place to do business, helping to secure the investment needed to make every part of our country better off."

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