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The trade association for energy infrastructure & systems

#ACCELERATING ELECTRIFICATION

GROWING THE SUPPLY CHAIN FOR THE UK ELECTRICITY SECTOR

BEAMA QUARTERLY NET ZERO MARKET PULSE
DECEMBER 2024

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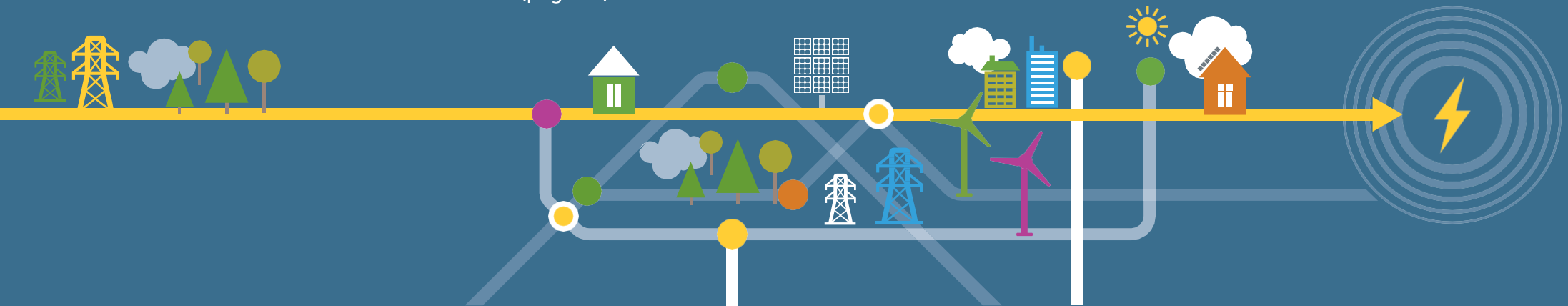
#ACCELERATING ELECTRIFICATION

Growing the supply chain for the UK Electricity Sector

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

Setting the conditions for investment in our sector and supply chain for electrical products in the UK is an essential step in ensuring we can deliver the UK's Net Zero targets. Noting the Government's 2030 target to decarbonise our power sector, pressure is now mounting to ensure we can build capacity across the UK supply chain and ensure cost effective delivery for the UK's energy transition. There is significant scope for growth and the creation of jobs in the evolving low carbon industrial sector. This report is aimed at providing a measure for how we are delivering against known targets and if we are on track to achieve the growth needed.

In this report:



Section 1 – Setting the scene: the Net Zero opportunity and the needs of our industry

Introducing BEAMA and the Opportunities Through Electrification

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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.

Accelerating electrification is a fantastic opportunity for supply chain investment, directly impacting UK GDP and job creation. Currently our sector represents a turnover of £14bn with an additional £5bn of exports[1], employing 90,000 skilled workers[2] and has the potential to address a £1tr global market opportunity[3]. This is estimated to lead to 400,000 new jobs by 2050 across multiple disciplines[4] but this will only be realised if we:

- **Build consistency and fairness in policy and regulation.**
- **Consider the wider electrification technology potential for the built environment.**
- **Accelerate investment in critical network and built environment infrastructure through regulatory and policy interventions.**
- **Address the 'spark gap' created by the imbalance of affordability between gas and electricity pricing.**

1 ONS
2 ONS
3 McKinsey
4 UK Govt

Yselkla Farmer
CEO
BEAMA

Foreword

Investment in supply chains will be a determining factor in the UK's ability to efficiently deliver on our climate targets. We know investment in our electricity system will be unprecedented 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[5] what it is today, and with that comes great opportunities for the UK economy. The investment requires profound changes to the way we plan, manage and design our energy system, we need to invest ahead of need and share information and data across the supply chain to ensure sound investment decisions that will drive electrification and the delivery of UK climate targets.

BEAMA has been analysing trends in our market closely for over two decades, and we know our manufacturing sector well. This helped us manage material and component shortages throughout COVID and our supply chain has continued to ensure supply to the UK energy sector despite long lead times and dramatic fluctuations in the cost of shipping, raw materials and more. We are confident in the strength of our supply chain today, but to transition to the level of demand we know to expect is new territory for us all and will require investment at home and abroad to secure capacity in the supply chain for the UK energy market. We see discussions about this ongoing in other countries around the world and the UK is one of many key energy markets with huge potential to grow. This will however place increasing demand on key raw materials and components.

We therefore want to start sharing more of our knowledge of the electrical manufacturing supply chain, and bringing this together with known statistics from other sources, including Office for National Statistics (ONS), Ofgem, DESNZ, NESO, to get a clearer idea of how we are performing against projected take up in Electric Vehicles, Heat Pumps, connections of solar and wind, take up of flexibility contracts and smart meter rollout, as well as close analysis of skills and employment needs for the industry. Our aim is that this quarterly report can provide a measure of success, a platform to share data that is publicly available and create discussion around how we can improve delivery. Importantly for BEAMA this is about providing a clearer trajectory for the overall energy transition that companies can plan and make decisions on investments against.

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

Our members

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Armorduct cable management
ASPEN PUMPS
ATB
Atkore
atlantic
AUTEL
BRITISH BG GENERAL
BGEN NEXT GENERATION ENGINEERING
BRISTAN GROUP
CEMBRE
certas energy
chargepoint
MYSON
volution
Landis Gyr
enviroVent
DosaFlo Residential Technologies
Drayton by Schneider Electric
easee
Trilliant
LAWSON FUSES
FUNDAMENTALS
GARO
NIBE IT'S IN OUR NATURE
moixa
legrand
gaia Underfloor Heating
FLEXEL
FERNOX MAKES WATER WORK
focus sb
mixergy
Nu-Heat Feel the difference
STIEBEL ELTRON
Lucy Electric
iskraemeco BY ELSEWEDY ELECTRIC
KAIFA Innovation Brings a Better Life
CABLEFLOW
nuaire
SIEMENS
WORCESTER Bosch Group
geo
MITSUBISHI ELECTRIC
electrium
WP
mira SHOWERS
PRODUCTS Global Source & Supply of metal Products
RWC
PEGLER
Titon
VIESMANN
GREEN BROOK ELECTRICAL
EMMETI UK
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
PRYSMIAN Professionals choose Prysmian
SICAME UK
Vaillant
Gyvlon Screed
zehnder
ZIP CLIP
WILSON POWER SOLUTIONS
Zip WATER
Schneider Electric
SECURE
uponor
hager

UK manufacturers want to invest, the UK is a good place to do business, but compared to other markets the future is still unclear. We lack the market drivers for electrification and Net Zero. BEAMA members can't invest without stronger market signals. BEAMA have presented a strong case for support for our supply chain under the UK Industrial Strategy and we stand ready to work in partnership with Government to deliver this programme.

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 NESO database[6] 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 able 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.

What we hear from our members is they want to invest, the UK is a good place to do business, but compared to other markets the future is unclear, there is little certainty, and we lack clear market drivers for electrification and Net Zero overall that would incentivise customers to engage in this market.

Our members simply can't invest without stronger market signals. We want to turn the tide on this and, working in partnership, get us back in the race to Net Zero and secure investment in the UK supply chain.

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

Policy Context

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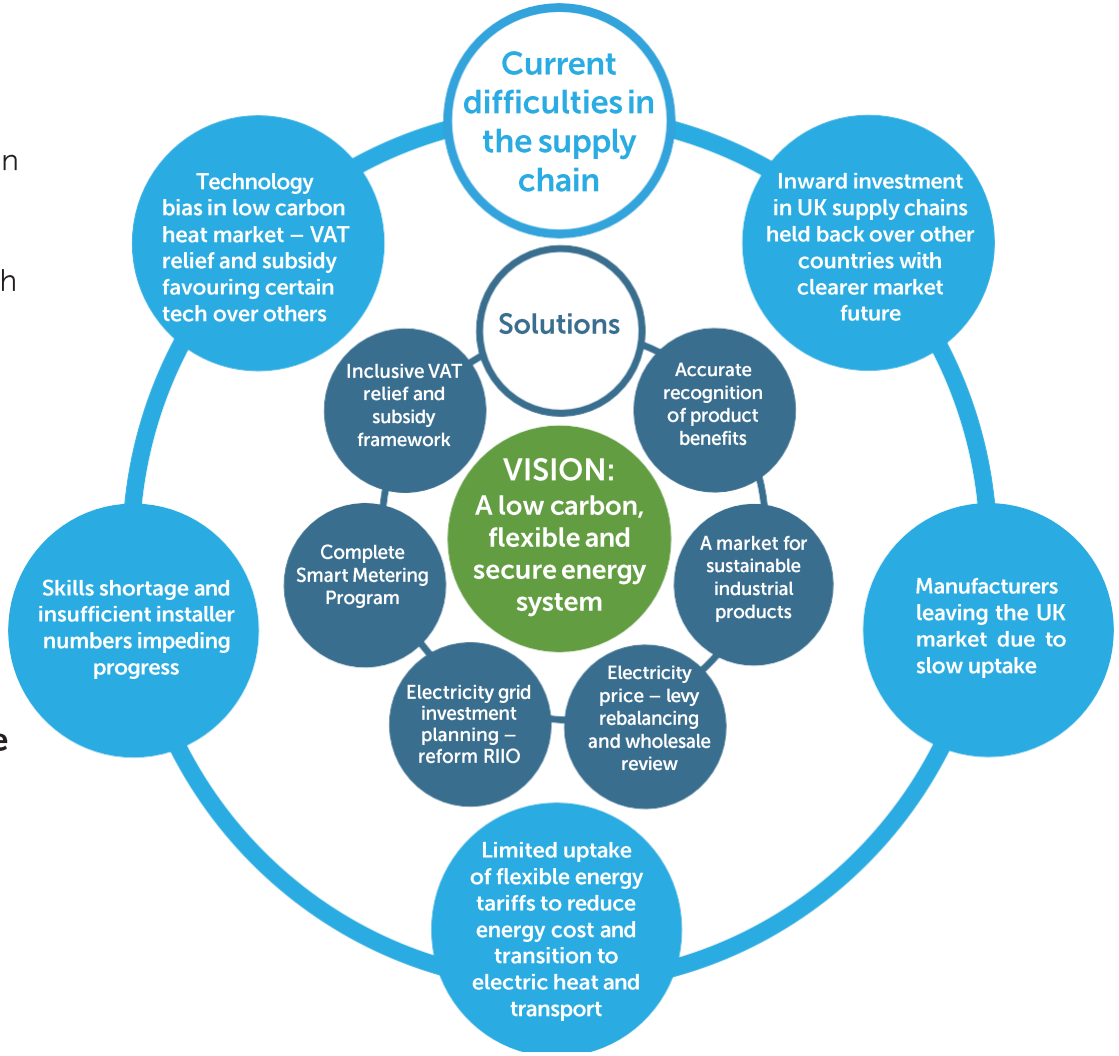
BEAMA's vision is for a low carbon, flexible and secure energy system in the UK. Government policy aims reflect a general sharing of this vision, and the Climate Change Committee's publications demonstrate its importance in mitigating climate change with the UK in a leadership role.

Accelerating electrification will be essential in the delivery of Labour's Clean Power by 2030 target, and this will be dependent on adequate investment in supply chains. BEAMA also recognises the benefits to industry and the wider economy from accelerating progress to our Net Zero targets through electrification, but to date the policy package has not been sufficient to improve the trajectory enough to give our industry greater confidence to invest. This is reflected by reports from our members that:

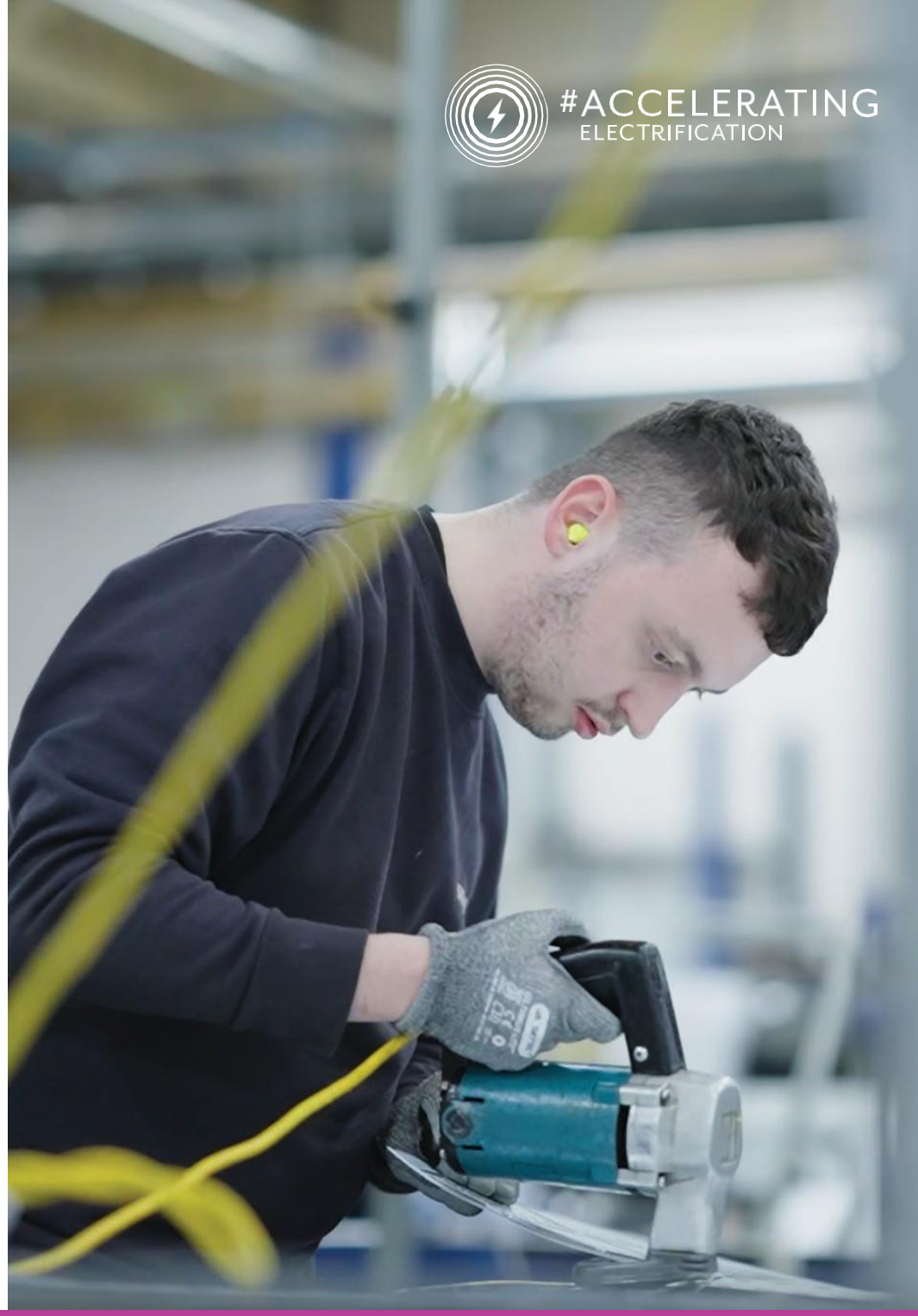
- **Other countries are more attractive for investment.**
- **In some markets manufacturers are leaving the UK due to slow uptake of Net Zero-enabling technologies.**
- **Skills shortages are impeding capacity to deploy products.**
- **In the heat market not all Net Zero-enabling technologies receive policy support and there is too much focus on a single electrification solution.**
- **Uptake of flexible energy tariffs, which allow consumers to maximise returns on investment, is too limited.**
- **There are a number of active policy barriers – both regulatory and fiscal – that are holding back the heat electrification market through market distortion.**



Given that policy and regulation is often cited as the number one influence on investment decisions made by our members, it is clear that more needs to be done. Our Market Pulse offers an important piece not only of insight but also scrutiny, and adds a greater robustness to our appraisal of policy, allowing others to also see what more they can contribute to the Net Zero transition and industrial growth.

The coalescing of industry around positive action since the Net Zero target was set by Government in 2019 was significant, so we know that targets can help. Ambitions on zero emission vehicles, clean power and warm homes are politically somewhat risky so commitment to these by the new Government should not be underappreciated. However, we aim to help policymakers better understand progress and the additional measures that can help to achieve these. We welcome the establishment of new institutions like Mission Control and Great British Energy to bring more coherence to policymaking and momentum to progress, and hope to fully engage with key decision makers.

Deliverability is all important. We cannot expect to suddenly turn on the tap a day before a target's deadline, especially when it can often take 7 years for a manufacturing business to build a new factory. We therefore hope to see steadily improving trends of network deployment, smart meter installations and EV charging capacity growth, as well a paradigm shift towards consistent retrofitting of buildings to be ready for low carbon heat. Our surveys show that our industry intends to invest, but that the extent of this is not yet transformational, capacity is not being maximised and optimism remains cautious. Concerted measures to accelerate electrification still have time to make significant improvements before 2030, but only if we understand the current trajectory and act quickly to improve it.



Growing the Supply Chain for a Net Zero Energy System

The 6th Carbon Budget necessitates early action, BEAMA and Energy Systems Catapult evidence demonstrates the Labour's Clean Energy by 2030 Mission is the right way to go.

BEAMA conducted work with the Energy Systems Catapult in 2022 which was the first of its kind to understand what the future capacity requirements would look like for the Supply Chain in delivering the UKs energy transformation. The results were profound and clearly demonstrated the unprecedented demand that will be placed on the supply chain and the opportunity we have in building capacity in the UK. Many of the barriers to investment identified in this work are still relevant today.

Our findings demonstrated clearly that meeting 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 Energy by 2030 Mission is absolutely the right way to go and we are publishing this work to support our contribution to Mission Control.

Growing the Supply Chain report Project Overview

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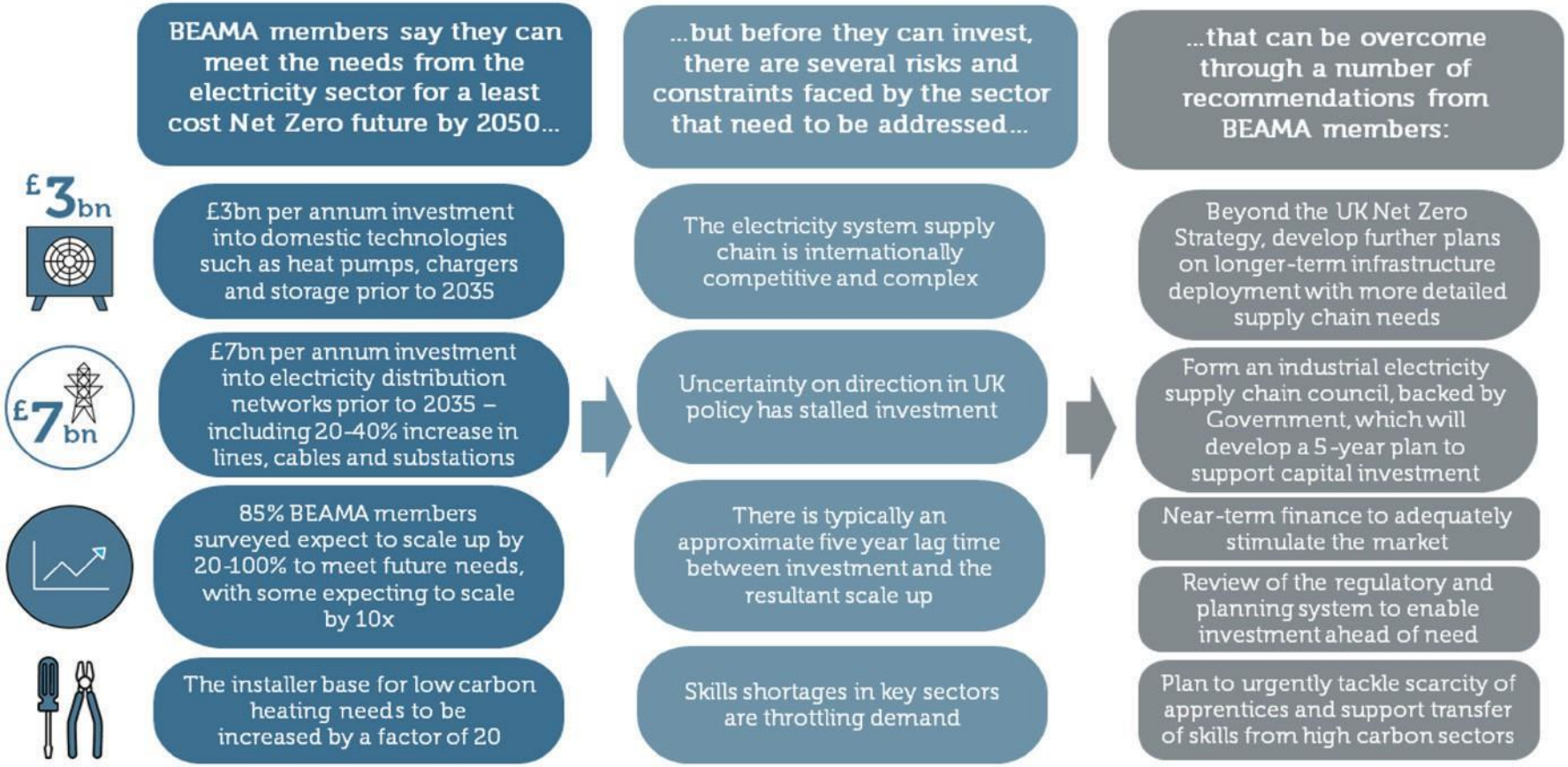

Section 2 – Latest evidence from the market

SUMMARY | BUSINESS OPTIMISM | 2024 Q3

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Business optimism growth bounced back to above the 5 year average in 2024. Electricity networks sector seeing signs of growth

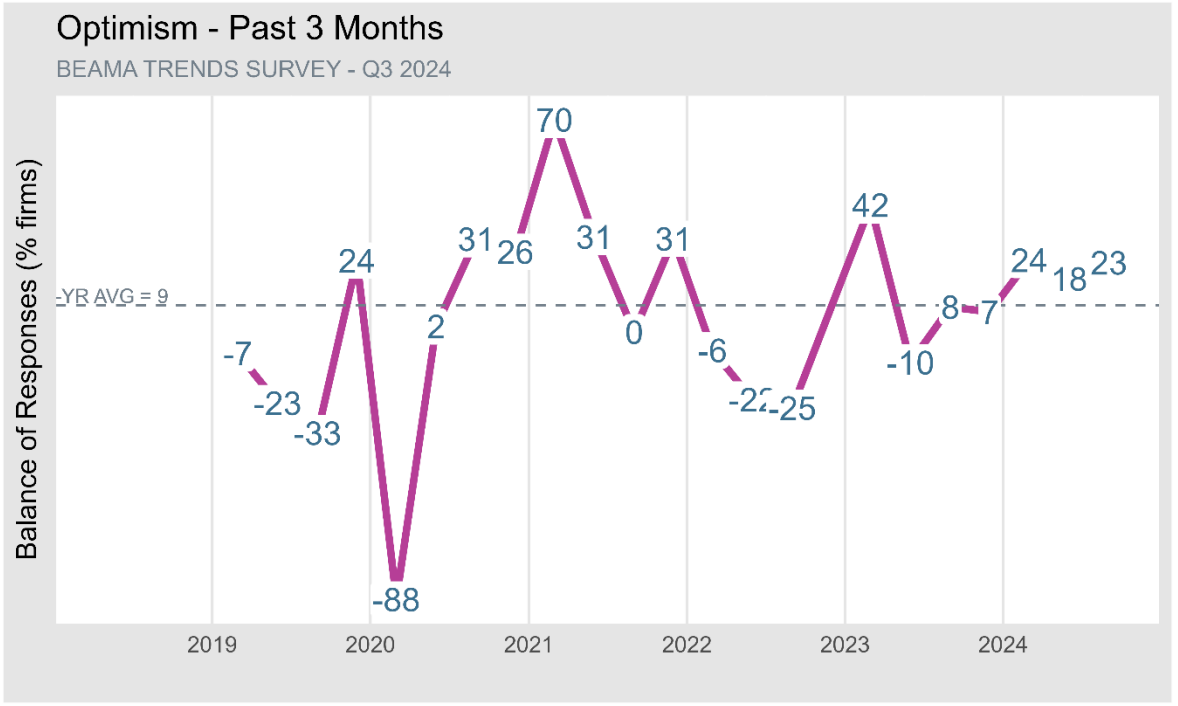
Are you more, or less, optimistic than you were 3 months ago about the general business situation in your industry?

BEAMA tracks the business optimism of members. After some low points during 2022 and 2023, optimism growth bounced back to above the 5 year average in 2024 and continued to improve in Q3.

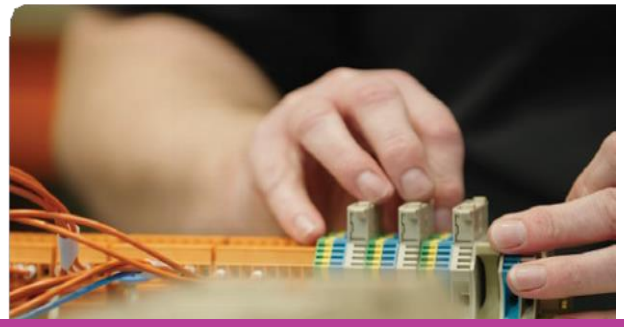
There is a split in comments between members operating in the electricity networks sector, who are seeing signs of growth and those in the construction sector who are seeing less positive prospects.

Despite a general upward trend in optimism, signals for growth and investment remain considerably behind what we would expect at a time when we should be investing heavily in the energy market transition. Also, many survey returns took place shortly before the Budget announcements and so do not take into account the effects of those changes.

It is clear that there is a great deal of work required to boost confidence generally through the provision of a clearer and more detailed framework and implementation framework for government support for energy transition and electrification. We hope that the results of the Invest 2035 Industrial Strategy work will deliver support for our industry sector, Advanced Manufacturing and Clean Power to enhance our members' optimism.



Source: BEAMA



CAPACITY UTILISATION | PAST QTR | 2024 Q3

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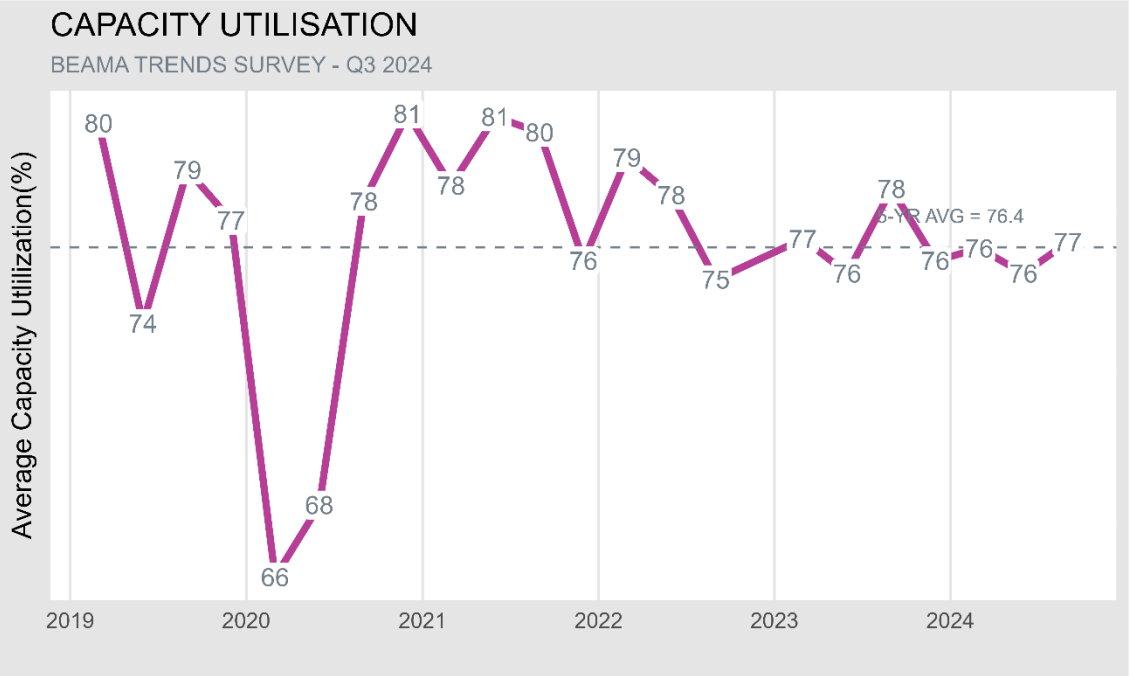
Average capacity utilisation came back to the 5-year average in Q3 of 2024. Parts of the supply chain for electricity networks report operating at full capacity

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.

Capacity utilisation came back to the 5-year average in the past quarter. While this is positive, with some sub-sectors facing high levels of demand and most (91%) members reporting that they do not reserve capacity for demand fluctuations. While members in some sub-sectors, such as electricity networks infrastructure, anecdotally report near full use of capacity it appears that others are facing weaker levels of demand. It is notable that even the COVID pandemic caused a drop in capacity utilisation of 11 points for a quarter, indicating both the high levels of resilience in those manufacturers and that increases in production tend to take many quarters to build.



Source: BEAMA

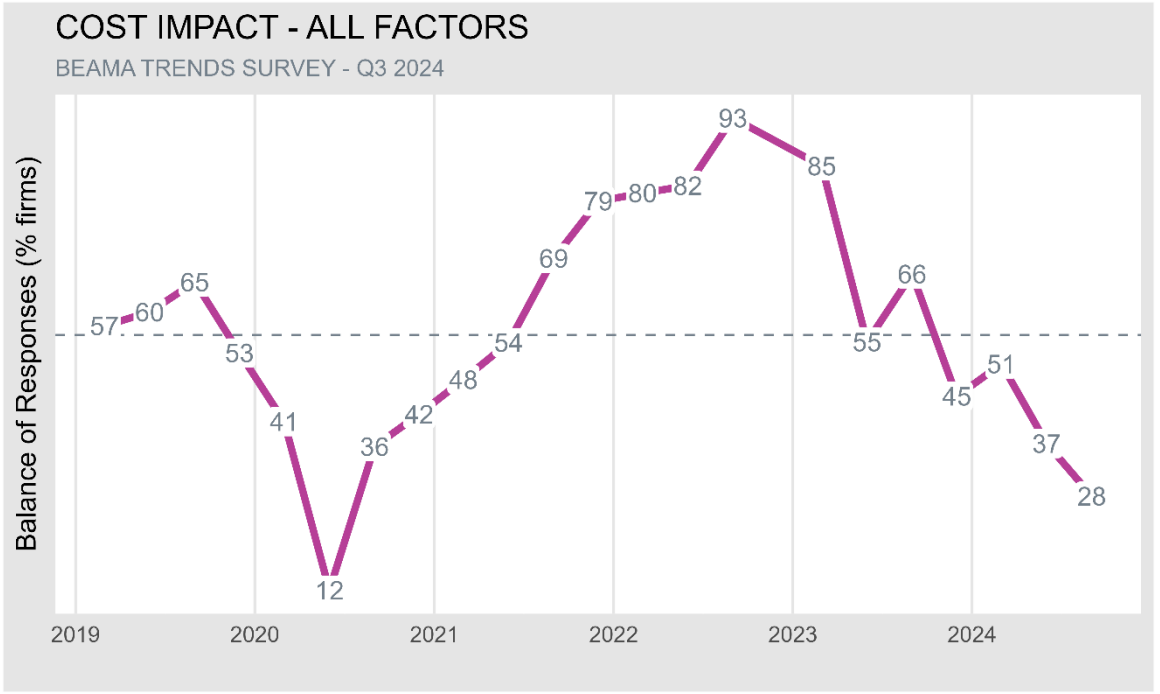
#ACCELERATING ELECTRIFICATION

Unit Cost impact continues to drop to a 4-year low.

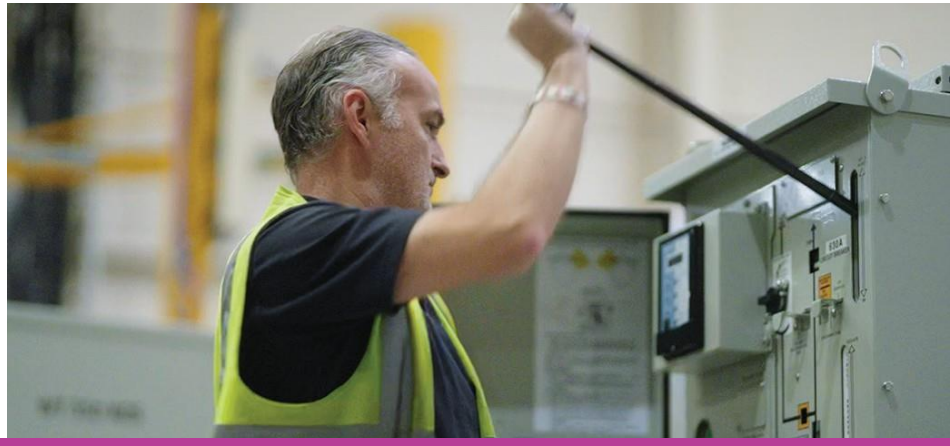
How have unit costs during the current quarter changed compare with the past 3 months?

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.

Unit costs continued to drop to a new 4-year low, having been the most significant issue reported by members for 2022 and 2023. While materials and component cost and availability issues have diminished very significantly, members continue to report problems cause by excessive costs for energy for business use and especially current salary and employment costs from wages, which will only be made worse by national insurance increases in the recent Budget.



Source: BEAMA



INVESTMENT INTENTIONS | NEXT 12 MONTHS | 2024 Q3

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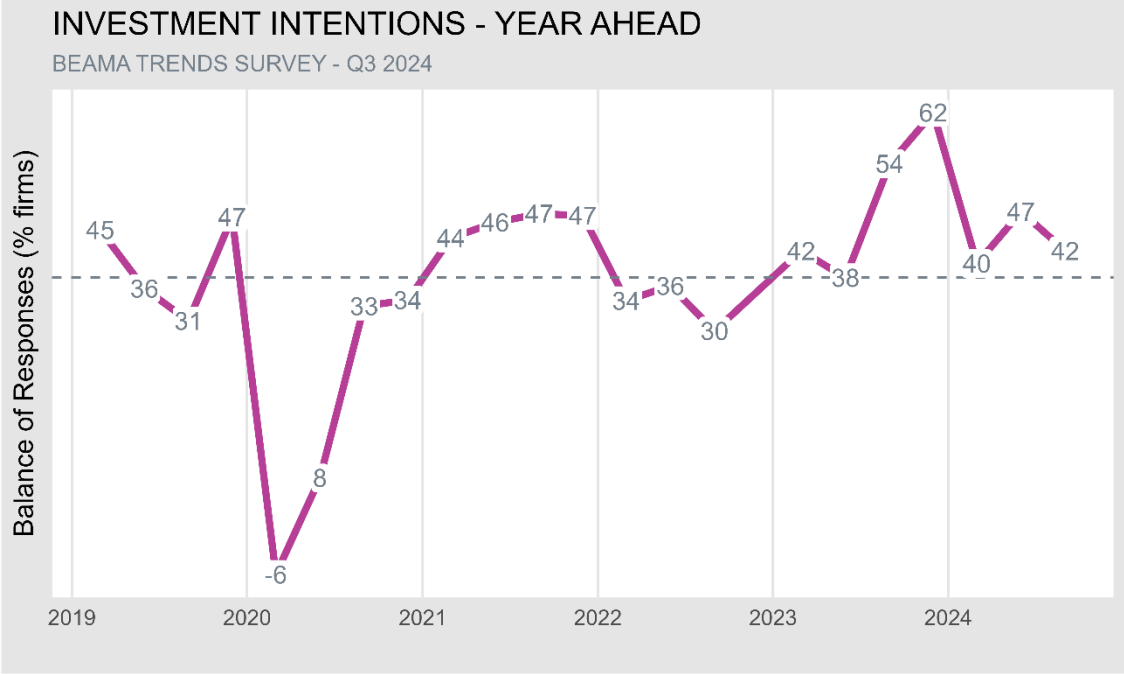
A slight reduction in positivity for investment intentions for the next 12 months does not reflect the electrification needs for the UK. Uncertainties over demand and the assurance of future markets are hindering investment and growth.



Source: BEAMA

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

This tracks BEAMA members' intentions for investment in their UK businesses.

Having had a modest uptick for Q2, 12-month investment intentions somewhat stalled in Q3, while remaining positive. This may have been partially the result of increased uncertainty following the General Election and lead-up to the government Budget announcements. Nevertheless, it clearly does not indicate the high level of increased investment that will be required to deliver sustained growth in Advanced Manufacturing or to provide Clean Power by 2030 through electrification. Reports from our members confirm that far greater certainty of demand is required and it is clear that the Invest 2035 Industrial Strategy process that is ongoing must deliver support for UK advanced manufacturing and that assurance of sustained demand to stimulate the investment levels required.

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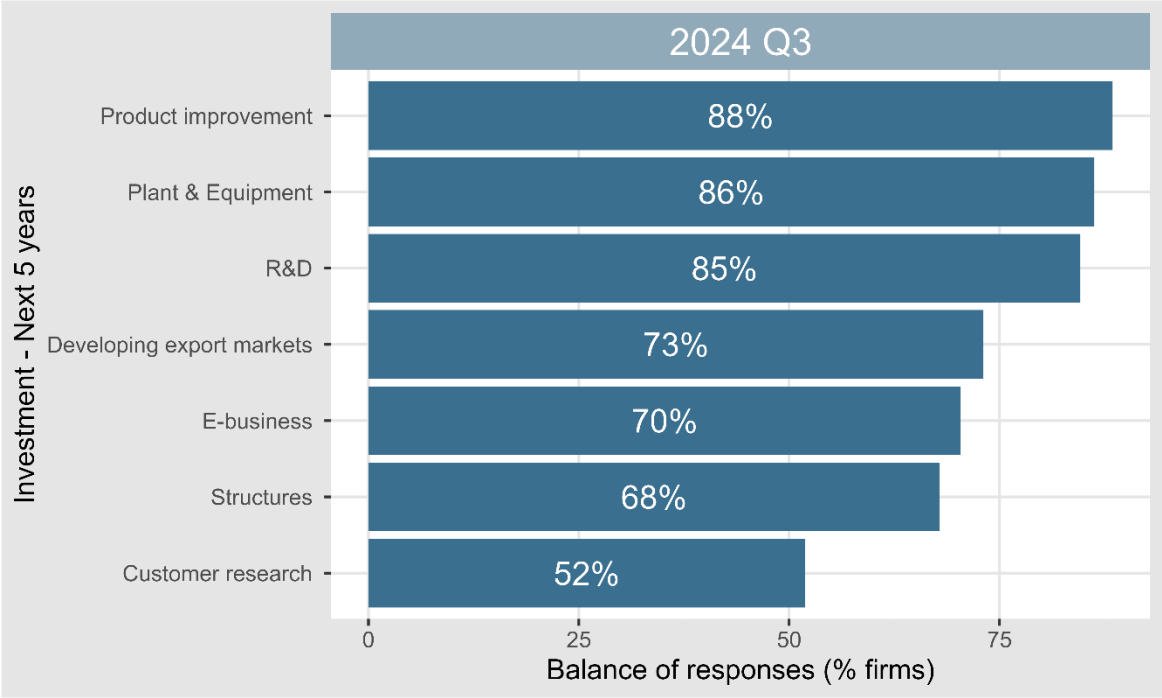
Investment Intentions over the longer term show greater positivity.

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.

Having focused considerable investment in R&D in recent quarters, this remains strong but there seems to be a widespread (88%) move to relay those developments into direct product improvements. There is also an equivalent (86%) level of attention to investment in plant and equipment.

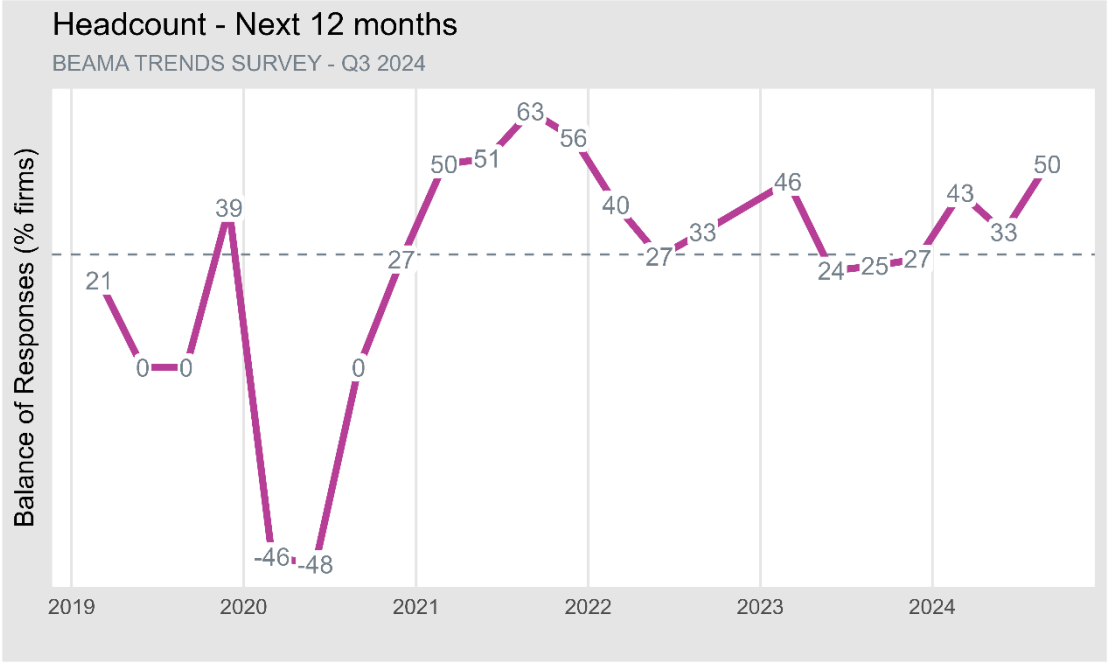
It is important to bear in mind that R&D typically has lead times of 18 months to 3 years, while development of factory capacity and production improvements will typically have timescales beyond 5 years.



Source: BEAMA

#ACCELERATING ELECTRIFICATION

Substantial increase in intentions to increase number of employees but challenges remain in filling vacancies and satisfying salary expectations and employment costs.



Source: BEAMA

Hiring intentions had taken a slight decrease in Q2 but came back in Q3 to the highest point for nearly 3 years.

Widespread challenges in filling vacancies continue to be reported, though possibly easing. Salary expectations are widely reported as a challenge and the impact of increased employment costs from recent Government Budget announcements are reported as a deterrent to employment and investment.

Skills shortage and availability of locally available workforce continues to be a significant challenge to growth in Manufacturing.

HEAT PUMP INSTALLATIONS

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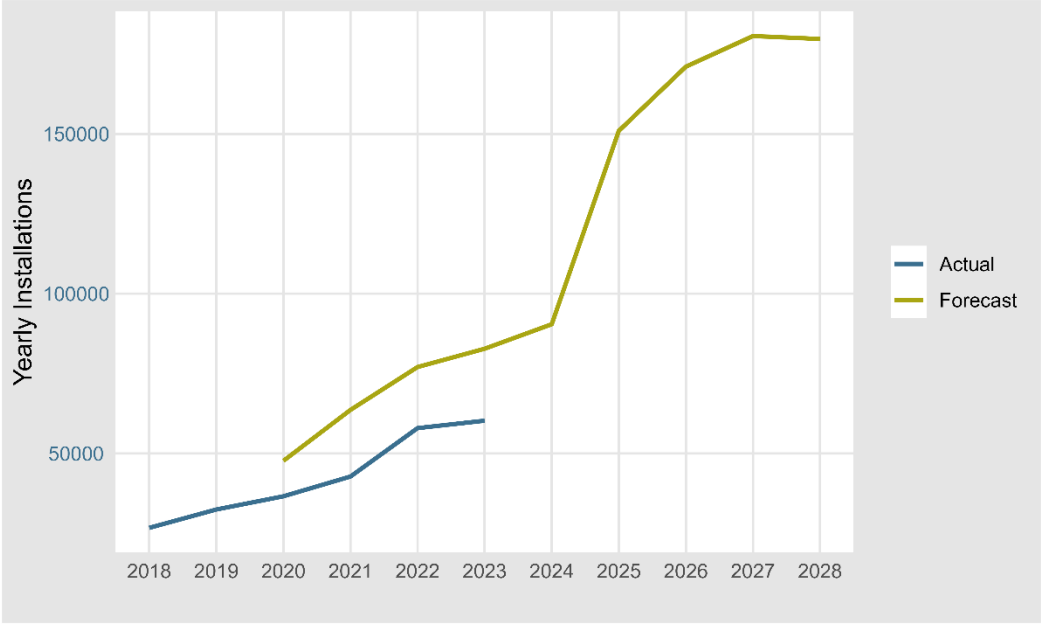
We need to increase low carbon electric heat deployment by 16 times the current rate to hit the 2030 target. We can cut the spark gap through electricity price rebalancing and opening the market to the full range of electric heating products as well as heat pumps.

Actual installations reported by the Heat Pump Association

This indicates that we need to increase heat pump take up by 16 times current delivery rates to hit 2030 targets.

To achieve this the UK will need to:

- Address the spark gap, i.e. the excessively high price of electricity compared to gas.
- Address the shortage of heat pump installers – currently 3-4k trained installers while we need to train the same number each year until 2028.
- Simplify installation challenges including EPC reform to acknowledge fully the benefits of low carbon heating.
- Address issues with the uptake of heat pumps including 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 eg 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.



Source: HPA/ OFGEM (FES forecast)

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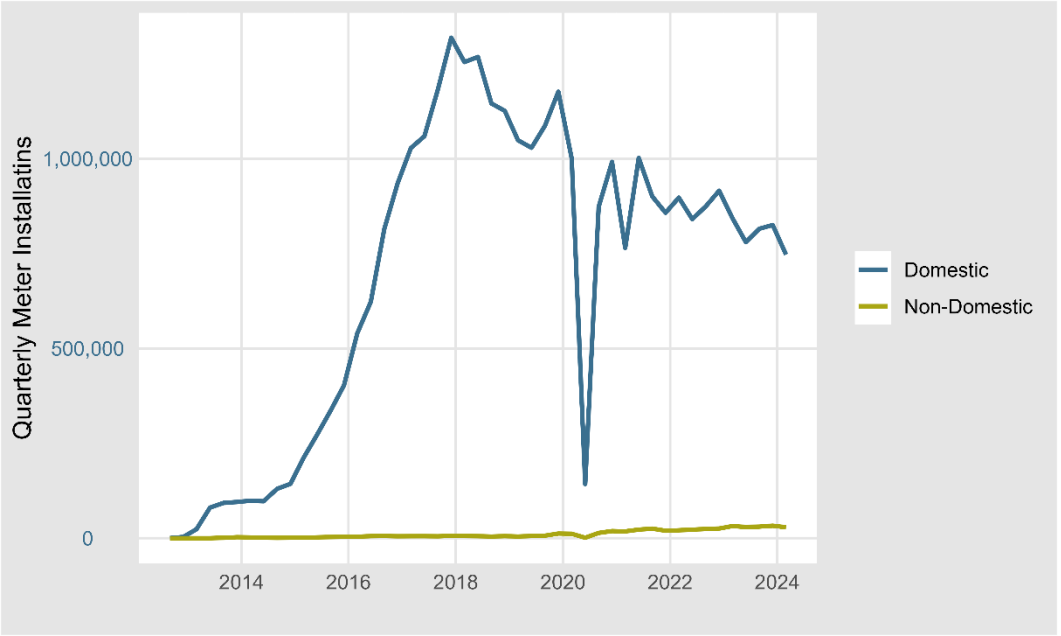
We are 11 years away from having a complete smart metering system to support a smart flexible energy system in the UK. This will not enable us to meet our Net Zero targets.

Manufacturers have left the UK market due to slow down in smart meter deployment.



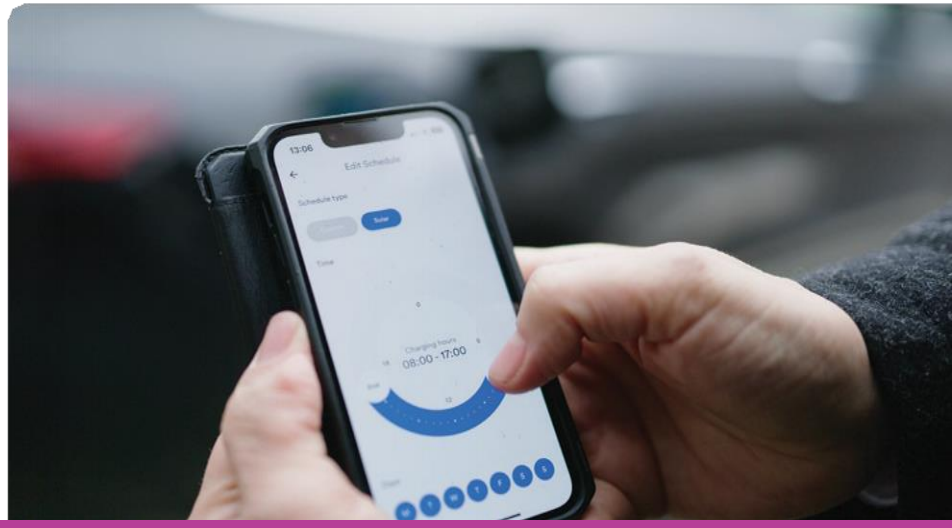
Source: DESNZ

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.

BEAMA will be publishing our views on the future program delivery for smart metering. Key to this is ensuring we maintain a supply chain in the UK and build up capacity for a faster rollout. It is essential we bring in greater accountability for faults on the system as well as new installs to gain back consumer trust. We strongly support urgent action to get this program back on track and deliver the consumer benefits it enables. We cannot underestimate how essential this infrastructure will be in the delivery of clean power to consumers.



VEHICLE REGISTRATIONS – ICE vs EV

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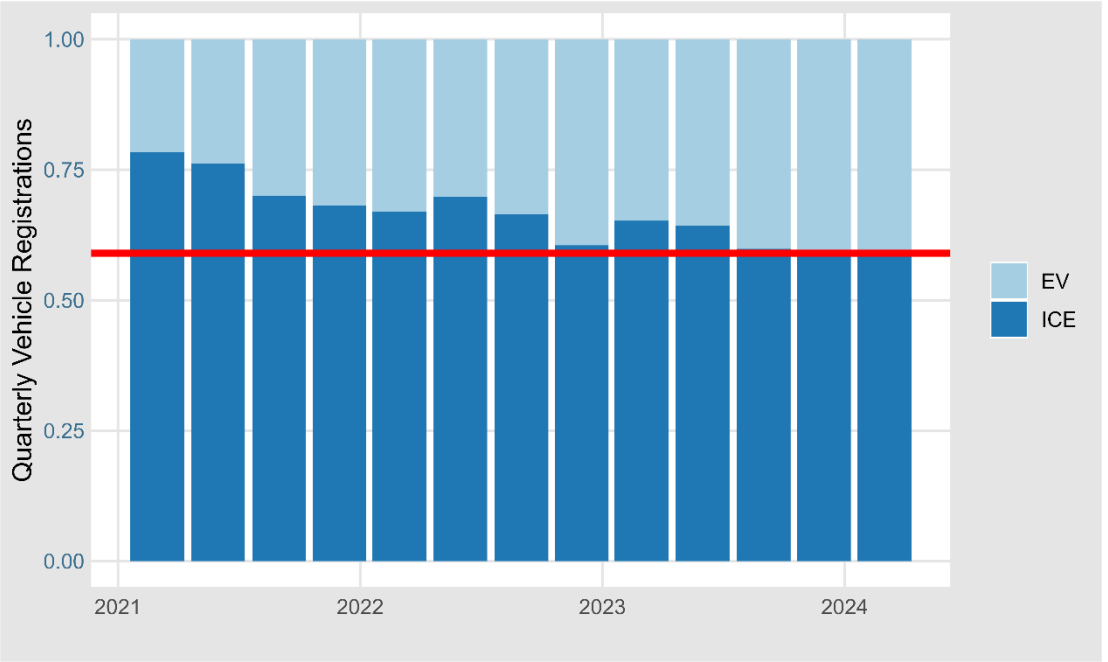
Market incentives for Electric Vehicle Uptake continue to hold up the market, and any decision to reduce targets would have significant impact on the supply chain for charging infrastructure. The rate of take up is still not fast enough and needs support.

The proportion of Electric Vehicles sold in comparison to Internal Combustion Engines continues to increase, albeit at a slower pace than would be expected.

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



Source: SMMT

PUBLIC EV CHARGING DEVICES – BY COUNTRY

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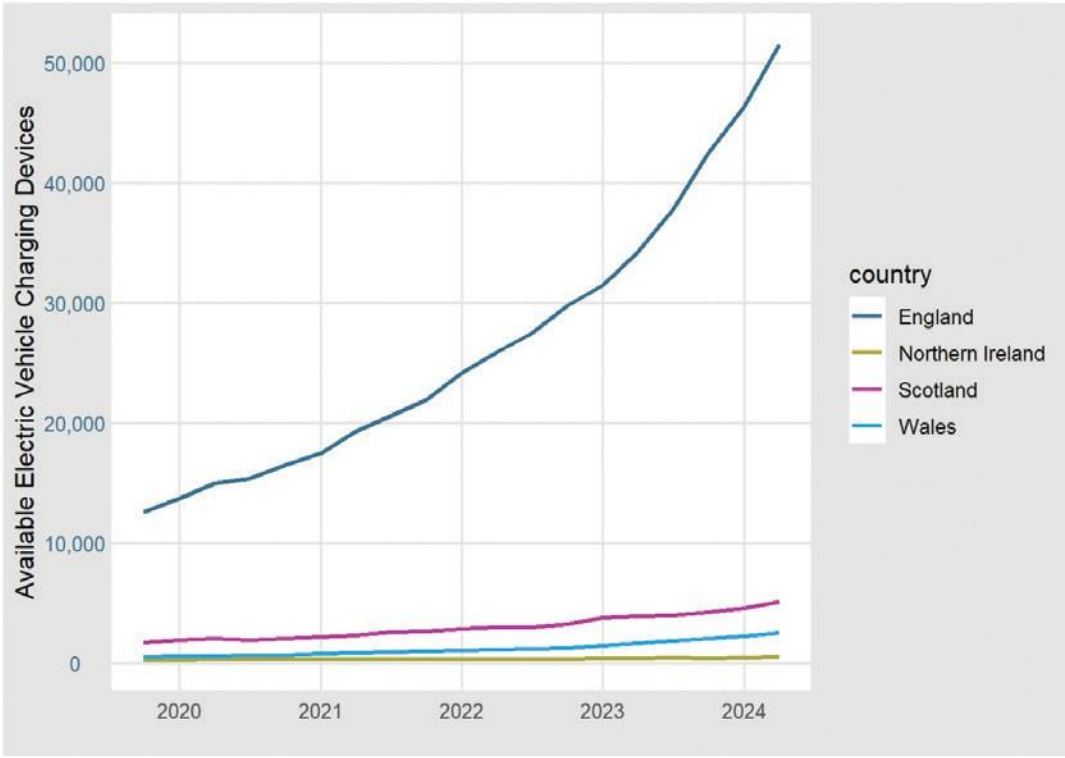
A major source of growth in electrical transmission and distribution equipment is related to EV charging networks in the private sector.

The continued increase in publicly available EV charging devices is welcomed. There is limited data currently on the installation rates for different forms of EV charging equipment, certainly in the non-regulated, private sector.

A major source of growth in electrical transmission and distribution equipment is related to EV charging, especially with rapid charging networks. Greater visibility of the variation in chargepoint delivery would aid supply chain planning as we see a lot of capacity in the electrical transmission and distribution supply chain taken up today from this rollout and there is value in tracking this against required grid investment needs.

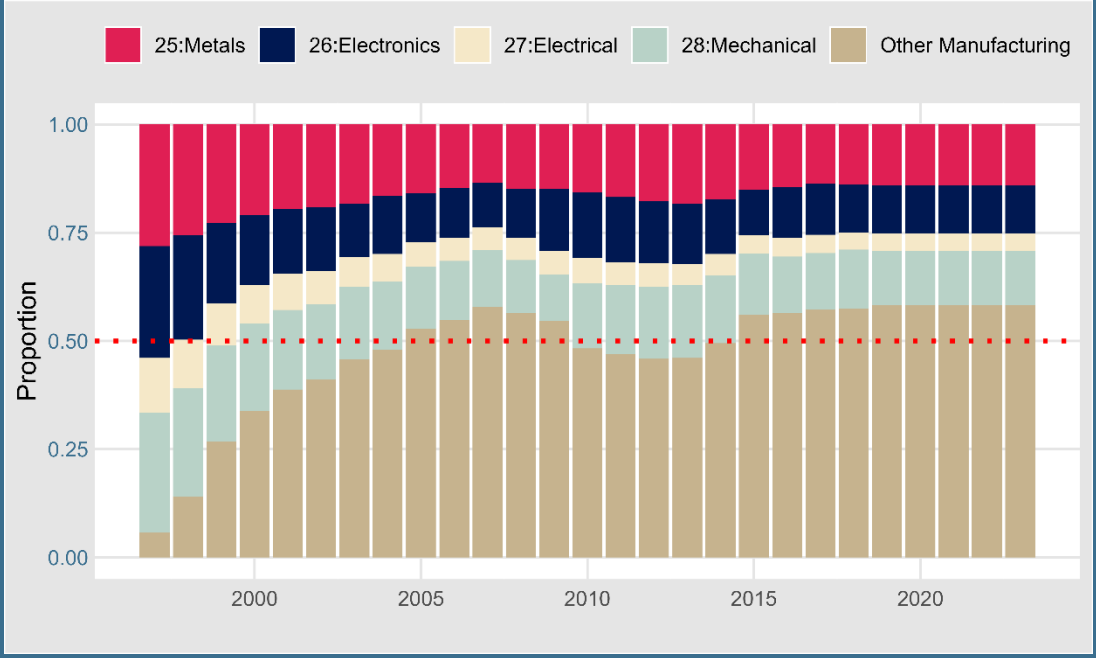


Source: ZapMap

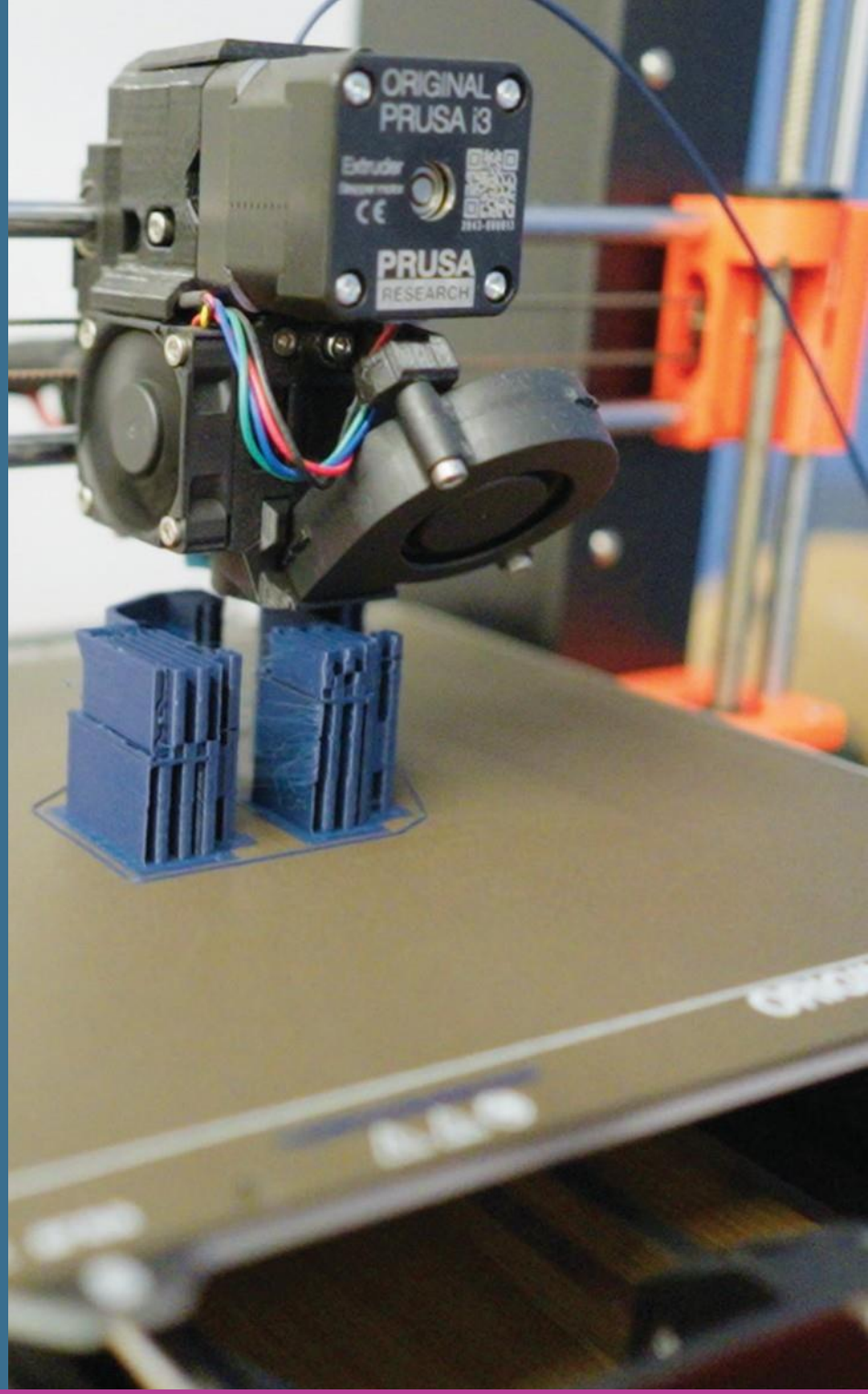
Publicly available electric vehicle charging devices at all speeds by UK country, from October 2019

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 Network 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[7].

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.

£11.1 bn
RIIO-T2 Allowances in Final Determinations, load-related

£19.8 bn
Additional Transmission spend signalled will be allowed under ASTI

7 BEAMA 2022 Growing the Supply Chain for a Net Zero Energy System Adjusted to 2024 values

8 Go-ahead for UK's biggest subsea connection project | National Grid Group

9 Ofgem Decision on Accelerating Strategic Transmission Investment (ASTI), p. 13. Ofgem provisionally identified 26 strategic electricity transmission projects recommended by the ESO worth £19.8bn as meeting the ASTI criteria (a) being larger than £100m; b) in whole or in part load-related; c) needed by 2030 to connect 50GW of offshore wind generation, and, d) acceleration resulting in consumer benefit).

10 Ofgem, 2024 Electricity Transmission Price Control Financial Model

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.

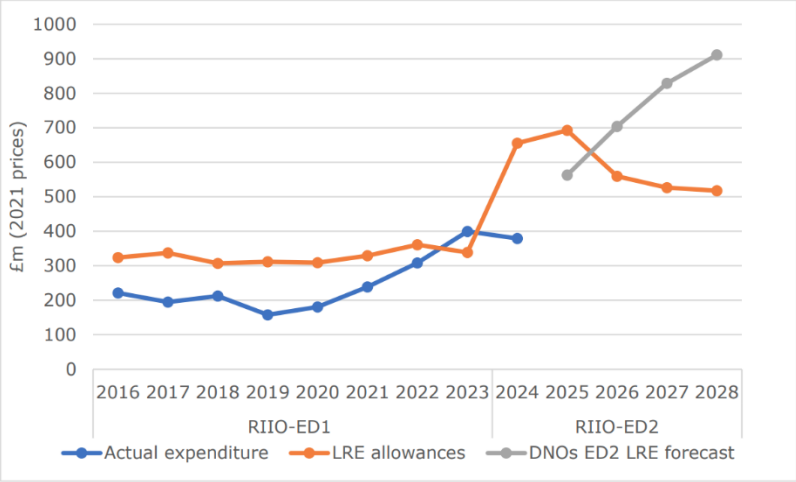
BEAMA welcome Ofgem's decisions to accelerate the delivery of RIIO T2 and RIIO T3 investment plans through the Accelerated Strategic Transmission Investment (ASTI) programme, worth £20bn. Recently, the first of these projects passed the final stage of approval by Ofgem, where Ofgem awarded £4.3bn6 for the Eastern Green Link 2 project[8]. Confirming the high-level needs-case for £19.8bn[9] additional spend under ASTI, as compared to the load related investment of £11.1bn initially awarded in RIIO T2[10], and as part of this making available pre- and early construction funding, represented a step change in regulatory decision-making and enabled early supply chain engagement. The decision to accept the need for projects ahead of the detailed designs and planning applications being submitted and exempting projects from competitive delivery, supported the move to more strategic network development required in GB going forward. BEAMA member companies supplying equipment to GB Transmission Owners (TOs) have benefitted from this programme, as some TOs have ahead of time contracted for some of the manufacturing capacity required to deliver the projects.

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 of programmes of work (rather than procuring project by project). Ofgem's regulatory frameworks may also need to evolve further to enable this change.

Distribution

In light of the Clean Power2030 Mission, it is especially worrying that DNOs are currently significantly underspending their ED2 allowances for reinforcement. 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.

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



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

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.

Assumptions about demand flexibility

Moreover, 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[11] 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.

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.

The figures for EVs and HPs can be seen below:

	ENA Common Assumption	FES 2024 Holistic
HEAT PUMPS	253,581	4,079,975
EVS	10,100,00	7,321,797

1 1 ENA Common Scenario Report, 2018

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 delivery and projected. 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 smart meters, connection of SMETS1 and resolution to current connection issues is absolutely central to Labour's 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.

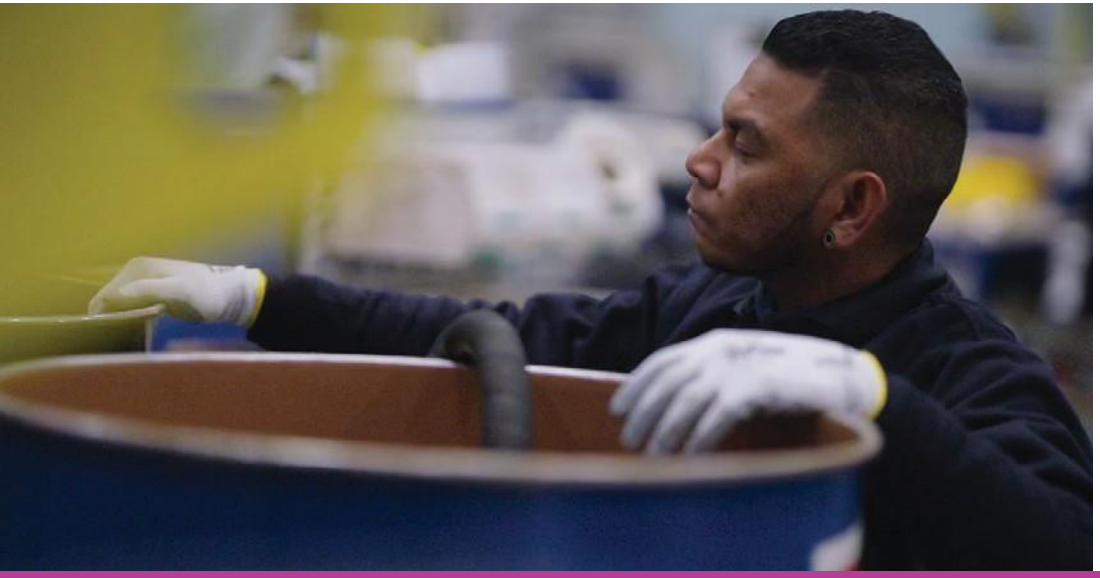
We would like to analyse electricity network investment figures in more detail and understand to what extent strategic planning and regulatory frameworks are driving network owners to invest at the ambitious rate required to enable networks ready for an electrified economy, and connecting the required aligned low-carbon generation capacity. It is essential that network companies reinforce ahead of need and RIIO3 will need to encourage anticipatory investment in order 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 second edition of what we hope will evolve into a substantial record of supply chain statistics tracking progress on the delivery of the UK's 2030 and 2050 targets. 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 Labour's 2030 clean energy mission and as a supply chain we will continue to contribute our trends 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.



UK Electricity Products Supply Chain Council

BEAMA's work to track data and relate it to delivery will be stronger with collaboration with other stakeholders. We intend to use the Electricity Products Supply Chain Council as a vehicle to cooperate with trade bodies, Government representatives and other stakeholders and to discuss the implications of trends. The EPSCC was set up by BEAMA in Autumn 2022 following the publication of our report with the Energy Systems Catapult on 'Growing the Supply Chain for Net Zero', which found that to meet Carbon Budgets and Net Zero targets we need to strengthen supply chains to accelerate delivery. The Council has been focused on the electricity transmission sector in recent months, working on a task allocated to the Council in the aftermath of the Electricity Networks Commissioner's report.

With a new government since July 2024, there is a refreshed policy context with specific aims for a 'clean power sector' by 2030 alongside the longer-term Net Zero goal. This puts more emphasis on the need to galvanise momentum behind work that can help build capacity in the UK supply chain and manufacturing sectors specifically, and data capture is an important requirement for facilitating that growth.

Specific work will include trade associations to share and gain oversight of current market trends, and tracking supply chain shortages and long lead times. A project to estimate the Value Added to the UK of accelerating transmission network infrastructure deployment, working with transmission owners and others, was begun but then on hiatus due to impacts of the general election. These will be valuable for industry and Government and we will link the work of the Council to the BEAMA Market Pulse.

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