PwC UK Energy Survey 2025

Powering the UK's path to growth

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Foreword

Will the UK have enough energy to power its growth aspirations? It's a critical question at the forefront of our clients' minds, yet an increasingly difficult one to answer.

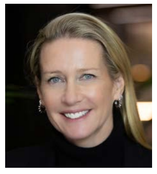
Price volatility and geopolitical instability have shown the vulnerability of the UK and global energy system as it transitions from fossil fuels to low-carbon energy,[1] with the UK accelerating its net zero targets to deliver clean power by 2030. This year's Energy Survey suggests power demand is now also in transition: from a long-term trend of declining consumption – total UK electricity consumption has fallen by 22% since 2005[2] – to increasing consumption, driven by technology, including automation, AI and electrification.

Technology adoption is increasing energy demand, making net zero a moving target. This is supported by findings in PwC's 28th Annual UK CEO Survey, which shows that 61% of UK CEOs are investing in technology such as AI, GenAI, cloud, data and analytics to drive change, embed agility and unlock opportunity. Technology is also a core pillar of the UK Government's Industrial Strategy and AI Opportunities Action Plan to enable greater productivity and growth. As the National Electricity System Operator (NESO) has acknowledged, greater technology usage will increase demand for grid connections and access to power. Together with the electrification of heat and transport, the surge in demand from technology is challenging traditional methods of forecasting power demand.

Conversations we have with energy companies and large energy users tell us they are nervous about the accuracy of future forecasts, rising costs and the risk of demand outstripping supply as the future impact of technology usage is unknown.

Last year's Energy Survey highlighted that the majority of UK organisations had yet to 'hit the control switch'; this year's survey tells us it is more important than ever to take an active stance in managing power demand, and that energy users should not assume that a stable, secure and affordable supply of power is a given. Development of the UK's clean energy industries is key to addressing this demand challenge and is a priority for the Government's Industrial Strategy.

It will require greater investment from new sources such as private equity and private credit, as well as innovative public and private sector collaborations. The UK must deliver economic growth to remain an attractive destination for investment. This requires a balanced discussion on aligning business growth and clean energy targets. By taking a whole-system view there is a real opportunity to deliver a successful energy transition while ensuring the resilience and headroom needed for technology-driven growth across the economy.



Vicky Parker
Energy, Utilities and Resources Leader, PwC UK

Matt Alabaster
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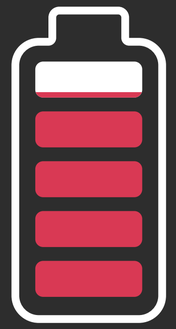
1. PwC UK Energy Survey 2024
2. Digest of UK Energy Statistics (DUKES) 2024, chapter 5

Key findings

92%

expect energy price volatility to increase the price of their products and services in the next 12 months, up from 81% last year.



83%

expect energy consumption to increase in 2025.

47%

have committed to net zero by 2030, up from 28% last year.

67%

say regulation is a top driver of carbon reduction.

55%

plan to use operational cash flow to fund their energy initiatives in the next 12 months.

biggest barrier to achieving their energy objectives is high capital cost.

Source: PwC UK Energy Survey 2025 (Responses from energy decision-making executives at 750 private sector UK businesses).

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01 AI and the technology-driven power surge

Balancing cost, carbon and energy resilience remain familiar and significant challenges for most businesses a year on from our last survey. Pressure from price volatility has not eased either.

89%
of businesses say energy price volatility reduced profit in the past 12 months.

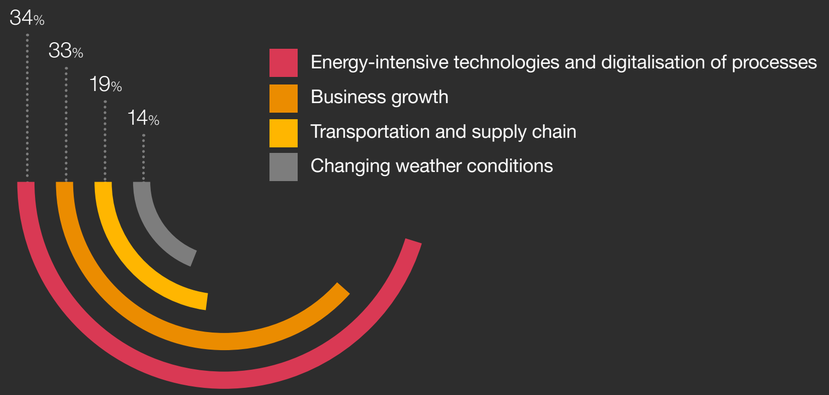
Source: PwC UK Energy Survey 2025

This is evident in the manufacturing sector where the high cost of energy is ranked as the number one risk to business by 51% of UK manufacturers in the Make UK 2025 survey – ahead of geopolitical instability, supply chain disruption and access to skills. This year's Energy Survey reveals businesses also face the added complication of rising energy consumption.

Pursing productivity and growth and the adoption of digitisation, automation and electrification will increase energy use. This is already happening with 89% of respondents indicating their total UK energy consumption grew in the past 12 months – by more than 10% for a fifth of respondents – and nearly as many businesses expect it to increase again in 2025. The most common drivers of this are the adoption of energy-intensive technologies and business growth.

What is driving energy consumption up in 2025?

Q: Which of the following do you expect to be the most important drivers of the increase in your organisation's energy consumption in the next 12 months? (% of businesses that chose driver as 1st ranked response).



Source: PwC UK Energy Survey 2025

The fact that technology is the top-ranked driver of energy demand shows that we are at the start of a new transition in the energy market, moving from a long-term trend of declining consumption, to increasing consumption driven by technology, including AI, automation and electrification.

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AI and the technology-driven power surge

This finding is in line with the National Electricity System Operator (NESO) forecast in its Clean Power 2030 report, which predicts that the UK's industrial and commercial electricity demand (excluding transport) will increase by around 10% between 2024 and 2030, even after accounting for a 4 terrawatt-hour (TWh) reduction in consumption due to energy efficiency measures. The NESO forecast assumes the electricity used by data centres will quadruple by 2030.

The Government acknowledged this growing need for power in its AI Opportunities Action Plan. To boost adoption of AI, it has pledged to create dedicated 'AI Growth Zones' with better access to the energy grid.

It will also set up an AI Energy Council to better understand the requirements of the technology. This approach will need to align with the revised strategy for grid connections, which is essential to underpin the delivery of Clean Power 2030 and already requires a significant rationalisation of the queue. As of 29 January 2025 all new connections have been paused.

So it is understandable that major technology companies are pursuing power purchase agreements (PPAs) to secure power directly; these bilateral agreements reflect the need for secure and reliable access to a power supply to serve their own needs directly.

> "Greater digitisation and electrification are on course to reverse the historical trend of electricity consumption decline. What was once seen as an energy trilemma – managing cost, carbon and security – now has an extra dimension: the need to supply enough stable power to unlock growth and productivity through technology-driven automation."
>
> Vicky Parker, Energy, Utilities and Resources Leader, PwC UK

02 Net zero: a moving target

The UK has set clear targets for decarbonisation: clean power by 2030 and a reduction in overall carbon emissions by 68% relative to 1990 levels[3]. Those targets provide the backdrop against which businesses now operate in the UK.

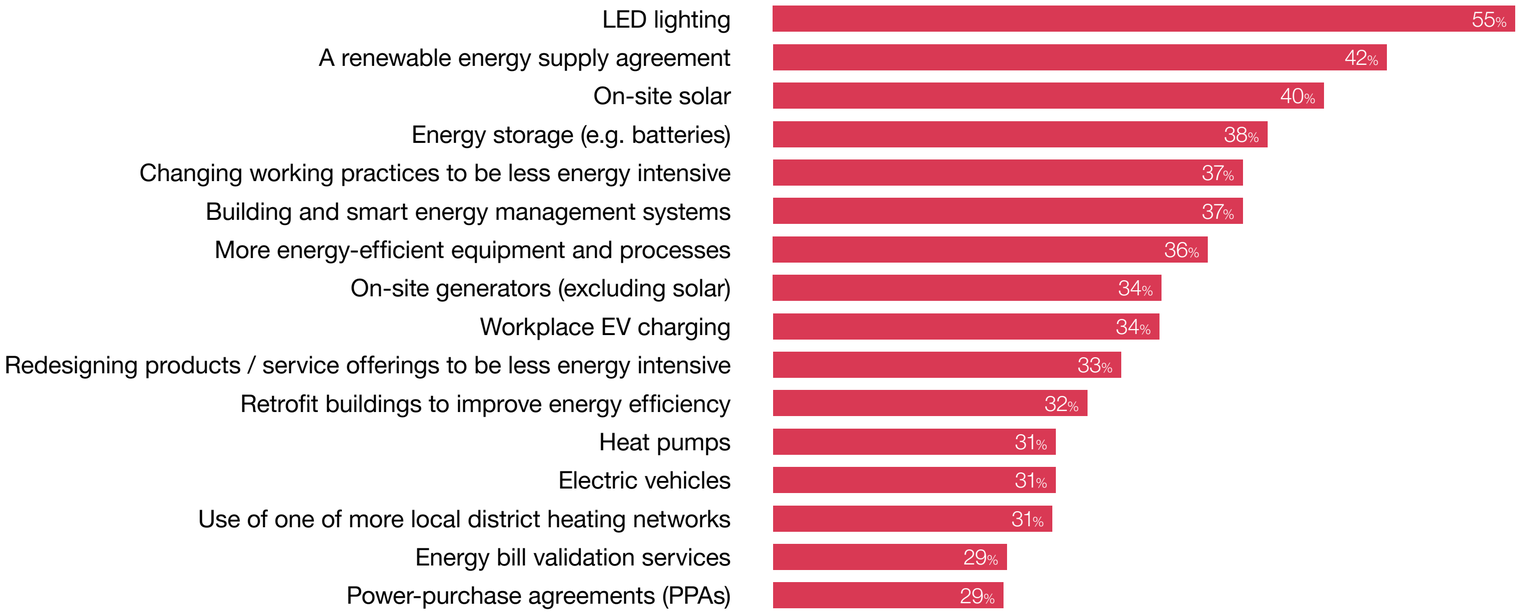
Growing energy consumption makes net zero a moving target, but businesses are not shrinking from the challenge. The proportion of respondents committed to net zero by 2030 has nearly doubled since last year's survey, up from 28% to 47%. And more than 80% expect to increase investment in energy management in the next 12 months, with over a quarter expecting to increase investment by more than 10%.

Businesses identify cutting carbon emissions as their top energy management objective this year: just over a quarter (26%) say it is their number one priority, ahead of cutting unit cost and reducing the volume consumed. However, this continues to be driven by regulation and energy security more than pressure from customers, investors and wider society.

UK businesses are making positive progress in implementing measures to manage both the volume and carbon intensity of consumption. More than half claim to have fully adopted LED lighting, 42% have a renewable energy supply agreement, where relevant, and 40% say they have implemented on-site solar.

Progress on energy efficiency

Q: To what extent has your organisation adopted the following with respect to its use of energy? (% of businesses who answered 'fully adopted where relevant').



Source: PwC UK Energy Survey 2025.
Note: These are self-reported figures. In our experience, true adoption rates of these technologies are considerably lower in practice.

3. Research Briefing: The UK's plans and progress to reach net zero by 2050 (House of Commons Library, 2024)

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Net zero: a moving target

But these examples are incremental rather than transformative, based on quick wins that either require limited capital outlay or have a clear and manageable payback period.

Only 29% of respondents have PPAs. Future demand for corporate PPAs may outpace supply, driven by rapidly approaching deadlines to meet decarbonisation targets and the lack of immediate solutions to accelerate new power generation projects through the congested grid connections queue.[4]

Businesses heavily reliant on energy for production and manufacturing have had to accelerate energy management measures. They have also had to consider the impact of energy costs on competitiveness when operating internationally.

All this makes it increasingly important for energy users to think hard about how they consume, measure and control energy. If UK industry is to become an efficient, low carbon engine of productivity and growth, more needs to be done to scale up access to and deployment of demand-side energy solutions. And a greater understanding of the benefits and the economic case for investment is essential.

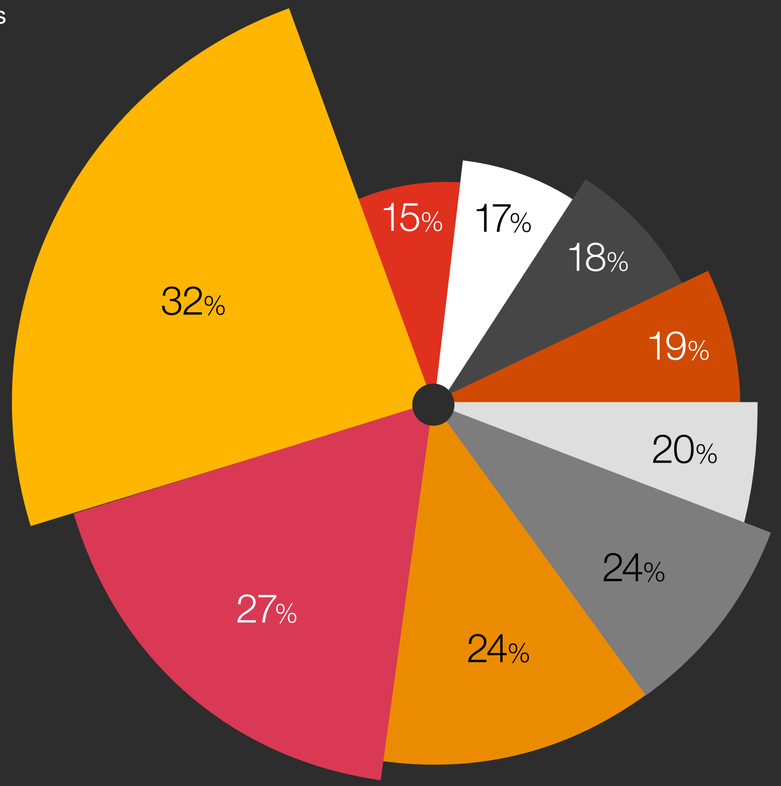
4. Full Power, the role of the energy sector in decarbonising business (Energy UK, 2024)

03 The funding gap: who pays?

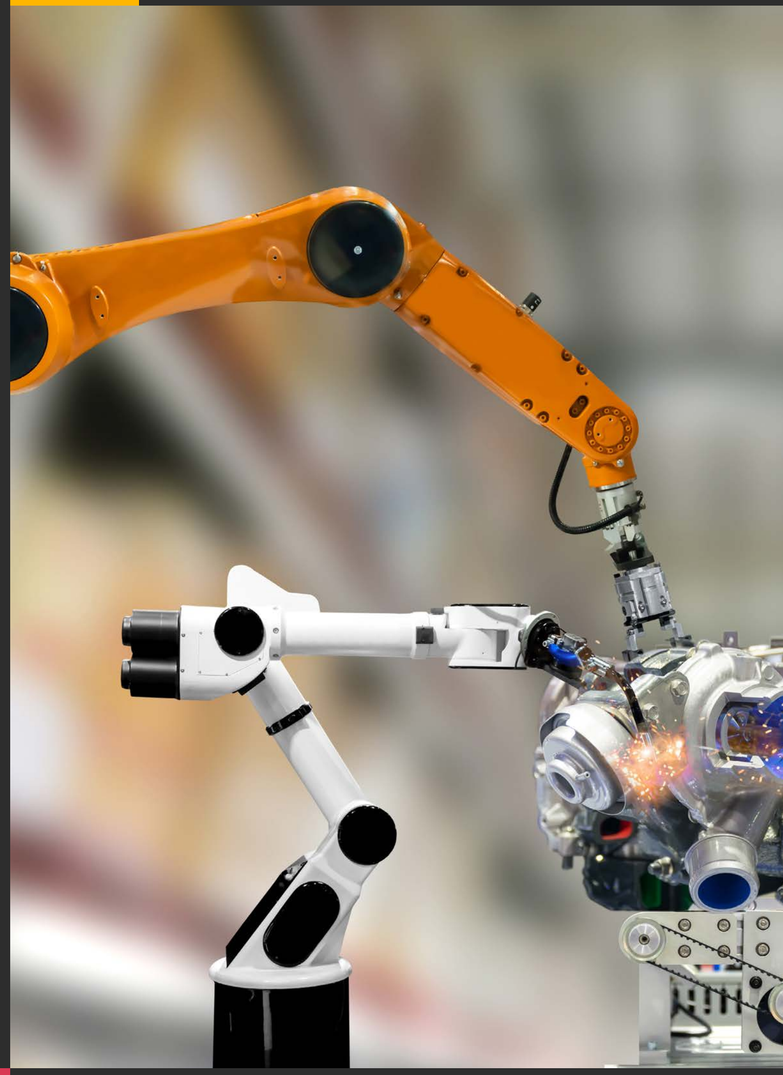
Almost a third (32%) of businesses say the high capital cost of solutions is one of the two biggest barriers to achieving their energy objectives.

Barriers to achieving energy objectives

Q: Which of these have been the greatest barriers to meeting your energy objectives? (% of businesses, 1st and 2nd ranked responses combined).



Source: PwC UK Energy Survey 2025



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The funding gap: who pays?

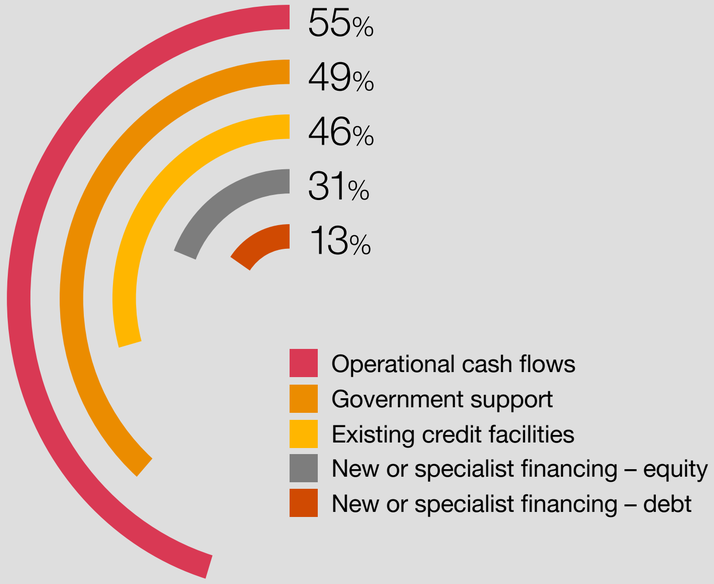
Many UK businesses are self-reliant when it comes to funding their energy objectives, using their own operating cash flows (59%) and existing credit facilities (50%) to fund energy initiatives in the past year. This helps to explain why they have made the most progress on solutions with low capital outlays and quick returns.

These will continue to be the main source of funding for energy objectives in 2025, but an increasing number of businesses (49%) are looking towards the Government for more support, with almost a third describing this support as essential. Given the scale of investment required, direct financial support from the Government will not be available, meaning new sources of capital must be found.

Plenty of private capital investors (venture capital, private equity, infrastructure funds and private credit) are eager to finance the energy transition, as seen by the flow of capital into clean energy generation, transmission, distribution and storage. But as yet the demand side of the market is much less developed for private capital. Many demand-side technologies are well understood but they are not always commercially viable without government intervention. More nascent technologies have high potential but require a leap of faith to test their feasibility – a leap of faith that the majority of private capital investors are not prepared to take.

Future funding for energy initiatives

Q: Which of the following sources of funding does your organisation plan to use in the next 12 months in order to achieve its energy objectives? (% of respondents).



Source: PwC UK Energy Survey 2025

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The funding gap: who pays?

The emerging energy technology ecosystem needs support, so that new solutions can achieve commercial viability faster.

The success of government support mechanisms in catalysing investment into grid-scale low carbon energy proves how important policy is in developing new markets.

Policy clarity is now needed to help drive capital into the demand side of the energy equation, and the new Industrial Strategy's prioritisation of clean technologies provides an opportunity for longer-term stability and investment. This will also have the dual benefit of balancing supply side requirements.

Public sector spotlight

Compared with their private sector peers, public sector respondents are much more focused on reducing energy consumption: 36% say this is their top-ranked objective, compared with 20% from the private sector. But they have had less success than private sector respondents in achieving those goals.

The public sector suffers from the same barriers holding back progress. For example, 36% rank the high capital cost of solutions among the top two ranked barriers, compared with 32% in the private sector.

But it also faces barriers that few businesses do: For example, 36% place a lack of energy expertise within their organisation among the top barriers, compared to 19% in the private sector. And 38% cite the lack of solutions with immediate impact, compared to 20% in the private sector.

Source: PwC UK Energy Survey 2025
(In addition to 750 business executives, our survey included 50 decision makers in the UK public sector for a subset of questions)

04 Balancing cost, carbon and growth

Despite this funding gap and lack of supportive policy, businesses still need to take greater control of energy usage and carbon footprint. But that can't be at the cost of competitiveness and performance.

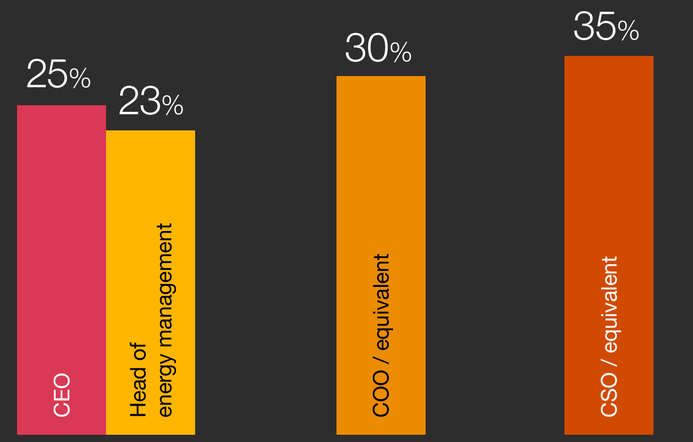
Over and above the short-term payback investments, businesses should look at what can be achieved through reinventing their products, services and internal processes to maximise efficiency and meet their carbon reduction targets without sacrificing potential for growth and profitability. This is not an easy task against the current economic backdrop, coupled with rising energy usage. This step change requires more capital-intensive solutions or deeper organisational change with slower payback. Here, there has been less progress. Just a third of the UK businesses we surveyed have fully redesigned their product and service offerings to be less energy intensive.

Ownership of initiatives is often fragmented across C-suite executives within organisations. Our survey shows the division of responsibility across the CEO, head of energy management, chief operating officer (COO) and chief sustainability officer (CSO) within many businesses.

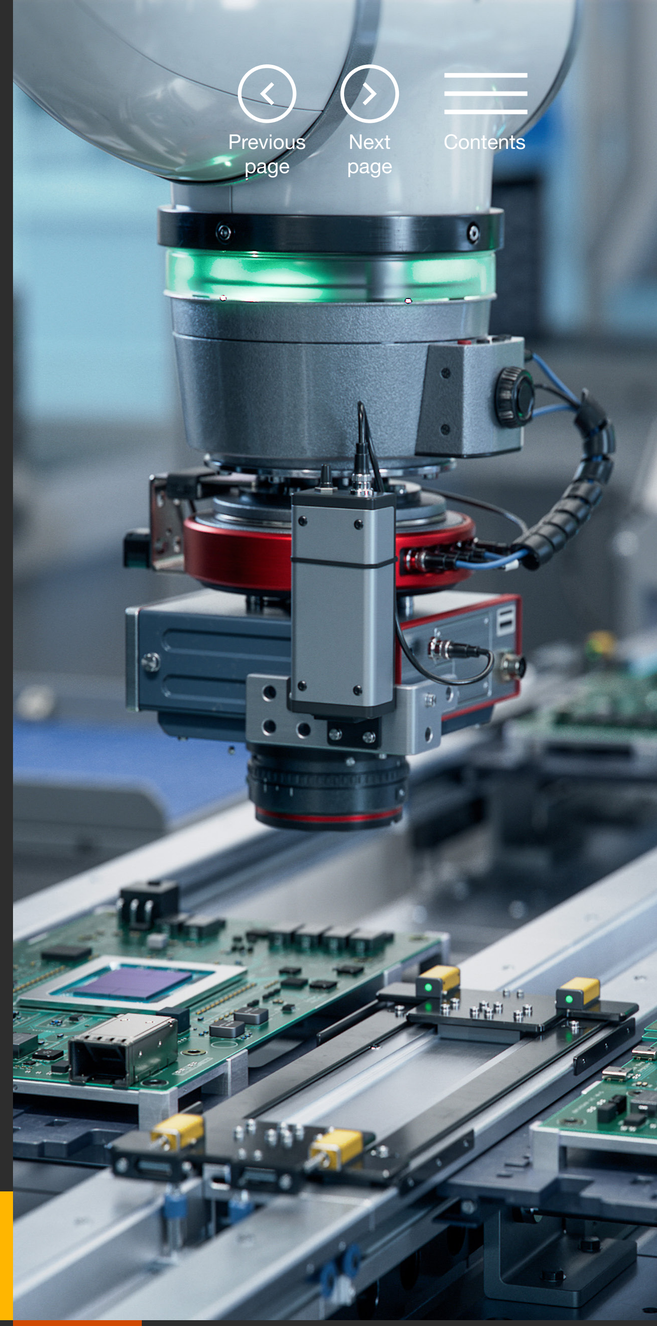
Bringing responsibility for these under a single remit might allow more coordinated and strategic action that has the potential to deliver significant cost savings, providing a more streamlined view across cost and carbon to better inform business decision-making.

Fragmented ownership of the energy agenda

Q: In your organisation, which executive has primary responsibility for the following? (% of businesses).



Source: PwC UK Energy Survey 2025



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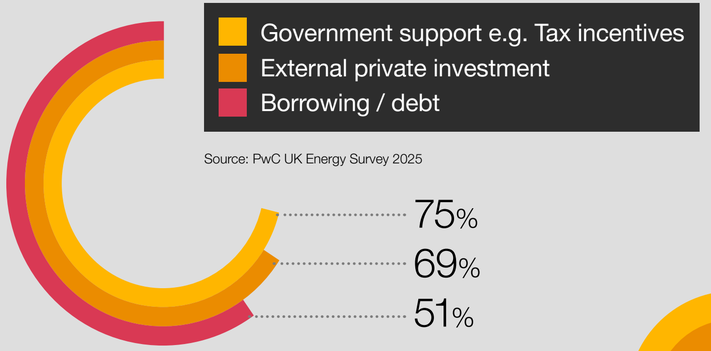
Balancing cost, carbon and growth

To date, the Government's primary focus has been on decarbonising the energy supply through regulatory and incentive mechanisms designed to provide longer term visibility of future revenue streams and potential returns on investment.

Energy management: Where are businesses looking for support?

Q: How important will the following be to your organisation's ability to meet its energy objectives in the next 12 months? (% of businesses who answered 'essential' and 'very important').



Source: PwC UK Energy Survey 2025

If financing and adoption of demand-side measures can be addressed, there is a monumental opportunity for the UK and its nascent energy services industry.

Service providers that combine energy, engineering and financial expertise can help UK businesses decarbonise, drive productivity across the economy, and develop capabilities in demand-side business models that can open up new export markets.

Investor reflections

We tested the findings of this year's Energy Survey with a group of private capital investors with investment mandates spanning the risk spectrum (including venture capital, private equity and infrastructure funds).

Private capital is a critical strategic pool of funding that can move the needle on the UK's Industrial Strategy and clean power objectives. However, it has choices about where to invest: that includes markets beyond the UK and sectors that are broader than energy.

Investors told us that investing into demand-side energy solutions is currently difficult for a number of reasons.

- **Constrained budgets:** UK businesses are currently facing a number of challenges including increasing costs and slow economic growth. Against this backdrop, capital expenditure must be tightly controlled, and there is a high bar for investment cases.
- **Barriers to scaling quickly:** Selling complex solutions to large organisations can be a long and highly consultative process, and it is not always clear who the buyer is.
- **Fragmented supplier base:** There are many businesses that are offering point solutions – part of the puzzle – but few have the scale or coverage to provide a comprehensive or national offer.

Collectively, these issues are creating a chicken-and-egg problem: the supply chain cannot scale without enough demand, and customers want a more comprehensive set of suppliers to give them consistent and repeatable solutions. As the UK has demonstrated successfully on the supply side of the energy equation, private capital can invest at scale, but only when the right conditions are in place.

What conditions are needed? Firstly, investors will need to have more confidence about how these markets will develop in order to invest at scale; and also have confidence that capital can be recycled. Additionally, the economics of demand-side solutions needs to improve, which will require more efficient, innovative solutions, as well as investment to drive hardware costs down.

> “There is a wall of capital ‘waiting in the wings’ to engage in this sector, but bringing it on to the main stage will require collaboration across the public and private sectors; the reward would be investment that drives the development of a new ecosystem of suppliers, as well as a more efficient and cleaner economy.”

Matt Alabaster, Energy, Utilities, Resources and Infrastructure Deals Leader, PwC UK

Conclusion

The UK has long been a leader on net zero by focusing on the supply side of the energy equation. By creating the right conditions for private sector investment, the UK has decarbonised its electricity generation faster than any other country in the G7.

Our research shows that there is now a need to extend that leadership by taking a whole-system view. We are at an inflection point, with the demand for power now set to increase after two decades in decline. This puts a responsibility on all stakeholders to bring the same level of focus to the whole system. This will involve an assessment of what can be delivered by both supply and demand side reform together, measured against the current position which is what can be achieved through predominantly supply side changes.

At stake is not just our net zero ambitions but the global competitiveness of our economy. Decisions will need to be made that take into account economic growth alongside affordability and the pace of change.

Any solution must look at all areas that can contribute to achieving net zero covering both supply and the demand side, including both businesses and consumers.

Under any scenario, it is critical that the right level of support to make this economically attractive is in place to ensure that the private sector capital needed can support these objectives, and can work alongside the public sector.

The UK's Clean Power 2030 Action Plan sets the ambition for the UK to be a global net zero leader but it will need to be balanced with the tough economic realities the country faces, and the levers that will need to be put in place to drive growth.

Methodology

In November 2024, PwC surveyed executives involved in energy decision-making at 800 UK organisations.

The survey examined their energy challenges and objectives, their progress in adopting key energy management measures, and how they fund investments in energy.

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