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TONE LANGENGEN

More Than Clean Power: Electrification Is the UK's Best Bet for Resilience

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Executive Summary

The Iran war has exposed a fundamental vulnerability at the heart of Britain's energy system: the country remains structurally exposed to fossil-fuel shocks.

The effects are already rippling across the economy. Petrol prices have surged sharply in recent weeks, rising at the fastest monthly rate on record.[1] Food producers are warning of sharp price rises as energy and fertiliser costs spike, with food inflation in the United Kingdom expected to climb as high as 9 per cent this year.[2] Businesses are facing rising input costs, while consumer confidence has fallen sharply amid fears of renewed inflation.[3] This is not just an energy shock; it is an inflation shock, a cost-of-living shock and a test of the UK's economic resilience.

This should not be understood as a temporary disruption. It is part of a systemic shift in the global energy system that is already reshaping supply chains, trade routes and the economics of energy security. Continued instability around key strategic points such as the Strait of Hormuz will not simply delay a return to previous norms, but rather accelerate a shift towards more regional, diversified and security-driven energy systems.

Across China, the United States and India, that rewiring is already under way. In these economies, decarbonisation is not the organising logic of energy policy. The priority is to build electricity systems that are abundant, secure and cheap enough to support economic growth, industrial strength and rising demand. Clean energy plays a central role, but it is being deployed as part of a broader strategy of system expansion and national resilience – not pursued as an end in itself.

The UK appears set to follow a different, riskier path. The current debate is deadlocked between two incomplete responses. The government argues the answer is to accelerate Clean Power 2030, focusing on decarbonising the electricity system as quickly as possible. The opposition argues that the answer is to expand domestic oil and gas production. Both positions contain elements of truth, but neither addresses the core strategic problem: outside

the power sector the UK economy remains overwhelmingly dependent on fossil fuels, and electricity is still too expensive to support mass electrification.

The UK is caught in a self-reinforcing high-cost, low-electrification trap. High electricity costs suppress demand, slowing the uptake of electric vehicles, heat pumps and industrial electrification. Weak demand growth, in turn, means that the fixed costs of the system – from networks to long-term contracts – are spread across a smaller base, keeping prices high. The result is a system that is too expensive to electrify and therefore remains dependent on fossil fuels and exposed to global shocks.

The right response to fossil-fuel disruption is therefore not just clean power or just oil and gas production, but a broader reset of energy strategy built around electrification, cheaper power and pragmatic resilience. While the goal of decarbonisation has been the only logic of UK energy policy for the past few decades, security and costs are the guiding lights that can actually make the country achieve decarbonisation more fully and more efficiently.

Giving precedence to security and costs means creating a credible short-term plan, alongside an ambitious long-term strategy.

In the near term, the UK must reduce its exposure to immediate shocks. This requires accelerating domestic energy supply where viable. Pursuing production at the Jackdaw and Rosebank oil and gas fields can help meet demand, and would have been good policy even before the war in Iran – the current conflict makes the opening of these sites essential. Additionally, the government should improve the targeting of support so the households and businesses most affected by rising prices can be protected more effectively.

Over the longer term, the UK needs a more fundamental reset to get out of its systemic energy crisis. Electrification will only happen at scale if electricity is abundant and affordable. This requires moving beyond a strategy focused solely on clean-power deployment and towards an approach that prioritises least-cost system design, stimulates demand growth and enables market reform, as laid out in our paper *Cheaper Power 2030, Net Zero 2050: Resetting the UK's Electricity Strategy for the Future*. It also requires a

credible framework for managing continued oil and gas demand through the transition, including stable investment conditions for the North Sea, and innovation within energy technology to enable the move away from fossil fuels.

Energy security is not primarily determined by how quickly the power sector decarbonises, but by how far and how fast the wider economy is electrified.

If the UK responds to the war in Iran and its implications by doubling down on the wrong parts of the system, it will remain exposed to the next shock. If it uses this moment to reset its strategy, it can build an energy system that is not only cleaner, but fundamentally more secure, more affordable and better aligned with long-term growth.

01

The UK's Energy Policy Is Out of Step With Global Shifts

The war in Iran has brought energy back to the centre of political debate. But the terms of that debate remain too narrow and increasingly out of step with the way the world's major powers are approaching the issue.

Across China, the US and India – the economies that increasingly shape the trajectory of global energy demand and emissions – decarbonisation is not the primary organising logic of energy policy. The central objective is to build electricity systems that are large enough, reliable enough and cheap enough to support economic growth, industrial competitiveness and rising demand. Clean energy is scaling rapidly, but it is doing so as a consequence of a broader strategy focused on abundant supply, resilience and cost.

The UK, by contrast, continues to frame energy policy primarily through the lens of decarbonisation.

The core strategic issue is not simply how quickly the UK decarbonises the power sector, nor whether it can marginally increase domestic fossil-fuel supply. It is whether the UK can build an energy system capable of delivering abundant, affordable and secure electricity at scale – and use that to reduce dependence on fossil fuels across the wider economy.

The war in Iran is not a short-lived disruption. The most plausible outcome is continued instability in global energy markets, rather than a return to previous norms. Even a weakened Iranian regime would retain the capacity to disrupt key routes and infrastructure at relatively low cost. As a result, energy systems are likely to operate under sustained risk – and, over time, to be reshaped by it.

The global energy system will not simply adjust at the margins; it will be rewired. Supply chains, infrastructure and trade flows will shift, changing how energy is produced, transported and consumed. The strategic question is therefore not simply how quickly to decarbonise, nor how much domestic

fossil fuel can be extracted. It is whether a country can build an energy system capable of delivering abundant, affordable and secure electricity at scale.

On that measure, the current UK debate falls short.

The government's approach focuses primarily on decarbonising electricity supply through the Clean Power 2030 mission, without fully confronting the fact that electricity still accounts for only a small share of total energy use. Even with rapid deployment of renewables, the wider economy remains structurally dependent on oil and gas. At the same time, there is insufficient focus on whether the current approach will make electricity structurally cheaper to support growth and electrification.

The opposition's position, by contrast, recognises the importance of domestic supply but overlooks a fundamental constraint: the North Sea is a declining basin. Domestic production can play an important role in managing near-term risks, but it cannot provide a durable route to long-term energy security on its own.

The deeper problem is that energy policy is increasingly being shaped by competing ideological positions, rather than by a clear-eyed assessment of physical and economic realities. Yet energy is not an area where ideology can substitute for outcomes. The core strategic issue is not simply how quickly the UK decarbonises the power sector, nor whether it can marginally increase domestic fossil-fuel supply. It is whether the UK can build an energy system capable of delivering abundant, affordable and secure electricity at scale – and use that to reduce dependence on fossil fuels across the wider economy.

02

The Real Lesson the UK Should Learn

Instead of using the Iran crisis to reset the UK's energy strategy, there is a danger that it reinforces the existing position – leaving the country exposed to the same vulnerabilities in the future.

The right lesson is that UK energy strategy must be built upon security, cost and sustainability. Doing this involves following three energy realities:

1. Shifting Demand, Not Supply, Should Be the Primary Focus

The central fact shaping the UK's energy challenge is that electricity accounts for only a small share of total energy use. Around 21 per cent of UK energy consumption is delivered through electricity,[4] while more than 70 per cent still comes directly from fossil fuels – across transport, heating and large parts of industry.

This means that energy security is not primarily determined by how electricity is generated, but by how much the economy relies on fossil fuels in the first place. As long as the majority of demand is met directly by oil and gas, the UK will remain exposed to global markets, regardless of how quickly the power sector decarbonises.

But electrification is not only about security, it is also an economic strategy. Electricity is becoming the platform of the modern economy, underpinning everything from artificial-intelligence data centres to advanced manufacturing. At the same time, rapid advances in "electrotech" are changing the underlying economics of energy. Unlike fossil fuels – extracted, finite and geopolitically exposed – electrified systems are manufactured, benefiting from learning curves, falling costs and rising efficiency.

As a result, electricity is no longer just one energy carrier among many, it is becoming the foundation of economic activity. Countries that can deliver abundant, low-cost electricity will gain a structural advantage.

Electrification also improves efficiency. Electric systems are inherently more efficient than fossil-fuel-based ones, which lose significant energy as heat. In many applications, electrification can reduce total energy demand by two to three times – making it not only a decarbonisation pathway but a route to energy abundance.

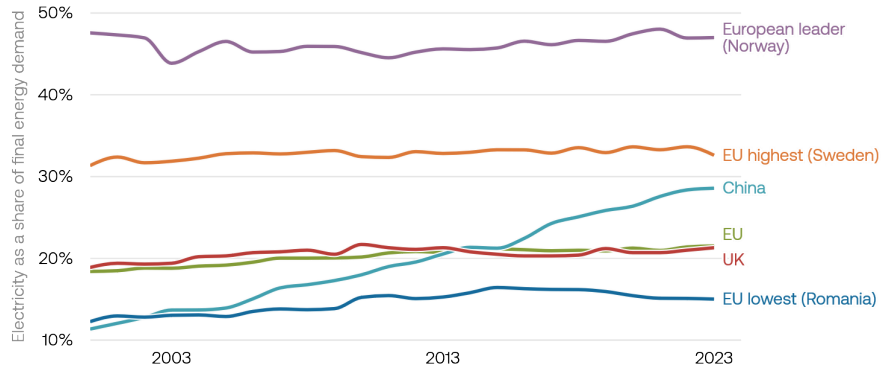
For a resource-constrained country such as the UK, this shift is particularly important. The fossil-fuel model of energy dominance may still apply to countries like the US, but the UK and much of Europe lack the resource base to replicate it. Even under optimistic assumptions, domestic production cannot restore sustained energy self-sufficiency. A more relevant comparator is China, which is rapidly electrifying its economy while scaling manufacturing-led energy technologies.

The implication for policy is clear. Back in 2023, we called for a decade of electrification. That case is now stronger than ever. The focus of energy policy must therefore shift from supply to demand.

This will require a step change in delivery. While electric-vehicle uptake has progressed relatively quickly, heat-pump adoption and industrial electrification remain far below both government and Climate Change Committee targets.[5] Overall, UK electricity demand has stagnated: electricity consumption per capita in the UK has gone down by 31 per cent since 2000.[6] Since 2006, electricity's share of total final energy consumption has increased by just 0.6 percentage points.[7] Instead, the UK should look to follow China's path of rapid electrification.

FIGURE 1

China has increased the share of final energy consumed through electricity much faster than its European counterparts



Source: IEA, Ember, Enerdata

2. Lower-Cost Electricity Is the Core Enabler of Electrification and UK Competitiveness

A focus on demand does not reduce the importance of supply. On the contrary, electrification makes abundant, low-cost electricity more critical than ever. For households and businesses to switch from fossil fuels, electricity must be the economically rational choice. If it remains persistently more expensive than gas or oil, electrification will stall. The same applies to new industries: if electricity is expensive or hard to access, investment will go elsewhere.

The price of power is therefore becoming a central determinant of economic performance and competitiveness.

The UK is currently badly placed in this respect. Electricity prices remain historically high and significantly exceed those in comparable economies, particularly for industry, where UK prices are among the highest in the developed world.[8] Electricity also remains several times more expensive than gas,[9] which means that even a heat pump that is operating 300 per cent more efficiently than a gas boiler efficiency would be more expensive to run.

This reflects both continued exposures to gas markets and deeper structural changes in the electricity system. Gas still frequently sets the marginal price, meaning volatility in global gas markets feeds directly into electricity costs. Recent price movements illustrate this clearly: as gas prices rise, electricity prices follow.

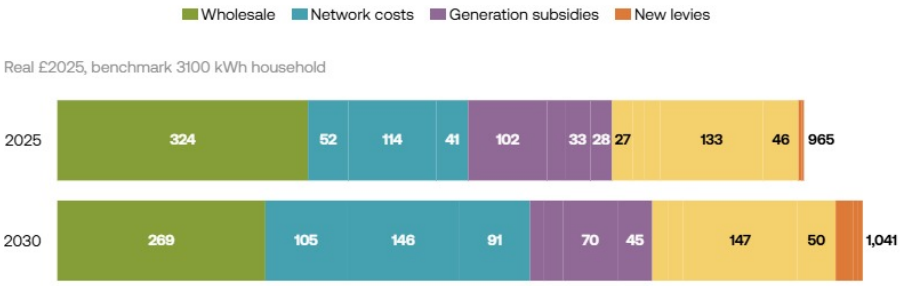
However, reducing this exposure is not as simple as replacing gas with renewables. As set out in our paper *Cheaper Power 2030, Net Zero 2050*, even as renewable capacity expands, gas remains essential for system stability – both to manage network constraints and to provide dispatchable power during periods of low wind and solar output.

At the same time, the cost structure of the system is shifting. Increasingly, costs are being locked in through long-term commitments rather than determined by wholesale markets. Contracts for Difference agreed at higher strike prices fix costs for consumers over decades, while the expansion of renewables brings additional system costs – networks, balancing and backup capacity – that are not captured in headline generation prices.

The result is a structural transition: from a system driven by volatile fuel costs to one increasingly defined by high, fixed costs. This reduces exposure to short-term price shocks, but creates a different risk: persistently high electricity prices if the system is not designed with cost discipline.

FIGURE 2

Electricity bills are set to increase in 2030 even if wholesale gas prices fall, and despite sunsetting schemes



Source: electricitybills.uk

Notes: The Renewables Obligation and Energy Company Obligation will be removed from bills between 2025 and 2030, but households are still expected to pay more overall.

Current policy risks reinforcing this trajectory. Clean Power 2030 assumes that accelerating low-carbon deployment will deliver both decarbonisation and lower costs. That assumption is weakening. Capital costs have risen, system-integration costs are increasing and accelerating deployment at higher strike prices risks locking in elevated costs over the long term. At the same time, removing gas too quickly may increase overall system costs.

The system is becoming cleaner and somewhat less exposed to fossil-fuel volatility but structurally expensive, with direct implications for electrification. High electricity prices suppress demand, slowing the uptake of electric vehicles, heat pumps and industrial electrification. At the same time, fixed infrastructure is being built in anticipation of future demand that has yet to materialise, incurring costs that are spread across the relatively small current user base.

The result is a negative feedback loop: high prices suppress demand; weak demand growth spreads fixed costs over fewer users; and prices rise further.

Breaking this loop requires a shift in approach that:

- Prioritises lower electricity costs through system reform and cost discipline
- Explicitly supports demand growth alongside supply, as a larger, more electrified system allows the increasing burden of fixed costs to be spread more efficiently, reducing unit prices over time

A strategy focused solely on building clean power will not deliver low-cost electricity. Delivering cheaper power is essential if electrification is to succeed – and UK competitiveness is to thrive.

3. Policy Must Reflect the Reality That Oil and Gas Will Continue to Play a Role in the UK Economy for Years to Come

A credible energy strategy must start from the realities of the system as it exists today, not as it might look in the future.

Oil and gas are used directly across the economy – in heating, transport, industry and power generation. While rapid electrification is essential, it is not feasible or cost-effective to do so in years rather than decades. Even the most optimistic assumptions from the Climate Change Committee suggest that the UK will need 11 billion to 12 billion barrels of oil and gas from 2026 to 2050[10] – more than 50 per cent of total final energy demand in that period.[11] The UK is currently on track to only produce 4 billion barrels of that oil and gas.[12]

The question is therefore not whether the UK uses oil and gas, but how that gas is sourced and how exposure to volatility is managed.

The UK is now a net fossil-fuel importer. After decades as a major energy producer, the UK has become increasingly reliant on imported energy as North Sea production has declined.[13] But as long as demand remains, reducing domestic production does not reduce reliance on fossil fuels – it

increases reliance on imports. In a context of sustained geopolitical disruption and tightening global supply, this not only exposes the UK to greater price volatility and security risks, it also weakens the UK's trade balance.

This is why domestic supply must be understood as a strategic resilience issue, not simply a question of climate signalling. To manage the UK's strategic exposure, there is a strong case for a more pragmatic approach to domestic production. This includes accelerating viable projects, providing a stable investment framework, and, where necessary, using emergency legislation to unblock developments that are already close to delivery. This is not a long-term solution to energy security, but it is a necessary component of managing the transition.

At the same time, continued reliance on fossil fuels reinforces the importance of managing the distributional impact of price shocks. As long as oil and gas remain part of the system, households and businesses will remain exposed to volatility. The UK's current approach to support is poorly targeted, forcing governments into a trade-off between broad, expensive interventions and insufficient support for those most in need. Improving this capability must therefore be a core part of energy policy.

Unless the UK recognises the reality of the current energy system and the role of oil and gas in the transition, it will struggle to manage the transition, sustain economic strength and maintain public support.

03

A Short-Term Plan With a Long-Term Strategy

The UK requires a strategy that operates on two levels: immediate actions to manage the current shock and reduce exposure in the short term, and a long-term shift in the structure of the energy system toward electrification and lower-cost power.

The Short-Term Plan

In the short term, the priority must be to stabilise the system and reduce exposure to immediate price shocks. Electrification is ultimately a long-term agenda, so in the short term the government must focus on the levers available within the system as it is.

Recommendation: *Improve the effectiveness and equity of consumer support by increasing data sharing, targeting support more precisely and investing in the digital infrastructure that will make it easier to provide support in the future.*

The UK will remain exposed to energy price volatility in the near term. Managing this effectively requires a step change in how support is delivered.

Recent crises have exposed a persistent weakness: the state lacks the ability to target support effectively to those who need it the most, and to translate that support into the structural change that will reduce the need for support in the future. As a result, policymakers are forced into a binary choice: broad-based support at high fiscal cost, or imperfect targeting that misses many of those in need. The universal support deployed in 2022 directed substantial resources to households that did not require assistance and did very little to increase uptake of electric heating options. With fiscal headroom now more constrained, this approach is no longer viable.

This challenge is becoming more acute. Energy price increases affect households unevenly: what is manageable for higher-income households can have severe effects for those in fuel poverty. A more targeted approach is therefore both more efficient and more equitable, in particular if combined with measures to help people replace fossil-fuel systems.

However, existing mechanisms are not fit for purpose. Benefits-linked schemes exclude many working households under pressure, while local delivery channels cannot operate at scale. More fundamentally, the system is fragmented: income data, household characteristics and energy usage are held separately, with no effective way to link them in real time.

Addressing this requires building the infrastructure for targeted support. Over time, digital ID offers a pathway to a secure, verified view of household circumstances linked to energy accounts and eligibility criteria. Other countries have shown that integrating data across tax, welfare and energy systems can significantly improve both the reach and efficiency of support. The UK has the technical building blocks but lacks the legal frameworks and prioritisation to deploy them.

In the short term, government should improve targeting within existing constraints – expanding eligibility, improving data sharing and directing support more effectively. Energy UK believes this can happen at pace through a dedicated taskforce.[14] In parallel, it should accelerate the development of digital infrastructure that allows support to be delivered automatically and at scale in future crises. Critically, improved targeting should not simply subsidise existing consumption patterns but be used to support the transition away from fossil-fuel systems by linking support to electrification where possible.

Without this capability, the UK will remain reliant on blunt, costly interventions. With it, support can be targeted, timely and fiscally sustainable, helping ensure the energy transition remains politically viable.

Recommendation: *Create an enabling environment for the electrification that can happen immediately – and open a dialogue with the public about the need for further electrification.*

Mass electrification of the UK economy will not be feasible as part of any short-term plan. But a meaningful reduction in fossil-fuel demand can still be achieved by accelerating the switch where it is already close to viable. The government should use this moment to have a conversation with the public about the need for electrification and ensure that households and businesses that are ready to move away from fossil fuels can do so easily, quickly and with confidence.

An obvious first step would be to bring forward funding under the Warm Homes Plan, ensuring that support is available at the point when households are making replacement decisions. In practice, much of electrification happens at moments of system failure or upgrade, such as when a boiler needs replacing. If support is not available at that point, households will default to like-for-like, fossil-fuel-powered replacements, locking in emissions and exposure for years to come.

Beyond funding, the government should focus on removing practical and regulatory barriers that slow deployment. Electrification is often constrained less by technology than by friction: complex installation requirements, inconsistent standards, planning constraints and limited installer capacity. Grid access is also a growing constraint, with long delays and uncertainty in a system still geared more towards connecting generation than enabling new electricity demand. Working with networks, suppliers and installers, the government should introduce short-term regulatory changes to simplify installation processes, standardise requirements and enable faster rollout at scale. This should include addressing inconsistencies such as noise regulations that apply to heat pumps but not to air-conditioning units or gas boilers.

Taken together, these measures would not deliver mass electrification overnight. But they would ensure that where switching is already viable, it happens – reducing fossil-fuel demand at the margin and beginning to shift the structure of the system in the right direction.

Recommendation: *Progress the approval of Jackdaw and Rosebank oil and gas fields and at pace to support domestic production and reduce reliance on imports.*

Given the current geopolitical context, there is a strong case for government action to unblock and accelerate these developments – particularly where projects are already advanced and economically viable. This could include targeted legislative measures if necessary to avoid further legal challenge, alongside reform of the Energy Profits Levy and a more stable licensing framework to support continued investment in UK supply.

Crucially, this is not simply about increasing fossil-fuel output. Gas will remain a core part of the UK energy system through the 2030s, both for heating and for providing flexibility in the electricity system. Without domestic supply, this demand will be met through imports, often with higher carbon intensity and greater exposure to price volatility. Accelerating projects such as Jackdaw and Rosebank is therefore justified both on economic, strategic and climate grounds.

Jackdaw is particularly strategic in this context. It is an advanced development, with infrastructure largely defined, and could begin production within the next few months if regulatory barriers are resolved. At peak, it is expected to displace at least 15 per cent of liquefied natural gas imports[15] and make up 6.5 per cent of UK Continental Shelf gas supplies,[16] making a material contribution to domestic supply at a time of heightened geopolitical risk. At a time of low storage levels and rising global competition for supply, delaying such projects risks increasing dependence on volatile international markets.

Rosebank, meanwhile, could account for around 8 per cent of UK oil production this decade,[17] supporting domestic output, government revenues and the balance of trade. While oil is traded on global markets and much of the crude would be exported for refining, maintaining domestic production supports supply resilience and government revenues in the face of tightening global markets.

This is not a long-term solution to energy security but a pragmatic measure to manage the transition – reducing exposure to global markets in the near term while electrification scales over time.

The Long-Term Strategy

Over the longer term, the UK must move from a strategy focused primarily on clean-power supply to one centred on cheaper power, electrification and economic growth.

This requires a shift in the core objective of energy policy. The goal should not simply be to decarbonise the electricity system as quickly as possible, but to deliver electricity that is both clean and cheap, so that it becomes the obvious alternative to fossil fuels across the wider economy and creates a model other countries will want to replicate.

Electrification will only happen at scale if electricity is affordable. Without this, the transition will stall, and the UK will remain exposed to fossil fuel volatility.

Recommendation: *Shift the focus from energy supply to energy demand, replacing the Clean Power 2030 target with a Cheaper Power 2030 target to encourage broad uptake of electric power and avoid locking in high prices.*

The UK's current electricity strategy is increasingly misaligned with its core objective. While Clean Power 2030 focuses on accelerating the deployment of low-carbon generation, it risks prioritising speed over total system cost. This may deliver decarbonisation in the power sector, but it also risks locking in structurally high electricity prices for decades.

The recent increase in gas prices following the war in Iran does not change these underlying dynamics. If anything, it reinforces the importance of ensuring that the transition delivers lower-cost electricity, rather than embedding higher costs in the system over the long term.

A central issue is that the UK's electricity system is evolving out of balance. Policy has focused primarily on expanding supply – building new generation and network capacity – while demand has lagged. This is contributing to rising fixed costs, which are then recovered across a relatively small and slowly growing demand base.

This dynamic is particularly evident in network investment. The scale and pace of planned expansion under programmes such as RIIO-ED3, Ofgem's electricity distribution price-control framework set to come into effect in April 2028,[18] reflect an assumption of rapid electrification aligned with the Climate Change Committee's targets that has not yet materialised. While investment in networks is essential, building ahead of demand without a plan for how to stimulate demand and sufficient cost discipline risks driving up system costs unnecessarily.

More broadly, high electricity costs in the UK are not incidental. They are the result of accumulated policy choices. The current system relies heavily on long-term revenue guarantees, particularly Contracts for Difference, to finance new capacity. While this approach has been effective in scaling offshore wind, it is now becoming the dominant mechanism for delivering capital-intensive generation, with costs increasingly determined by long-term contractual commitments rather than competitive market dynamics.

Addressing this requires a shift in approach. The objective should be to deliver electricity that is both clean and cheap, ensuring that new investment reduces total system costs once network, balancing and integration costs are taken into account.

As set out in our paper *Cheaper Power 2030, Net Zero 2050: Resetting the UK's Electricity Strategy for the Future*, such an approach would focus on least-cost pathways and structural reform of the system, including:

- Reforming electricity markets to introduce locational pricing, aligning investment signals with the physical realities of the system and encouraging lower-cost deployment
- Reviewing Clean Power 2030 grid plans, including ED3, to identify cost efficiencies and ensure that network investment is aligned with realistic demand growth, not carbon-budget trajectories
- Reducing additional costs driven by policy, including removing the Carbon Price Support to reduce the cost of gas-fired generation where it remains necessary

- Reforming Contracts for Difference, ensuring that no new contracts are agreed unless they demonstrably reduce total system costs, and exploring alternative models that better align with lower consumer prices
- Balancing the generation mix between renewables and nuclear together – in line with the signal of intent from the government on building new nuclear-power stations

Recommendation: *Place demand growth at the centre of policy, prioritising demand-side connections in the grid queue, accelerating access to network capacity, and removing unnecessary regulatory barriers to electrification across heating, transport and industry.*

Electrification is not just about expanding supply. It means building a system that actively enables households and businesses to switch away from fossil fuels and towards electricity.

At present, the UK's strategy is not achieving this. Electrification remains complex, slow and often uneconomical. Households face high upfront costs and regulatory friction when installing heat pumps. Businesses face delays and uncertainty in securing grid connections. Industrial electrification projects are often deprioritised relative to generation in the connection queue.

This reflects a deeper issue: the system is not designed around demand.

A more effective approach would focus on making the shift economically rational and practically easy.

A critical part of this shift is addressing upfront cost barriers. Even where electrification is cost-effective over time, high initial capital costs remain a major constraint for households and businesses. A more durable solution requires moving beyond one-off grants towards scalable financing models. This includes working with financial institutions to enable low-cost, long-term financing – for example through government-backed loan schemes,

on-bill financing or partnerships with commercial banks. By spreading costs over time and aligning them with energy savings, electrification can be made economically viable for a much larger share of the population.

Another core component is creating real incentives for flexibility. As electrification accelerates, the cost and feasibility of the transition will depend not just on how much demand shifts to electricity, but on when and how that demand is used. A system that treats demand as fixed will require significantly more generation and network capacity, increasing costs. By contrast, enabling flexible demand – through electric vehicles, heat pumps and smart technologies – can make better use of existing infrastructure. However, current market and regulatory frameworks do not consistently reward this behaviour. Price signals remain weak or poorly aligned with system needs, and aspects of electricity pricing can penalise demand-side response. Addressing these distortions will be critical to unlocking investment in flexibility and ensuring that demand growth supports, rather than strains, the system.

This will also require government to work more actively with system actors, including network operators and suppliers, to ensure that incentives, standards and processes are aligned with demand growth. While short-term reforms can remove immediate bottlenecks, a more fundamental shift is needed in how distribution networks are planned and operated. At present, they are not configured to proactively enable electrification, with processes and planning frameworks still acting as a constraint on deployment. A more enabling approach – focused on anticipating demand, streamlining approvals and supporting faster rollout of electrified technologies – will be essential to ensure the system can accommodate demand growth efficiently and at scale.

Finally, innovation must be actively enabled. The next phase of the energy system will be defined not just by supply generation, but by how demand is managed – through storage, flexibility, digitalisation and smart systems. Unlocking this requires a regulatory environment that supports new business models and technologies. The government should review how existing systems such as energy performance certificates structurally hold back innovation.

Without this shift, the UK risks building a system that is capable of electrification in theory, but unable to deliver it in practice.

Recommendation: *Create a policy framework for continued sustainable investment in the North Sea.*

A credible long-term energy strategy must provide clarity on the role of domestic oil and gas. The UK will continue to rely on oil and gas through the transition, particularly for heating, industry and as a source of flexibility in the electricity system. This means reducing domestic production does not reduce reliance on fossil fuels – it increases reliance on imports and thus exposure to higher costs, greater volatility and increased security risks.

The objective should therefore not be to maximise or minimise production in isolation, but to manage decline in a way that is consistent with both energy security and long-term decarbonisation.

This requires a stable and credible investment framework for the North Sea.

At present, policy uncertainty is undermining investment. Frequent changes to taxation, licensing and regulatory expectations have created an unpredictable environment, discouraging long-term capital allocation. This risks accelerating decline in domestic supply faster than demand falls, increasing reliance on imports at precisely the moment when global markets are becoming more volatile.

A more effective approach would provide clear, consistent signals. This includes maintaining a predictable fiscal regime, offering clarity on licensing pathways, and ensuring that viable projects can proceed where they support domestic supply and system resilience.

Without a credible framework, the UK risks realising the worst of both worlds: declining domestic production, continued fossil-fuel demand and increasing exposure to volatile international markets. With it, the UK can manage the transition in a way that supports security, stability and investment, while enabling the shift toward a more electrified and resilient energy system.

Recommendation: *Unleash innovation as a tool for diversification to increase energy independence, reduce vulnerability to shocks and set the agenda for the next phase of global energy.*

As the global energy system is reshaped by geopolitical instability, countries are reassessing their reliance on traded oil and gas. This creates a significant opportunity: those that lead in energy innovation will not only reduce their exposure to fossil-fuel shocks, but also capture the industries that define the next phase of the global energy system.

For the UK, this is particularly strategic. As a resource-constrained country with limited domestic fossil-fuel reserves, the UK cannot compete on hydrocarbons. Its long-term advantage lies in innovation, technology and system design. Diversification, therefore, must come not just from shifting fuels, but from building leadership in the technologies that will underpin the future energy system.

This means doubling down on areas where the UK has a credible advantage – most notably nuclear fission and fusion.

But innovation should not be confined to generation. The next phase of the energy system will be shaped as much by demand-side and enabling technologies: energy-efficient chips, storage, digital optimisation and advanced power electronics that improve how electricity is converted, controlled and delivered. Technologies that reduce energy demand or improve system efficiency are as strategically important as those that increase supply.

Innovation, in this sense, is diversification. It reduces reliance on any single fuel, technology or system design while opening new pathways to lower costs, greater resilience and economic growth. For the UK, it is also the most credible route to long-term energy security in a more fragmented and competitive world.

04

An Energy Reset for a New Energy Age

The war in Iran has focused the nation's attention on energy supply and prices, but the UK is not facing a temporary energy shock. It is operating in a world where volatility is structural, and where energy security can no longer be treated as a narrow question of supply.

The response cannot be limited to accelerating clean power alone, nor to expanding fossil-fuel production in isolation. Both approaches fail to address the underlying vulnerability.

A credible strategy must do three things at once: manage the system as it exists today, reduce exposure to immediate shocks and reshape the energy system over time.

Electrification is the only pathway that achieves this. But it will only succeed if electricity is abundant and affordable.

The lesson of this crisis is therefore clear. The UK does not just need more clean power – it needs a fundamentally different energy strategy, built on electrification, minimising costs and resilience.

Without it, households will remain exposed to repeated price shocks, businesses will face persistently high costs and the transition itself will fail.

Endnotes

1 https://media.rac.co.uk/petrol-and-diesel-increase-by-record-monthly-amounts-in-march

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14 https://www.energy-uk.org.uk/news/energy-uk-urges-government-to-get-on-target-with-bill-support/

15 At peak, the Jackdaw field is expected to produce around 2.5 billion cubic metres of gas per year, equivalent to roughly 6.5 per cent of UK Continental Shelf output. Compared to UK liquid natural gas imports – around 13 billion cubic metres in recent years – this implies a central estimate of close to 20 per cent. However, liquid natural gas imports are highly variable and can rise materially in tighter market conditions, as seen during the energy crisis.

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