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KING'S College LONDON
WAR STUDIES

A strategic security review of British homes

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The *Home Front*

ABOUT E3G

E3G is an independent think tank working to deliver a safe climate for all.

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Foreword

Lieutenant General (Retd) Richard Nugee CB CVO CBE

Former Defence Non-Executive Director for Climate Change and Sustainability

In June 2026 the Chief of Defence Staff, Air Chief Marshall Sir Rich Knighton, stated that the UK has entered the most dangerous time he has known. The threats of a re-ordering of the geopolitical world order are clear to see: from an era of benign peace and acceptance of respected international institutions such as the UN, the world has moved to a world of great power politics where strength appears to be the most relevant currency.

The threats take on a number of forms. The perception of US ambivalence to NATO, real or otherwise, has appeared to embolden the thinking of Russia's president Putin so that many of the NATO states close to the Russian border state that war between Russia and a NATO country is more likely than before – NATO Article 4 has been invoked twice in 2025. As a result, the European nations are rapidly increasing their defence spending.

Wars in Ukraine and the Middle East have led to very significant price rises for energy, as the UK is so dependent on oil and gas, and has not yet achieved clean energy independence, which would cushion the price rises. And with the triple shocks in rapid succession of the Covid pandemic, the war in Ukraine and the war in the Middle East, the fiscal position has made it harder to tackle the cost of living crisis and increase funding in public services, eroding faith in politics, political leaders and public institutions.

Resilience should be at all levels – from the personal, such as your home, to the local community to the national, such as national infrastructure. The framework of all development should in future be one of Triple Use, to combat multiple threats simultaneously. Triple Use thinking encourages development through a framework of Resilience, Defence and Sustainability. The outcome should also strengthen our economic position and bolster the country's political and institutional resilience.

This comprehensive, important and timely report addresses all these issues through the vital lens of the British housing stock – our homes. They are of course a critical need, yet also dependent on oil and gas for heating. Well known, tried and tested solutions exist, at a political, local and individual home level, to reduce that dependence, avoid big price spikes and increase resilience.

The report also covers the economy. Whilst it is obvious to say that energy prices have far reaching consequences well beyond energy, it is still true, and this report highlights the interconnected nature of energy and reliance on oil and gas to the whole economy, our preparedness and resilience – which includes political and economic resilience, essential for sustaining our defences.

Our defence and an improved livelihood in these turbulent times relies on strong government, a strong economy and strong resilience through a framework of Triple Use as much as traditional defence. This report, with its coherent, practical and realistic recommendations provides a much needed way to achieve this.

Executive summary

As demonstrated by the Russian invasion of Ukraine and ongoing war in the Middle East, geopolitics and its consequent energy shocks have inflicted a severe economic and social toll on the UK and its citizens. During a time when the nature of multilateralism is shifting, the UK must rethink what security means and how it can be resilient in the face of the turbulence and complexity of contemporary threats and challenges. This report shows how risks emerge and compound in one area crucial to UK security: its housing stock. Gas dependency of UK homes represents an Achilles heel to national security, and government must act urgently to shore up the home front to mitigate this structural and systemic threat.

The UK's "home front" – and its ability to support and function for the civilian population – is a central pillar of national resilience. However, the UK housing stock's dependence on gas is a significant vulnerability, posing **a severe and growing national security threat**, based on our assessment of the three compound risks:

1. **Threat to home front readiness:** 85% of British homes are heated using gas, almost half of which must be imported through just four infrastructure clusters.[1] The ability of aggressor states to target domestic infrastructure is a structural and crucial vulnerability, as is the risk of supply chain weaponisation and disruption as has been exposed in the Strait of Hormuz this year.

2. **Threat to economic and financial stability:** The UK's reliance on gas and exposure to recurring energy crises damages the UK economy and weakens public and household finances.

3. **Threat to political legitimacy and social security:** Pressure on public finances makes it harder for the state to take the action required to mitigate the impacts arising from the UK's gas dependence, leading to a broader feeling that society cannot be protected. This risks democratic and political legitimacy itself, which is amplified by disinformation over clean energy.

[1] Energy UK, **Fuelling the future: Prioritising the gas transition for Net Zero**, accessed 20/05/2026

Decisive action on the electrification of British housing is an investment in long-term durability and security of the state and its people, while delaying such action puts the UK at great risk. It is not geologically possible for the UK to secure short- or long-term energy security though its 85–93% depleted North Sea oil or gas reserves, while compounding climate effects risk further deterioration of security.[2]

Strengthening the resilience of British homes improves deterrence, restores public confidence and reduces the UK's exposure to attack. The government can either act to urgently shore up the home front or keep courting catastrophe.

Top recommendations for government to consider

1. Launch a **national "Home Front Mission"** to accelerate electrification of UK homes and establish a plan to phase out oil and gas for home heating.
2. Prioritise a more strategically **decentralised**, more secure energy system at pace.
3. Prioritise **diversification of supply chains** for clean energy technologies and develop incentives to maximise **UK manufacturing**.
4. Identify gas dependence as a **security threat** and classify it as a "**chronic risk**" in the National Risk Register.
5. Government and Joint Intelligence Committee to launch a **joint inquiry** into action by hostile states, malign actors and special interest lobbyists to spread **disinformation** regarding clean energy.

I. Threat to home front readiness

Home front readiness, resilience, and preparedness are vital deterrents to aggression and are fundamental commitments to NATO.[3] However, the UK's gas-dependent housing stock undermines its ability to present a credible deterrence. 85% of UK homes are reliant on four highly centralised gas infrastructure sites, where major pipelines meet their associated refining, processing and distribution centres, for continuous, high-volume supply of gas as a heating source:

1. St Fergus Gas Terminal on the northeast coast of Scotland (25–50% of UK gas supply)
2. Bacton hydrocarbon gas processing plant near Great Yarmouth (up to 33% of UK gas supply)
3. Isle of Grain LNG Terminal in Kent (up to 25% of UK gas supply)
4. South Hook & Dragon LNG Terminal near Milford Haven (up to 20% of gas supply).

[2] Uplift, **The Declining Economics of the North Sea**, November 2025; ECIU, **Around 90% of UK North Sea oil and gas 'already drained dry' – analysis**, March 2026

[3] NATO, **Resilience, civil preparedness and Article 3**, November 2024

Clustered gas infrastructure positions present serious defence challenges and are not rapidly repairable in the event of attack. The pipelines are actively being scoped by highly capable undersea warfare and seabed sabotage divisions.[4]

In contrast, the UK's existing and expanding electricity network consists of over 1.7 million renewable generation sites.[5] These renewable generators require no wider system of international fuel imports to operate. To supply electricity when renewable generation is not sufficient, the UK has 33 combined cycle gas power stations,19 open cycle gas power stations, 10 interconnectors[6] and an increasing number of storage assets.[7] This system is expanding and getting more decentralised each year. The system is using less gas each year and with new energy technologies such as hydrogen storage and batteries there is the potential to remove the dependency entirely.

The UK's reliance on gas for home heating also exposes it to supply chain weaponisation and disruption. These threats become more acute and potentially lethal if adversaries were to "weaponise winter" through assault on civilian infrastructure.[8] The Russian invasion of Ukraine and the war in Iran have exposed the catastrophic consequences to the UK of relying on centralised fossil fuels for energy security. The UK's own North Sea oil and gas reserves are also around 85–93%[9] depleted and the country will be importing more than two-thirds of its gas by 2030, however many new licenses are issued.[10]

Core threats identified are:

Threat	Likelihood (low–high)	Impact (low-high)	Resilience / recoverability (low–high)	Threat level (low–critical)
1a – Gas supply chain disruption and weaponisation	High	Medium	Low	Severe
1b – Critical infrastructure attacks	Medium	High	Low	Critical
1c – Catastrophic events (non-attack)	Low	High	Low	Severe
Overall judgement				Severe

[4] RUSI, **Stalking the Seabed: How Russia Targets Critical Undersea Infrastructure**, May 2023

[5] Department for Energy Security and Net Zero, **Regional renewable electricity in 2024**, September 2025

[6] Department for Energy Security and Net Zero, **Next steps for electricity interconnection in Great Britain**, March 2026

[7] Analysis from **Digest of UK Energy Statistics** table 5.11

[8] Reuters, **Ukraine is showing why electrification is key to Europe's energy security**, February 2026

[9] ECIU, **Around 90% of UK North Sea oil and gas 'already drained dry' – analysis**, March 2026

[10] Renewable UK, **Can North Sea oil and gas really power Britain's future?**, September 2025

The solution is to accelerate energy system decentralisation through strategic deployment of renewables, which have proven to be more resilient and repairable in conflict and sabotage scenarios.[11] Since Russia's full-scale invasion of Ukraine in 2022, the Russian military has systematically targeted energy infrastructure supplying civilians' basic needs – particularly for heating - prompting a rapid shift by Ukraine to build more decentralised renewables.[12] The UK must also reduce gas demand to mitigate its overdependence and electrify heat to support this more defendable energy system. Homes themselves must also be made more resilient to shock and catastrophic events by deploying at a faster pace technologies like solar panels and batteries, which when combined can reduce electricity consumption by more than half.[13] Homes themselves can thereby become nodes of resilience in a wider security architecture.

Key recommendations

Home Front Mission

Number 10 to launch a national "Home Front Mission" to accelerate electrification of UK homes and establish a plan to phase out oil and gas for home heating.

Decentralise and defend

The Department for Energy Security and Net Zero, in collaboration with NESO, to prioritise delivery of a more strategically decentralised energy system at pace. Also, in collaboration with the Ministry of Defence, to mandate inclusion of dual-use equipment for offshore energy assets.[14]

Spitfire technologies

The Department for Energy Security and Net Zero to accelerate the deployment of "spitfire technologies" such as heat pumps, solar PV, batteries, and energy efficiency measures, boosting UK production of all these technologies and diversifying supply chains.

[11] University of Oxford, **Enabling and Ensuring a Net-Zero Aligned Carbon Market for Ukraine**, November 2025

[12] FCDO, **Russia's systematic attacks against Ukraine's civilian energy infrastructure: Joint statement to OSCE Ministerial Council 2025**, December 2025

[13] Green Match, **Average Monthly Electricity Bill With Solar Panels UK (Guide 2026)**, October 2025

[14] E3G, **Empowering Europe: Delivering the security and economic benefits of North Seas wind**, January 2026

II. Threat to economic and financial stability

The UK economy is highly exposed to the volatility of international gas markets, with gas setting the price of electricity 60%–85% of the time.[15] Price shocks impact individual households directly via increased energy bills; the war in Ukraine has already cost the average household £2,200 due to higher energy bills.[16] The ongoing conflict in the Middle East has led to Ofgem raising the energy price cap in the summer of 2026 by 13% – pushing energy bills up by an average of £221a year.[17]

Households and small businesses are further impacted by inflation and interest rate rises that multiply the severity of energy shocks and continue to cause economic damage even after energy prices fall. By November 2025, Russia's war in Ukraine and resultant energy crisis had cost the government £183 billion, detracting from other key areas of spending such as healthcare and defence.[18] Inflation coupled with suppressed demand harms growth and public finances, while the accumulation of unsecured debt combines with these factors to threaten stability of the financial system. Further risks to both financial systems and households propagate through mortgage and insurance markets.

The core threats identified are:

Threat	Likelihood (low–high)	Impact (low–high)	Resilience / recoverability (low–high)	Threat level (low–critical)
2a – Inflation and inability to absorb increased costs and bills	High	High	Low	Severe
2b – Loss of financial agency and impact on societal security	Medium	High	Low	Substantial
2c – Impact on productivity and growth projections which then impact cost of debt	High	Medium	Low	Substantial–Severe
2d – Lower fiscal headroom and increased cost of debt-servicing	High	High	Low	Severe
Overall judgement				Severe

[15] Gov.uk, **Decisive action to break influence of gas on electricity prices**, April 2026; ECIU, **Marginal Gains. How wind is pushing gas out of the power market and cutting costs**, October 2025

[16] E3G & ECIU, **Cost of the fossil fuel crisis in the UK**, November 2025

[17] The Times, **Energy price cap surge to push up bills by £221 in July**, May 2026

[18] E3G, **Cost of the fossil fuel crisis in the UK**, November 2025

These risks place energy efficiency, heating electrification and market reform firmly within the remit of macro-economic risk management. For central banks, the goal should be to incorporate energy-system vulnerabilities into a clearer assessment of how external shocks translate into domestic financial pressures. For government, the implication is unambiguous: stabilising the energy–inflation–interest rate cycle requires reducing the economy's exposure to fossil-fuel volatility at its source.

Key recommendations

Affordable electrification

Treasury to prioritise action to make home electrification affordable and ensure it is cheaper to use a heat pump than a gas boiler.

Break the link between gas and electricity

Reform the electricity market to break the link between the price of gas and the price of electricity to encourage electrification and ensure the cheaper price of renewables generation reaches the consumer.[19]

Security and Resilience Bond

HMT to a launch a sovereign Security and Resilience Bond to accelerate investment in the electrification of the UK economy, including its housing stock, and deliver resilience for UK infrastructure and communities to the impacts of climate change. Thematic bonds tend to attract higher prices and be less vulnerable to capital flights during times of crisis.

III. Threat to political legitimacy and societal security

The UK's geopolitical and diplomatic legitimacy is undermined by the inability to produce security where it is felt by people: in homes. This has led to lower trust in politicians, openness to dis- and misinformation and a reduced adaptive capacity within society. This can be self-reinforcing, as people are more likely to believe disinformation if they distrust public institutions.[20]

[19] Commonwealth, **Fixing the Price: How a Single Buyer Model Could Slash UK Electricity Prices and Build Consent for the Clean Power Mission**, June 2026

[20] Ofcom, **https://www.ofcom.org.uk/media-use-and-attitudes/online-habits/online-nation**, December 2025

The core threats identified are:

Threat	Likelihood (low–high)	Impact (low–high)	Resilience / recoverability (low–high)	Threat level (low–critical)
3a – Degradation of political legitimacy; government is not viewed as willing or able to resolve (existential) concerns or meet basic needs	High	High	Low	Severe
3b – Loss of political agency; recurrent crises render political power and independent decision making difficult to exercise	Medium	High	Medium–High	Moderate
3c – Mis- and disinformation; the population is susceptible to campaigns of mis- and disinformation	High	High	Low	Severe
3d – Societal insecurity; a sense of personal and community insecurity, that society is dysfunctional and that basic needs cannot be met	High	High	Medium–High	Severe
3e – Weakening of democratic system; democratic values are challenged; democratic institutions undermined; democratic trust is low	High	High	Low	Critical
3f – Loss of adaptive capacity; the ability of governments and people to be willing to adapt to changing circumstances and climate, operate strategically, or escape a cycle of short-term crisis management	Medium–High	High	Low	Severe
Overall judgement				Severe–Critical

The key weakness of fossil fuel dependency lies in climate and health impacts, and in the loss of autonomy and agency over decision-making at the level of national policy setting and the individual household. Fossil fuels also drive inequality. Fossil fuel dependence hits the poorest households in society hardest. In 2024, households spent, on average, 8% of their income on energy,[21] but for low-income households this goes up to as much as 41%.[22] This drives wealth inequality, which disconnects voters from politics and erodes the faith that government can address the very challenges that threaten them.

There is a well-established relationship between widening inequality, economic stress and political instability. Historical work by Luke Kemp[23] identifies inequality as a recurring feature in cases of societal breakdown across all of recorded history. Addressing this risk requires a re-democratisation of energy that is local, affordable and does not produce further wealth inequality and negative climate outcomes.

Hostile states, malign actors and special interest lobbyists are also deliberately sowing division on clean energy to slow the energy transition, to keep the UK fossil fuel dependent and vulnerable and to use economic hardship produced by fossil fuel crises to undermine social cohesion.

Key recommendations

Decentralise and electrify

The Department for Energy Security and Net Zero to prioritise decentralisation of UK energy and storage to communities and households. To include significantly expanding community energy and providing more grant funding for home electrification and adaptation.

Fossil fuel dependency on National Risk Register

Cabinet Office to classify the risk of fossil fuel dependency for home heating as a distinct and "chronic risk" in the next edition of the National Risk Register, defined as a threat to "our economy, community, way of life, and national security" manifesting over a decades-long timeframe, requiring a robust government-led response – all of which applies directly to fossil fuel reliance.

Combat disinformation

Government and Joint Intelligence Committee to launch a joint inquiry into action by hostile states, malign actors and special interest lobbyists to spread disinformation regarding clean energy to perpetrate fossil fuel dependence and sow division.

[21] Bank of England April 2026 Monetary Policy Report

[22] Citizens Advice, **Essential bills "eating away" at incomes of lowest earners**, Mar 2025

[23] Luke Kemp, **Goliath's Curse**, 2026

Conclusion

Fossil fuel dependency is a persistent, recurring, and compounding national security threat, especially in relation to the gas reliance of UK homes for heating. It is at the core of most vulnerabilities of the UK's housing stock and exacerbates conditions of insecurity and other threats to life and livelihoods.

The stakes are high, but so is the potential for making a significant intervention to improve the UK's structural vulnerabilities. If decisive action is taken to electrify homes, the UK will be better positioned to reduce its exposure as a target for sabotage or coercion, withstand macroeconomic turbulence, address climate insecurities and restore public confidence in the state's ability to provide security.

Introduction

The United Kingdom is in a more precarious position today than at any time since the Cold War. The country is witnessing the deterioration of established security alliances, and an acceleration of unprecedented economic and societal disruptions. Consequently, citizens' faith in the ability of its democratic institutions to tackle today's challenges is at an all-time low, while populism and authoritarianism have returned to the political stage.[24]

Energy – at home and abroad – is both symptomatic and a driver of friction in this ordering process, whether that be the sabotage of critical infrastructure, geopolitical dependencies of energy trading, the constitution of the UK's energy system, or people, communities and public finances hamstrung by mounting energy debt. Central in this context are homes as a key security issue: a place where people experience (in)security and where geopolitics and security policy play out.

UK homes' reliance on fossil fuels is a strategic security vulnerability

At the heart of British energy policy is the British housing stock. UK homes are overwhelmingly reliant on natural gas and are among the least energy efficient in Western Europe.[25] 85% of the UK's ~30 million homes are heated by gas boilers, collectively consuming more than one-third of all gas used in the UK annually.[26] Roughly half of this gas is imported.[27]

The UK's overwhelming reliance on gas for home heating (Figure 1) is a strategic security vulnerability in terms of security of supply, via international chokepoints subject to instability and disruption,[28] and physically due to operational dependence on constant supply of gas via highly centralised, vulnerable critical infrastructure. This structural reliance on a commodity prone to supply disruption and price volatility, when coupled with inefficient housing stock, poses broader and more systemic threats to economic and financial stability. In turn, this has significant impacts on individual households and people's sense of financial agency as well as the state's ability to provide security to its people.

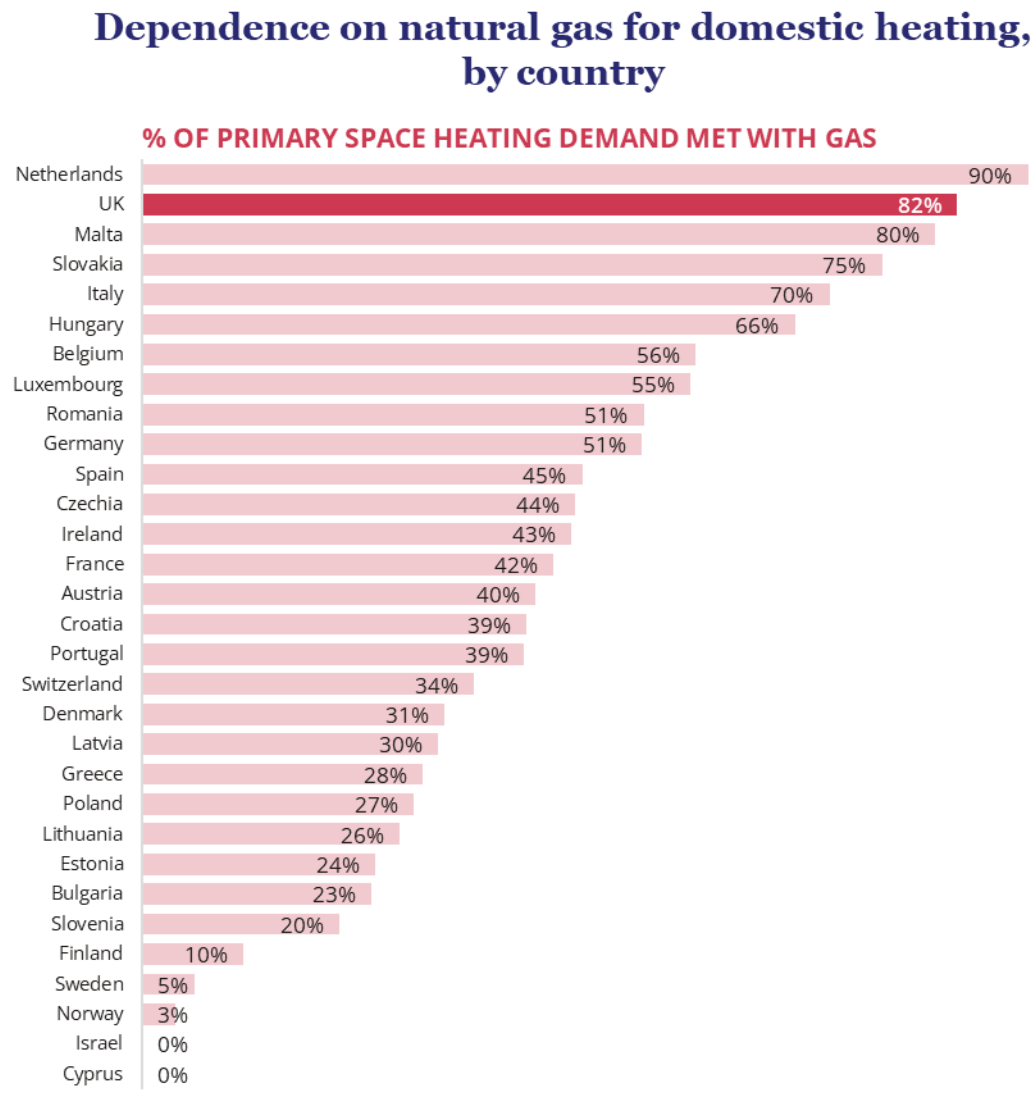
[24] National Centre for Social Research, **Significant questions raised about the future of Britain's democracy**, June 2025

[25] Energy Security and Net Zero Committee, **Retrofitting homes for net zero**, May 2025

[26] Department for Energy Security and Net Zero, **Hydrogen Heating: overview**, December 2024; Energy UK, **Fuelling the future: Prioritising the gas transition for Net Zero**, accessed 20/05/2026

[27] Department for Energy Security and Net Zero, **Digest of UK Energy Statistics (DUKES) 2025**v, July 2025

[28] E3G, **Beyond Securing Supply: Chokepoint risk for oil and gas importers**, March 2026



Source: *Fraunhofer ISI, August 2022, [New data set reveals the natural gas dependency of space heating in several EU countries](#).*

Figure 1: 82% of UK homes are reliant on gas as a primary source of heating, more than almost any other European country.

This reliance also entrenches broader societal security consequences ranging from poor health outcomes to community alienation, to susceptibility to misinformation and loss of faith in democratic institutions. This in turn deepens vulnerabilities connected to perceived lack of political legitimacy, making the UK more exposed to political crises which the government has limited capacity to address. This has also exposed weaknesses in the democratic fabric of our political system.

These are very real security issues stemming from and consistently affecting UK households. They require solutions that cannot just address the fallout from the latest military–economic–societal crisis, but which proactively break the cycle of insecurity originating from our carbon-constrained energy system. To truly regain control of its core challenges (sustaining economic growth, providing security and addressing the cost of

living), the government must establish the conditions for security by ending the country's reliance on fossil fuels in homes, climate-proofing homes, and producing security policies that centre on the home as the place where (in)security is felt.

The aim of this report is to interrogate the threats posed by the current state of the British housing stock and fossil fuel dependency. This is what we call "the Home Front". We will consider the steps required to mitigate threats to the home front, drawing on a whole-of-society approach understood through the lens of British homes. We aim to show that tackling home front weaknesses is a key mechanism through which the UK can address some of its key vulnerabilities, its economic agency and its societal security.

Methodology

The **aim** of this report is threefold:

1. To **assess** the strategic threat posed to UK national security by the current composition of UK housing stock.
2. To better **understand** the multipolar nature of this threat.
3. To **identify** what proactive measures should be taken to reduce the threat level.

This report focuses on the defining energy characteristic of British housing relative to the housing stock of comparable economies, which is heavy reliance on gas for heating and, to a lesser extent, poor energy efficiency.

To define and assess the strategic vulnerability that the UK's housing stock poses in security terms, E3G and the Department of War Studies at King's College London have conducted a literature review of work that concerns the relationship between domestic dwellings and security. We have also consulted with a range of expert security stakeholders, including the Royal United Services Institute (RUSI), the European Institute for Energy Studies, the Regulatory Assistance Project, NATO, and the EU Institute for Security Studies.

We categorise threats to national security posed by the UK housing stock as threats to:

1. **home front readiness** and UK security capacity
2. **economic stability** and shock resilience
3. **political legitimacy** and societal security.

Figure 2 summarises some of the key ways through which these threats manifest and how they are interconnected. In the following three chapters we treat these threats in turn, scrutinising each specific threat identified using a variation of the HMG risk assessment

framework, derived from the HMG Orange Book (Management of Risk)[29], the National Security Risk Assessment (NSRA) and National Risk Register[30], and Joint Intelligence Committee (JIC) assessments. We consider threat in terms of **likelihood** (intent, capability, imminence, vulnerability) × **impact** (human, economic, national security, societal, political/reputational), considering also **resilience and recoverability** (resistance, continuity, recoverability, adaptability). Definitions of these terms can be found in Annex A: Glossary.

We measure the overall threat to national security using the National Threat Levels Framework (Low, Moderate, Substantial, Severe, Critical).[31]

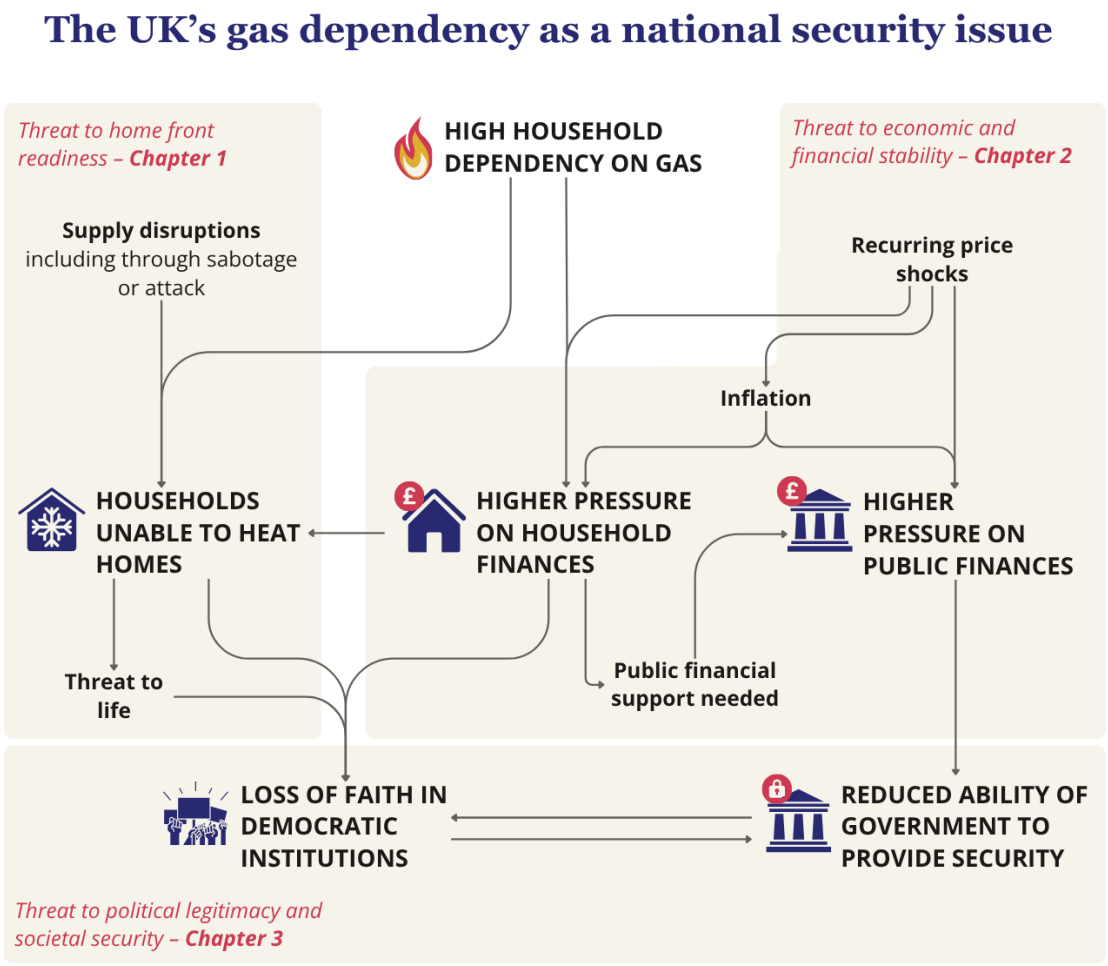


Figure 2: UK homes' reliance on natural gas is a strategic security vulnerability. This figure presents a simplified summary of the routes through which this vulnerability manifests, resulting in security threats to both individual households and the country as a whole. These mechanisms are discussed in more detail in Chapters 1–3; intersections between these three areas resulting in hybrid threats are identified in Chapter 4.

[29] Government Finance Function & HM Treasury, **The Orange Book Management of Risk – Principles and Concepts**, June 2025

[30] UK Cabinet Office, **National Risk Register 2025**, January 2025

[31] Gov.Uk, **Terrorism and national emergencies**, accessed 20/01/2026

However, traditional government risk assessments fall short in their ability to analyse future, existential threats such as security or climate risks especially where they assume manageability, where they flatline compound risks and where they do not explicitly name risk cascades and systemic risks. For example, fossil fuels have not been identified as a national security risk despite clear indication that they are detrimental to individual households' energy price exposure, the susceptibility to geopolitical vulnerability and overall climate and health outcomes for people. We have therefore complimented this framework with the standards of catastrophic risk studies to ensure a wider, more in depth analysis which speaks to longer time horizons including addressing concerns around hazard, vulnerability, exposure and response.

In Chapter 4, we additionally categorise hybrid threats arising from the intersection of two or more of the threats identified in the preceding chapters. Overall, we conclude that the current composition of UK housing stock, defined largely by heavy reliance on imported gas and poor energy efficiency, **poses a** severe **–** critical **strategic threat** to the UK's national security.

Chapter 1: Home front readiness

Leo Vincent, E3G

> *"To have a strong military deterrence, we need a resilient homeland. If we want to build a resilient country, low-carbon energy is a very important component"*
>
> **LIEUTENANT GENERAL (Retd) RICHARD NUGEE CB CVO CBE**
> **Non-Executive Director Former Defence Climate Change and Sustainability**

Home front readiness is the functioning of a civilian population and domestic infrastructure. It is a central pillar of the UK's national security. The same can be said for resilience, the capacity of a society to absorb shocks, adapt to disruption and recover quickly from crises. The UK's home front readiness and resilience are also vitally important within the context of its security alliances. Article 3 of the North Atlantic Treaty states that:

> *"In order more effectively to achieve the objectives of this Treaty, the Parties, separately and jointly, by means of continuous and effective self-help and mutual aid, will maintain and develop their individual and collective capacity to resist armed attack."*[32]

Fundamental to Article 3 are the principles of national resilience and civic preparedness, with the UK government committed to planning for continuity of services, infrastructure protection, and societal resistance to shocks – in peacetime, during crises, and during armed conflict.[33] This includes more recent declarations by allies, including the UK, of the responsibility to enhance national and collective resilience.[34] The second of NATO's so-called "Baseline Requirements" of civic preparedness is "*Resilient energy supplies: ensuring a continued supply of energy and having back-up plans to manage disruptions*".

And while home front readiness, resilience, and preparedness are each recognised as important in the 2025 Strategic Defence Review, which does call for a whole-of-society approach to strengthening national resilience as vital for a credible deterrence, it is narrowly focused on "hard security".[35]

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[32] NATO, **The North Atlantic Treaty**, April 1949
[33] NATO, **Resilience, civil preparedness and Article 3**, November 2024
[34] NATO, **Strengthened Resilience Commitment**, June 2021
[35] The Chicago Council on Global Affairs, **Why is Sweden Telling its Citizens to Prepare for War?**, January 2024

The UK's lack of societal and economic resilience is striking and stark. 40% of food is imported and exposed to weather disruption or trade friction; the National Health Service operates near capacity and is vulnerable to surges and crises; digital infrastructure and telecommunications underpin many components of life and the economy. Across domains the UK has limited outage planning and civic contingency awareness is low.[36]

The UK's housing stock also poses a serious and systemic strategic threat to home front readiness. Homes are overwhelmingly (and increasingly) reliant on the vulnerable and volatile import of natural gas, particularly for heating in the colder months. The critical infrastructure that makes these imports, followed by processing and delivery, possible is densely clustered and centralised, making it exceptionally vulnerable to attack. The UK's inability to withstand or respond effectively to the threats of espionage, sabotage, or catastrophic events (such as major outage or conventional attack) on this infrastructure exposes its unpreparedness further.

UK homes' critical gas supply vulnerability

The UK has enjoyed a significant dividend from an unprecedented era of relative peace, the globalisation of hyper-efficient supply chains, and exponential technological advancement coinciding and complementing one another. However, efficiency and globalisation cut both ways, and the complexity and inter-reliance of these supply chains also means they are always exposed and fragile. At the same time, the effects of the persistent underinvestment in critical infrastructures, climate preparedness and the UK's housing stock materialise. Many supply chains have been identified as vulnerable, including food, minerals, information technology, pharmaceuticals, and – significantly – gas imports, with a large and disproportionate share of gas consumption used for domestic heating (Figure 3).

To add to the issue, the UK's economically viable North Seas gas reserves are in terminal decline – already depleted by between 85% and 93%.[37] It is estimated that more than two-thirds of gas will need to be imported from overseas by 2027, rising to 94% by 2050.[38] Therefore, if the UK does not undergo an accelerated transition to electrified heat, in just 20–30 years it will be effectively entirely reliant on imported gas for home heating.

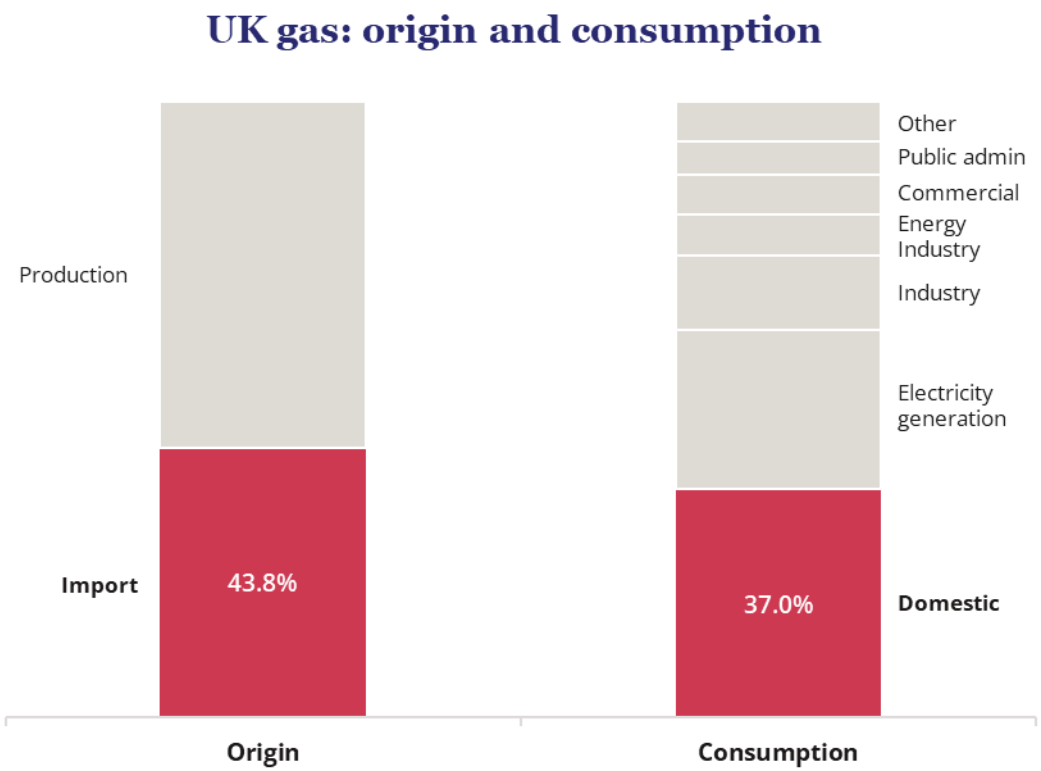
Securing energy security by "doubling down" on North Seas oil and gas is doomed to fail. Regardless of the speed and volume of extraction, North Sea gas is simply too depleted to provide a route to energy security. We can come to this conclusion before even considering the severe economic costs and livelihood threat that the climate impacts resulting from an attempt to pursue a future powered by fossil fuels would bring. In the foreword to a recent consultation on gas security, the Department for Energy Security and Net Zero concludes:

[36] Department for Food, the Environment and Rural Affairs, **UK Food Security Index 2024**, July 2024

[37] Uplift, **The Declining Economics of the North Sea**, November 2025; ECIU, **Around 90% of UK North Sea oil and gas 'already drained dry' – analysis**, March 2026

[38] Renewable UK, **Can North Sea oil and gas really power Britain's future?**, September 2025

> *"Our supply of gas from the UK Continental Shelf has been falling for the last 25 years, reflecting the fact it is a super mature basin that peaked a quarter of a century ago. That is an inescapable geological fact that no amount of new exploration or drilling will meaningfully mitigate."*[39]



Source: *Department for Energy Security and Net Zero, **Digest of UK Energy Statistics Annual data for UK, 2024**, July 2025*

Figure 3: In 2024, the UK imported almost half of the gas it consumed. More than a third of the UK's total gas consumption was used in homes (predominately for heating) – 10 percentage points more than the next highest consuming sector: power generation.

Some in the energy industry have proposed fracking and the use of shale gas as a potential solution to this domestic supply decline, but this is also not viable. Conclusive evidence on volume of proven reserves and resources (the recoverable quantity) does not exist, but one study from Warwick Business School has suggested that UK production of shale gas could possibly meet 17–22% of domestic gas consumption over 2022–2050, while making clear that this "[would] be to mask the declining production of the UK [continental shelf] and displace a limited quantity of imports".[40] UK shale formations are complex and limited, drilling costs are high, infrastructure development to sustain fracking would be protracted, past ventures have had to be halted after works caused earth tremors, the risk to polluting

[39] Department for Energy Security and Net Zero, **Gas System in Transition: Security of Supply**, February 2026
[40] University of Warwick, **The Role of Shale Gas in the UK Energy System**, March 2020

the water table is significant, and local and public opinion is largely against fracking.[41] And all this before we even consider the financial, security and climate costs of such new exploration at a time when renewables are the cheapest form of energy generation.[42] Simply put, gambling the country's energy security on less than three decades worth of unproven, unpopular, and costly shale gas and fracking is not something any serious government would consider.

For several years now the fossil fuel industry, facing existential risks as the energy transition accelerates and the shelf life of fossil fuel infrastructure comes ever closer, has also championed piped hydrogen and biogas as an alternative to natural gas for home heating with boilers, but this has widely and consistently been acknowledged as unfeasible, dangerous and unaffordable in studies conducted by independent experts.[43]

At the same time, the UK's reliance on vulnerable international gas (and oil) supply chains and chokepoints has been consistently and painfully exposed. In 2021, the blocking of the Suez Canal by the container ship Ever Given halted about 12% of global trade – including the daily passage of around one million barrels of oil and roughly 8% of the world's liquefied natural gas. This event delayed an estimated £7 billion of goods daily and put intense pressure on UK ports to manage a backlog of consumer goods and industrial components. The six-day blockage increased global shipping container prices by 40%, causing shipping delays of up to 15 days for UK imports and impacting key sectors like timber.[44]

Far more significantly, geopolitical tensions and the subsequent Russian invasion of Ukraine in February 2022 drove a surge in global gas prices, contributing to UK household energy bills increasing by about £700 per year in April 2022 and a further rise of around £1,600 by October 2022 under the price cap.[45] Russia's invasion resulted in a surge in wholesale and retail energy prices, with inflation rising to a four-decade high.[46] By mid-2023, the government had spent £40 billion protecting households and businesses from spiralling energy bills over the winter.[47] By November 2025, E3G and the Energy and Climate Intelligence Unit calculated that the resulting energy crisis had cost the government £183 billion.[48] For context, that's twice the UK's total defence spending for the 2025–26 financial year.[49]

As recently as March of this year, the US/Israeli led war in Iran and the wider Middle East is set to inflict yet another energy crisis on British homes – if not an energy crisis that is

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[41] ECIU, **Fracking in the UK**, February 2015

[42] United Nations, **Renewables: Cheapest form of power**, July 2022

[43] Hydrogen Insight, **'Time to stop the fight' | 32 independent studies slam the widespread use of hydrogen for heating**, October 2022

[44] BBC, **The cost of the Suez Canal blockage**, March 2021

[45] House of Commons Library, **Gas and electricity prices during the 'energy crisis' and beyond**, February 2026

[46] Office for Budget Responsibility, **The cost of the Government's energy support policies**, October 2023

[47] Department for Energy Security and Net Zero**, £40 billion spent protecting families and businesses from energy costs**, June 2023

[48] E3G, **Cost of the fossil fuel crisis in the UK**, November 2025

[49] House of Commons Library, **UK defence spending**, October 2025

unprecedented in its scale. In response to attacks from the US and Israel, Iran has targeted ships in the Strait of Hormuz – a vital transit chokepoint for over one-fifth of global natural gas supplies and about 20% of the world's oil. The threat of attack on these trade vessels alone led to a surge in maritime insurance premiums, effectively closing the shipping lanes for 20% of the world's energy.[50] This supply chain disruption resulted in wholesale gas prices rising 50% in a matter of days.[51] The conflict and long-term uncertainty over wholesale energy prices led energy companies to pull fixed energy deals, with British consumers left highly exposed to the price chaos, vulnerable to profiteering and at the mercy of resultant inflationary pressures.[52] As a result of the conflict, Ofgem announced a 13% increase of the price cap for the period covering 1 July to 30 September 2026 – which will increase household energy bills by an average of £221 a year.[53] The Guardian reported cases of the price of heating oil, which is not covered by Ofgem's energy price cap, rising 179% in the weeks following the start of the conflict and prices have remained high. An estimated 1.7 million households use oil as a primary heating source, and in Northern Ireland it is the primary heating source for two-thirds of homes.[54]

British homes' near total reliance on the operational continuity and security of oil and gas supply chokepoints represents a critical vulnerability. Many of these chokepoints are located in geopolitically unstable parts of the world, an insecurity due in part to domestic and foreign power struggles attempting to control the vast value of fossil fuel deposits and the significant levels of impunity that some fossil fuel powers have operated with. The narrow and concentrated nature of a chokepoint is an obvious part of their inherent vulnerability. Chokepoints are highly exposed to accidental and market disruption, weaponisation and regional conflict, natural disasters, and even continuation and security of contingent supply chains.[55]

Conversely, the supply chains that deliver home-grown renewable energy are easier, and indeed possible, to bring more within the UK's operational control, providing vital insulation from the chaos of international fossil fuel markets. The UK is not, of course, looking to bring the entire global renewable energy supply chain under its immediate geographical operational control; doing so would not work financially, be logistically practical, or advantageous from the perspective of adaptability. However, clean energy supply chains are – much like renewable energy systems themselves – fundamentally more secure than their fossil fuel counterparts.

The supply chains supporting the clean energy transition move equipment and materials that, once installed, generate power domestically for decades. Disruption to these supply chains only temporarily slows development of additional renewable capacity and

[50] University of Michigan News, **The new masters of war: Insurance companies**, March 2026

[51] The Independent, **How the Iran-US war could affect cost of living in the UK – from energy bills to petrol and groceries**, March 2026

[52] BBC, **UK firms pull fixed energy deals as Iran war pushes up prices**, March 2026

[53] The Times, **Energy price cap surge to push up bills by £221 in July**, May 2026

[54] The Guardian, **UK households that use heating oil face 'frightening' surge in bills over Iran war**, March 2026

[55] E3G, **Chokepoints: A systemic threat to energy security for oil and gas importers**, March 2026

replacement of existing stock, rather than cutting off supply to power generation or domestic heating. Furthermore, each delivery reduces long-term fossil fuel dependence, rather than adding new exposure – UK investment in wind power has already saved consumers around £104 billion between 2010 and 2023 by lowering electricity prices and reducing demand for natural gas, which has helped offset rising gas costs.[56] Nevertheless, it is important to pursue diversification of suppliers of critical rare earth minerals and technologies and components that power renewables while protecting workers in often insecure supply chains, given that these are currently highly concentrated. There is a growing range of suppliers that the UK should look to partner with.

The UK can, and should, look to onshore more critical aspects of the supply chain, and maintain and expand those it currently hosts, such as its heat pump, EV and turbine blade manufacturing bases. Renewable technology resources and components such as batteries and magnets can be more effectively recycled, substituted, shipped flexibly, stockpiled and traded with close partners – and the UK must determine how to better achieve this. The UK must also investigate the extent to which it can procure and process critical rare earth minerals at home while developing resilient and diverse supply chains together with partners and in partnership with others.

It is also important to note that these risks exist for many (if not all) complex global supply chains reliant on import of manufactured goods, technology, and/or components, so securing clean energy supply chains goes hand in hand with securing broader product supply chains.

Beyond the UK's critically vulnerable reliance on gas supply, there is a more acute defence disadvantage at play, by virtue of the dense and centralised nature of the infrastructure that sustains domestic gas demand.

British infrastructure clusters

The UK's system for importing and processing natural gas – with the largest share of UK gas consumption used for home heating – is highly centralised, which is efficient but comes with significant security trade-offs.[57] Mirroring international supply chokepoints, the UK is reliant on four strategically vulnerable gas infrastructure clusters (Figure 4):

1. The St Fergus Gas Terminal located on the northeast coast of Scotland near Peterhead (25–50% of UK gas supply): supplied by the Norwegian Vesterled, Tampen Link, and Gjøa pipelines.
2. The Bacton hydrocarbon gas processing plant near Great Yarmouth (up to 33% of UK gas supply): supplied by the BBL pipeline from the Netherlands and the IUK interconnector from Belgium.

[56] University College London, **Wind power delivers £104 billion net benefit to UK consumers**, October 2025
[57] Macquarie, **Investing in Britain's critical gas infrastructure**, accessed 30/01/2026

3. The Isle of Grain LNG Terminal in Kent (up to 25% of UK gas supply).
4. South Hook & Dragon LNG Terminal near Milford Haven (up to 20% of gas supply).

These four clusters cannot be adequately defended because in an armed attack scenario other critical, civilian, and military infrastructure would simultaneously need defending, posing tough choices for command. Defending this type of "single point of failure" infrastructure is inherently difficult and doing so would mean diverting defence capacity from other strategically significant sites and assets such as densely populated urban areas, nuclear facilities, sites of military importance, and assets such as the fleet.

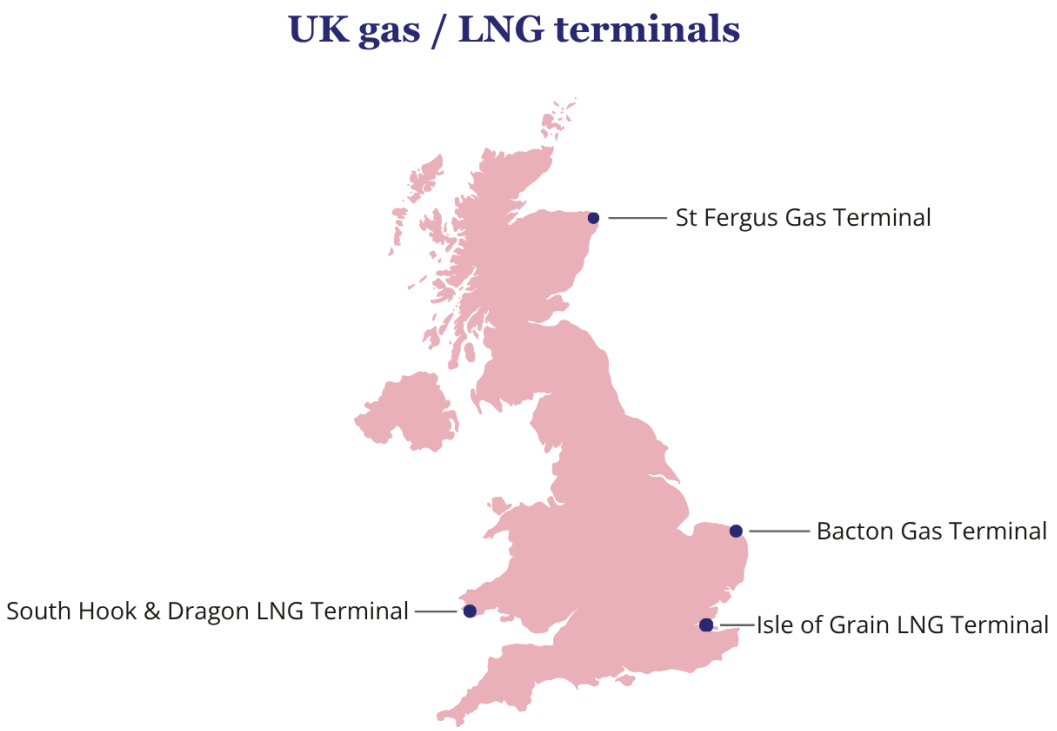


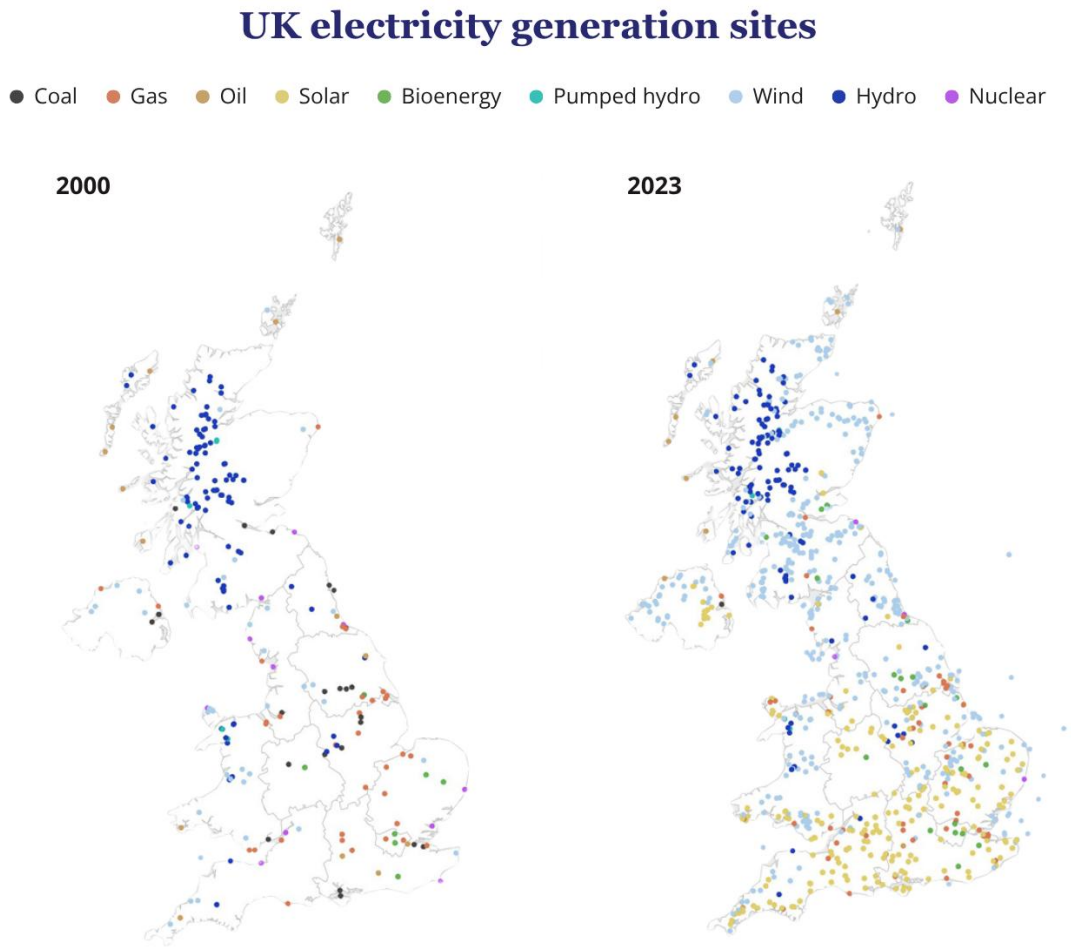
Figure 4: The UK's highly centralised gas import infrastructure, relying on just four terminals, is a strategic vulnerability.

Compared with the four major gas supply sites in the UK, the electricity generation infrastructure is much more decentralised. There are 132 large renewable generators in the UK,[58] and once you consider small assets this increases dramatically to over 1.7 million sites with renewable generators,[59] with this number growing fast. These renewable generators require no wider system of international fuel imports to operate. To supply electricity when the weather conditions stop renewables from generating enough power, the UK has 33 combined cycle gas turbine (CCGT) power stations, 19 open cycle gas turbine

[58] Analysis from **Digest of UK Energy Statistics** table 5.11

[59] Department for Energy Security and Net Zero, **Regional renewable electricity in 2024**, September 2025

(OCGT) power stations over 50 MW and 10 interconnectors[60] as well as an increasing number of storage assets.[61] This system gets more decentralised each year, as shown in Figure 5.[62]



Source: *Adapted from Department for Energy Security and Net Zero, March 2024,* ***Location of major UK electricity generation capacity since 1920***

Figure 5: Electricity generation in the UK has rapidly become more decentralised in recent decades with the rollout of renewable energy sites nationwide

The need to supply enough electricity to meet demand during peak periods is one of the more vulnerable aspects of the electricity system. NESO calculated that in the 2025–26 winter the UK had 6.1 GW of headroom (spare capacity), the equivalent of roughly 10% of average cold spell peak demand[63] or 6 average sized gas power stations. There are several

[60] Department for Energy Security and Net Zero, **Next steps for electricity interconnection in Great Britain**, March 2026

[61] Analysis from **Digest of UK Energy Statistics** table 5.11

[62] Department for Energy Security and Net Zero, **Location of major UK electricity generation capacity since 1920,** March 2024

[63] National Energy System Operator, **Winter Outlook 2025/26**, October 2025

particularly large power stations in the UK; if the three largest or more were taken offline, this headroom would be removed and the UK would need to lower its peak electricity demand, or import more electricity over the interconnectors. While a challenge, this could be managed. The system operator could look to reduce demand at peak times and times of low renewable output. For example, if 3 GW had gone offline (2–3 large gas power stations), and peak demand was 60 GW (roughly that of Great Britain currently), then demand would need to reduce by 5% at peak times. In this scenario, there would be sufficient electricity at other times and there would be abundant electricity when the renewable assets were generating.

The other vulnerable element of the electricity infrastructure is the transmission network, made up of transmission lines and other elements such as transformers. The map below shows the number and location of UK transmission lines and the ones set to be built within the next four years.[64]

These take electricity from where it is generated, or imported from other countries, to where it is used. The system operator designs the system so that if any one transmission line goes down, they will still be able to run the electricity system comfortably and so that in high-risk areas, they would be able to run the system if two lines go down. If more than one line were to go down for an extended period, some regions without large electricity generation capacity may require rationing. The UK is currently undertaking a large transmission network and renewable capacity expansion. The system operator is creating a Centralised Strategic Network Plan to plan where these assets should be located. Within this the System Operator should consider the defensibility and security of the energy system to mitigate these risks.

The UK's reliance on four centralised gas supply points is a strategic issue. Reducing this reliance by delivering home heating via electricity rather than gas would reduce this reliance. It would make home heating reliant on a more resilient system of decentralised and domestically generated electricity.

Sabotage and terrorism

Sabotage and terrorism threats are a very real and long-standing concern. In a trial related to the 2006 UK airline bomb plot, prosecutors presented evidence that suspects had studied and collected information on critical British infrastructure. Digital storage devices seized by police from a suspect's residence contained detailed information about locations including Canary Wharf, Heathrow and nuclear facilities. Evidence described in court as a "mine of information" relevant to terrorist planning also highlights another potential target: the Bacton gas terminal in Norfolk.[65]

[64] National Energy System Operator, **Beyond 2030: A national blueprint for a decarbonised electricity system in Great Britain** , March 2024

[65] The Standard, **Bombers planned to blast nuclear plants and Wharf**, April 2012 (accessed 14/01/2026)

Russian military intelligence (the GRU) is actively conducting "an escalating and violent campaign of sabotage and subversion against European and U.S. targets in Europe", with critical energy infrastructure a primary target.[66] The September 2022 sabotage of the Nord Stream pipelines served to highlight Europe's reliance on gas imports. Russia's Navy and Deep-Sea Research Institute (Gugi) continues to develop capacity and stalk the seabed, mapping and targeting the UK's undersea infrastructure.[67] European energy and information infrastructure is a priority target for the Russian shadow fleet (comprising over 1,000 vessels). Offshore wind infrastructure – the backbone of our future decentralised energy system – while inherently more resilient, also needs to adapt to the threat of sabotage.[68]

In April 2026, then Defence Secretary John Healey revealed to the public a month-long Russian submarine operation over British pipelines and undersea cables. An Akula class attack submarine and two Gugi spy submarines were involved in the operation concerning British critical infrastructure in northern British waters. Healey acknowledged that seabed pipelines were a "prime target" but much of the coverage and discussion that followed focused on undersea cables, rather than gas pipelines.

While the likelihood of a direct military attack on the British mainland by another sovereign state is still considered to be low, any comprehensive security analysis must consider a range of possibilities from the more likely (such as sabotage) to the less likely.

When considering the impact of sabotage on critical infrastructure, the relative downtime and repairability of different asset types (in this case gas pipelines and cables connecting offshore wind farms) are key to assessing threat. Repairing a major undersea gas pipeline that has ruptured (often explosively) and flooded is both timely and costly. The flooded interior must be cleared of corrosive seawater and chemically treated before it can once again become operational. Often, large bespoke structural replacement pieces must be manufactured and fixed to the damaged section, requiring hyperbaric underwater welding and procurement of other machinery.[69] Repair times vary depending on the extent of the damage, underwater depth of the incident, availability and proximity of specialised equipment, and conditions at the site.

The average repair time of a major gas pipeline incident is at least several months, if not over a year. Damage to the Kvitebjørn pipeline in the North Sea off the Norwegian coast in 2008 took five months to repair.[70] The Balticconnector gas pipeline between Finland and Estonia was shut down in October 2023 due to a rupture, a suspected act of sabotage possibly by Russia, taking six months to repair.[71] Perhaps most significantly, the Nord

[66] Centre for Strategic and International Studies, **Russia's Shadow War Against the West**, March 2025
[67] RUSI, **Stalking the Seabed: How Russia Targets Critical Undersea Infrastructure**, May 2023
[68] Jean-Charles Ellermann-Kingombe, speaking at the European Sustainability Week, 10 June 2025
[69] Ocean News & Technology, **Repairing Major Pipeline Damage on the Seabed**, October 2022
[70] Scientific American, **Frequent Breaks in Undersea Pipelines Mean Fixes Are Possible for Nord Stream**, October 2022
[71] Offshore Energy, **With offshore repairs done, Balticconnector about to restart after six-month shut-down**, April 2024

Stream pipelines are yet to be repaired following the sabotage that rendered them inoperable in 2022 (this is in part due to legal and geopolitical dispute).[72] Stats Group, market leaders in the supply of pressurised pipeline isolation, claim that "Since 2007, there have been several major pipeline damage incidents. Most of these incidents took more than 12 months to resolve".[73]

In contrast, repair of major undersea cables is relatively quick and simple, taking on average 4–6 weeks. The process requires the severed cable ends to be brought to the surface and spliced together, using specialised technical repair kits and relatively standard shipboard deployment. A major transatlantic cable near Iceland was repaired in just 14 days in 2022 after accruing damage from seismic activity.[74]

Catastrophic event

Any catastrophic event would have a large-scale impact on the whole gas network. Additional sites of vulnerability include oil and gas platforms in the North Sea. In a conflict scenario or sabotage event, these platforms present valuable targets, reducing Britain's ability to produce any meaningful volume of gas very quickly.

As of March 2023, there were 260 fixed oil and gas platforms in the UK's North Sea jurisdiction.[75] Little research has been done on the vulnerability of oil and gas platforms, and this should be commissioned. This oversight highlights where, so often in the security and energy space, a pretence of manageability of fossil fuel systems creates unaddressed security risks. The decentralised nature of renewables make them much less practical targets for armed attack or sabotage, as they physically are not "single points of failure", they can be repaired much more quickly, and supply redundancy can be built into this type of energy system (which is not a viable option with gas).[76] The Department for Energy Security and Net Zero acknowledges this, and has made clear that dispersed wind farms and solar panels are "harder to target" than fossil fuel power stations, meaning an energy system based on renewables boosts our national security and protects the UK from sabotage.[77]

Considering what impact a conventional attack on a critical gas terminal or pipeline could have also reveals another worrying and often overlooked risk to multi-boiler systems. Multi-boiler systems may comprise any number of large buildings, such as a hospital or block of flats, or district heating system such as a university campus. If an unexpected

[72] Atlantic Council, **Can Nord Stream really rise from the dead?**, April 2025

[73] Stats Group, **Have You Got A Deployment-Ready Emergency Pipeline Repair System?**, accessed 27/05/2026

[74] Leadvent, **Subsea Cable Maintenance & Repairing: Improving Reliability and Avoiding Downtime**, March 2022

[75] Marine Policy, Volume 152, **Offshore energy structures in the North Sea: Past, present and future**, Maria Clara Iruzun Martins, Matt ID Carter, Sally Rouse, Debbie JF Russell, June 2023

[76] Renewable UK, **New threats and new tools: reinventing energy security for an era of instability**, March 2026

[77] The Guardian, **Renewable energy will boost national security and protect UK from sabotage**, April 2026

event occurs, be that a natural disaster, cybersecurity incident, or physical security breach, a cascade (or chain-reaction across multi-boiler systems) can be triggered. The result can be extended downtime for multiple boilers and compromised safety at a widespread level.[78]

Either by sabotage or conventional attack, targeting gas infrastructure is a tactic of Russia's military. It can be met with limited resistance, is difficult to recover from at the necessary pace, and would have a catastrophic impact on British households in a UK context. For evidence of what this could realistically look like, we need look no further than Ukraine, where the horrors of modern warfare are a miserably cold, dark and daily reality for millions of citizens.

The national risk register classes the impact of a conventional attack on gas infrastructure, ranked between 1 (lowest) and 5 (highest), as 4 (significant) – doing economic damage in the billions of pounds and with casualties and fatalities between several hundred and 2,000. The average likelihood score is given as 3, or a "remote chance" (1–5%). This is considered in the same risk rating as major coastal or fluvial flooding, high temperature and heatwaves, and deliberate disruption of UK space systems and space-based services. We believe this rating needs to be amended for the following reasons.

- **The gas infrastructure attack rating is too low.** We believe the threat posed by a conventional attack on gas infrastructure is underplayed in the risk register and that recovery capacity is overplayed. The increasingly hostile nature, and capability of adversaries is not adequately reflected.
- **Electricity and gas infrastructure should not be grouped.** The grouping of electricity and gas infrastructure into one risk on the register (Conventional attacks on infrastructure) does not reflect the fact that electricity infrastructure is less vulnerable to conventional attack, disruption would have considerably lower impact (including on fatalities and casualties) and is much faster and easier to recover from.
- **The risk of fossil fuel dependency for heating and homes should be classified and named as a chronic risk in its own right**. A chronic threat is categorised as a threat to "our economy, community, way of life, and national security" manifesting over a decades-long timeframe, requiring a robust government-led response.[79] This report shows that fossil fuel dependency for home heating constitutes a chronic risk by this definition.
- **The risk of fossil fuel dependency goes beyond immediate malicious attacks and needs to be comprehensively understood.** The existing consideration of risk posed to gas infrastructures by a terrorist attack neglects other forms of compound and intersecting risks of fossil fuel dependency to homes and heating from sensitivity to

[78] Turbine Logic, **Catastrophe and Its Impact on Multi-Boiler/Multi-Turbine Systems**, accessed 07 February 2026

[79] HM Government, **National Risk Register 2025 Edition**, 2025

geopolitical shocks, state threats, geographic and diplomatic risks, conflict and instability, societal risks, natural and environmental hazards and climate-related risks.

The weaponisation of winter

Since Russia's full-scale invasion of Ukraine in 2022, the Russian military has systematically targeted energy infrastructure supplying civilians' basic needs – particularly for heating.[80] Across Kyiv, Odesa, Kharkiv, Dnipro, Zaporizhzhia, Sumy, Chernihiv, and many other major cities, Russia's air offensive has struck this type of non-miliary infrastructure, a breach of the Geneva Conventions constituting war crimes, to "weaponise winter".[81] This accelerating blitz is a warfare tactic intended to deprive people of power and heating supplies in low and subzero temperatures.[82] Russia uses "double-tap" strikes: the first targeting energy infrastructure, and the second targeting emergency services and repair crews as they urgently attempt to restore heat and electricity.[83]

In a speech delivered to the OSCE, the UK delegation said:

> *"Destroying energy infrastructure ahead of winter, affects the most vulnerable civilians in society, and risks individuals freezing to death in their own homes and being denied access to essential services."*[84]

Following the illegal annexation of Crimea in 2014, Ukraine had made a concerted, but uneven energy sector transition to increase resilience and home front readiness. But since the full-scale invasion this effort has accelerated.

In seeking to address the vulnerabilities associated with centralised energy systems, Ukraine's "war-transition plan" is clear: to phase out coal completely and create a decentralised energy infrastructure of smaller to mid-sized plants across the country with a more diverse mix of gas, nuclear, and renewables.[85] Large, centralised power plants are particularly vulnerable to sabotage, missile and drone strikes, leading the Ukrainian authorities to move early to promote a more distributed approach to electricity generation. This has focused on rolling out smaller gas-fired units, especially modular turbines with capacities of roughly 5–40 MW, alongside accelerating the installation of rooftop solar PV paired with battery storage. Priority sites included public buildings such as hospitals, schools and administrative facilities, as well as homes and commercial premises. By early

[80] FCDO, **Russia's systematic attacks against Ukraine's civilian energy infrastructure: Joint statement to OSCE Ministerial Council 2025**, December 2025

[81] Atlantic Council, **Putin is weaponizing winter as Russia tries to freeze Ukraine into submission**, January 2026

[82] The Kiev Independent, **Energy crisis in Kyiv unprecedented, Mayor Klitschko says**, January 2026

[83] The Conversation, **Russian knowledge of Soviet-era energy systems has helped it to target Ukraine's heating and homes**, January 2026

[84] UK Delegation statement to the OSCE, **Russia is weaponising winter against Ukraine**, October 2025

[85] The European Correspondent, **Turning crisis into clean energy: Ukraine's war-time transition**, February 2025

2024, close to 1,500 MW of solar capacity installed by end-users was already operational, and additions have continued steadily in recent years.[86] It is important to note that Ukraine's use of gas in their near-future energy mix is part of the nation's ultimate net zero transition, with reduction and displacement of fossil fuel part of the longer term plan.[87] Ukraine signalled its intention to align with the European Green Deal in 2020 through its Green Energy Transition Concept to 2050. This direction was later formalised during the war in October 2024, when Ukraine adopted a climate framework law committing the country to climate neutrality by 2050 in line with EU climate policy.

A recent Reuters commentary further justifies Ukraine's drive for a more distributed, renewables-based energy system, following the most sustained physical assault on energy infrastructure seen in modern Europe:

> *"Renewable energy and decentralised generation provide a critical advantage because they do not depend on continuous fuel supply. Unlike large thermal plants, distributed solar, battery storage and small-scale generation can continue operating independently when parts of the grid are damaged. Their modular structure makes them faster to deploy, harder to disable completely and usually quicker to repair."*[88]

While there are structural and compositional differences between Ukraine's pre-invasion energy system and our own, chiefly that the UK is much further along in its decarbonisation/energy security transition, the battle tactics of Russia pose stark comparisons and decisions for our own home front readiness. The UK must also consider the vulnerability of relying on highly centralised fossil fuel infrastructure, and the potential consequences if those systems and supply chains were to be weaponised or attacked. War correspondent Janine di Giovanni has described the events unfolding in Ukraine as "a human-made catastrophe" and has said that "no statistic can capture what it means to live in a city where winter has been deliberately turned into a tool of terror".[89]

A winter assault on the highly vulnerable infrastructure of British gas supply would undoubtedly pose a serious threat to millions of Britons, particularly those most vulnerable. The NHS advises that 18–21 °C is the minimum safe indoor temperature for most people. More at-risk groups need to be kept warmer, including people aged 65 or over, people with underlying health conditions (like heart or lung conditions or mental health conditions), children (particularly aged 5 and under), pregnant women and people who are housebound or have low mobility.[90] Exposure at 9–12 °C for more than 2 hours

[86] IEA, **Ukraine's Energy Security and the Coming Winter**, 2024

[87] University of Oxford, **Enabling and Ensuring a Net-Zero Aligned Carbon Market for Ukraine**, November 2025

[88] Reuters, **Ukraine is showing why electrification is key to Europe's energy security**, February 2026

[89] The Guardian, **Tents pitched indoors for warmth and makeshift radiators: Ukrainians are freezing to death**, January 2026

[90] NHS Inform, **How to stay safe in cold weather**, Accessed 10/02/2026

causes core body temperature to drop, blood pressure to rise and an increased risk of cardio vascular disease. By 8 °C hypothermia can set in.[91] The long-term average temperature for UK winter is 4.09 °C (1991–2020).[92]

It is worth noting here that the NHS is already struggling to cope with winter pressures each year, reducing the country's response capacity and heightening its vulnerability to a catastrophic gas infrastructure event. On 18 December 2025, the Kings Fund declared that the NHS was "already deep into a bleak midwinter", the Health Secretary said that he could not guarantee patient safety, capacity in the system was all but maxed out, and the situation was close to what NHS leaders would declare "the worst case scenario".[93] The NHS and emergency services have historically risen to new and unprecedented challenges, the pandemic being one such example, but if a major gas outage coincided with a cold snap or even an unseasonally aggressive flu virus the health services would face alarming pressure.

Mitigating home front vulnerability

There are several ways forward to improve the UK's home front readiness and reduce the security threat posed by the current composition of British housing stock.

Decentralise energy

The UK must continue to decentralise, diversify, and electrify its energy system, building a future powered by a combination of offshore and onshore wind, solar, bioenergy, geothermal and hydroelectric sources. Such a system is far less vulnerable to attack or sabotage than the current gas-based system, which is dependent on a handful of strategically vulnerable sites of critical infrastructure, such as pipelines and terminals.[94] This more secure, lass gas dependent type of system both supports and relies on the expansion of domestic electrification, particularly of heating but also transport.

A recent Chatham house report states that:

> *"In the case of an armed conflict, an adversary would likely need only a limited number of high-tech drones and missiles to destroy an energy facility costing many millions or billions of euros and supplying, say, 5 per cent of the target country's electricity. In contrast, destroying distributed wind and solar generation infrastructure of equivalent value and capacity would be much more complicated and expensive, and thus harder for the adversary to justify in strategic and economic terms"*[95]

[91] Northumberland Country Council, **Seasonal Mortality**, Accessed 10/02/2026
[92] Met Office, **Winter - the coldest season**, Accessed 10/02/2026
[93] The King's Fund, **NHS deep into bleak midwinter**, December 2025
[94] EIS Council, **Beyond the Grid: The Case for Decentralized Energy Systems**, accessed 30/01/2026
[95] Chatham House, **Why renewables and electrification hold the keys to EU energy security**, January 2026

Cooperation over project development and financing of these projects, in the North Sea for example, offers a framework for shared responsibility and coordination between allies.[96] We have seen in Ukraine that decentralised energy systems are easier to repair in the event of attack.[97]

Fundamentally, all undersea infrastructure is at risk from sabotage (to differing degrees of hazard, exposure, capacity and vulnerability), but it would not be practical – or even possible – to abandon modern systems of energy or information to avoid risk – or eliminate threat – entirely. For example, undersea internet cables are also vulnerable to sabotage, but we wouldn't "mitigate" this risk by ditching our smartphones and plugging fax machines back in. The same logic applies to energy systems: identifying the most resilient systems (decentralised renewables over land and sea) that provide the most co-benefits (lower bills, domestically produced energy, reduced emissions), powering efficient, electric homes (heat pumps, solar panels, batteries, electric vehicles), and replacing older and more vulnerable systems (gas infrastructure at a national and domestic level) in a measured and modern way (dual use, sensorised infrastructure specifications). It is better for UK home heating to be reliant on thousands of decentralised electricity generators (across land and sea) connecting UK power to homes via many thousands of cables than to be reliant on a handful of major gas pipelines and vulnerable associated processing plants/terminals.

Although the energy transition will reduce UK gas demand significantly, during the transition the country will retain a diminishing need for some gas. This limited volume will help with the more complex final decarbonisation challenges associated with, for example, high-temperature industrial processes. A negligible amount of gas will then likely still be needed for supply backup of electricity generation. Green hydrogen could allow the UK to further reduce reliance on gas imports, if produced domestically and stored in converted gas storage facilities underground. These facilities have proven resilient in Ukraine, withstanding major missile attacks, particularly in the west of the country. Operator Ukrtransgaz claims that the war has had little impact on its ability to inject and withdraw gas on behalf of domestic and international companies, with only surface infrastructure taking damage and needing manageable repair.[98] It is worth noting that at the time of the recent gas crisis stemming from disruption in the Strait of Hormuz, the UK had only two days of gas stored with a maximum capacity of twelve days storage available.[99] Expanding gas storage would be expensive and increasingly redundant as gas demand reduces, however there are technical and financial barriers to address if hydrogen is to provide a viable alternative.

A combination of gas demand reduction, electrification and safely stored reserves of green hydrogen would result in a much more defensible and independent energy system. The UK

[96] E3G, **Empowering Europe: Delivering the security and economic benefits of North Seas wind**, January 2026
[97] World Economic Forum, **Energy is the new frontline of security: Lessons from Ukraine's battle-tested system**, January 2026
[98] Financial Times & UFEOGI, **How Ukraine's underground gas storage boosts Europe's energy security**, accessed 11/03/2026
[99] The Guardian, **Great Britain has only two days of gas stored, while Iran war threatens to disrupt supplies**, March 2026

will need to manage, fiscally as well as physically, the gas system as it declines. This approach exemplifies how the UK can improve its home front readiness by proactively reimagining its energy system with security in mind, focusing on domestic production, defensible infrastructure and efficient systems. The alternative of over-militarising the existing fossil fuel-based energy system (which is fundamentally indefensible) would be more expensive, comes without any co-benefits, produces further negative consequences, and does not remove vulnerability at source.

Reduce gas demand and electrify heat

The UK should also look to reduce British homes' collective reliance on gas to reduce reliance on imports during the projected sustained productivity decline from its continental shelf.

This will reduce the threat posed numerically (the number of homes exposed to sabotage or armed attack of critical infrastructure) but will also mitigate the threat on a systems level, as an attack on one or two clustered sites of critical infrastructure would be less impactful. Facing the threat of neighbouring Russia, Poland has accelerated its deployment of heat pumps, becoming a European leader in the deployment of the technology.[100]

There is precedent for such government action. In 1973, triggered by the Yom Kippur War and the subsequent OPEC embargo, Scandinavian countries (namely Denmark, Sweden, and Finland) were hit hard by the energy crisis. This is because these countries were heavily dependent on imported oil for heating buildings which had poor energy efficiency. In direct response, they introduced much stricter requirements for thermal insulation and airtightness in building codes, plus programs for renovating existing buildings. The focus here was retrofitting homes to retain heat better, reducing dependence on foreign oil and increasing security. Sweden, for example, introduced plans like the "energy-saving plan for existing buildings" after 1973 and strict codes for super-insulation from 1977. These measures did not transform the national building stock overnight, but they set a new direction: homes built under post-crisis standards became significantly better insulated than earlier buildings, helping to create better conditions for efficient low-temperature heating technologies such as heat pumps. Today, Scandinavian homes are some of the best insulated in the world, with modern, hyper-efficient heat pumps the most common heating system type.[101] While heat pump adoption in the UK languishes at just 24 heat pumps for every 1,000 households, in Norway, there are 662 per 1,000 homes.[102]

The UK must follow these examples and accelerate the electrification of heat in homes. Replacing a gas boiler with an electric heat pump for space heating and hot water reduces an individual home's gas reliance by 74%, and eliminating all UK gas boilers would halve the country's total gas demand.[103] Accelerating the roll-out of envelope energy efficiency

[100] Strategic Perspectives, **Poland, a strategic cleantech hub for Europe**, December 2024
[101] Energy Institute, **A smarter way to heat Europe's homes**, February 2026
[102] Chatham House, **Norway can teach the UK about energy security – but the lesson is not more North Sea drilling**, April 2026
[103] RUSI, **Clean Heating is Vital for UK Energy Security**, January 2024

measures – including insulation, airtightness and efficient windows – where the UK lags far behind European counterparts, will further reduce gas dependence, lower heat demand and help homes retain safe temperatures for longer in the event of a major disruption. From the perspective of home front readiness, the most vulnerable and most poorly insulated homes should be approached first.

In the event of sabotage of or armed attack on electricity infrastructure (such as undersea cables or even the transmission network), power can be re-directed across the transmission network strategically. The NESO control room is highly prepared to operate to centrally manage energy catastrophes or crises, with their commendable pandemic response and emergency scenario protocols evidence of this. Furthermore, electrically heated homes can be powered by emergency diesel generators (as has been vital in Ukraine) and are reliant on only the electricity supply, whereas gas boilers require both gas and electricity supply to operate.[104] It is important to note that centrally managing an increasingly distributed energy system in times of crisis will present challenges so it is worth exploring alternative solutions.

In 2022 in Sheffield, a burst water main left 2,000 residents without access to the gas network for several days. Residents were left reliant on highly inefficient portable electric space heaters, distributed by Cadent who then advised homeowners to use them sparingly to avoid overloading the grid. These emergency room heaters can only reach efficiencies of one unit of power for one unit of heat, which is only slightly better than a gas boiler. A heat pump, however, will achieve two, three, or even four times this level of efficiency, by effectively "moving" heat, rather than converting it from gas or electricity.[105] Heat pumps are not deployable in an emergency situation as they need to be installed into a home's plumbing and electrics – a process that will typically take three to five days.

Vulnerable people were affected severely by the Sheffield outage, with stories emerging of dementia patients becoming hypothermic and pregnant women needing to leave their homes to find warmth.[106] Some families were provided only one small space heater due to fear of a surge, and the Red Cross were brought in to provide emergency relief.[107] This incident lays bare just how unprepared the UK and UK gas networks are to respond to emergency breaches of the gas supply, even at a relatively small local level, and the worrying consequences of such unpreparedness.

Make homes more resilient

Beyond the supply of energy and energy system decentralisation, the UK must also look at demand side resilience. This should include passive thermal resilience – insulation, airtightness and efficient windows – which slows heat loss during outages, reduces emergency power needs and buys time for households and emergency responders during winter disruption. While homes and communities are currently a vulnerability in the UK's

[104] Boilers2go, **Will a Power Cut Affect A Boiler?**, December 2025
[105] Centre for Sustainable Energy, **Room heaters**, January 2025
[106] The Guardian, **Sheffield residents face fifth day without heat after gas main flooded**, December 2022
[107] BBC, **Stannington: Homes without gas as cold as Iceland, say residents**, December 2022

home front readiness, they can be reimagined as nodes in a distributed security architecture. This future nexus of energy resilient homes will be based on the distribution of generation and storage of energy across homes, facilitated by deployment of technology.

Installing solar panels can reduce a typical UK home's grid electricity consumption by ~20–40%, rising to over 50% with battery storage, while helping to reduce peak-time grid demand.[108] When paired with a battery and suitable inverter, homes with solar PV can continue to generate power even during outages.[109] If these homes are electrically heated, they can also continue to stay warm. It is perhaps little wonder that Ukraine is rapidly expanding its deployment of solar PV paired with batteries as part of its drive for distributed resilience.[110] Ukraine installed over 1.5 GW of rooftop solar over homes and businesses in 2025 alone.[111] Policymakers must continue to identify new and innovative ways to accelerate deployment of what might be termed twenty-first century "Spitfire technologies" – cutting edge technologies that give people and the country the agency to control their own energy freedom and national resilience. It is technically feasible, though not currently available in the UK, for electric car batteries to provide back-up/shared power to a home, providing a greater reserve of available electricity and improved home resilience. The Department for Energy Security and Net Zero has promised a "rooftop revolution" and the Ministry of Housing, Communities and Local Government will this year effectively mandate all new homes to be built with solar PV as well as heat pumps.[112]

This is an inherently resilient energy system, where distributed assets act as micro-generators and storage units in a distributed system of flexible demand. This type of system is far less vulnerable to conventional disruption or attack, be that in the event of sabotage or destruction of critical infrastructure. And, crucially, this approach does not require all homes to immediately reach the highest specification of energy efficiency to become assets in this secure system, but rather this process will represent a gradual mitigation of the security threat posed by near total reliance on fossil fuel supply.

On a slightly larger scale, communities (particularly vulnerable and rural communities) can also improve their resilience through deployment of micro-grids, storage, and demand side flexibility. Kit Carson Electric Cooperative in New Mexico has deployed solar, batteries, smart meters, and is building three microgrids to create a far more autonomous delivery of power to communities during extreme weather events or disasters. This model is already being considered within a UK context.[113]

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[108] Green Match, **Average Monthly Electricity Bill With Solar Panels UK (Guide 2026)**, October 2025

[109] switch together, **Do Solar Panels Work During a Power Outage?**, January 2026

[110] Euromaidan Press, **Solar can't stop Ukraine's blackouts. Can it become part of a more resilient power system?**, January 2026

[111] Pv magazine, **Ukraine deploys 1.5 GW of solar in 2025**, January 2026

[112] Department for Energy Security and Net Zero, **Rooftop solar for new builds to save people money**, June 2025

[113] RUSI, **The Cost of UK Gas Security**, February 2026

> *"During disaster/emergency events, local leadership need to prioritize and ration critical resources like water, communications, electricity, and first responders. By leaning on our Distribution Network Operators and leveraging tools like microgrids, batteries, and distributed generation to increase local resilience (like we are seeing in the rural cooperatives of the US), we can give local leadership valuable control, flexibility, and additional time to make important lifesaving decisions."*
>
> **MELISSA STARK**
> **Senior Associate Fellow, Royal United Services Institute**

Threat assessment I

This assessment concludes that the current composition of UK housing stock poses a severe strategic threat to the UK's national security, as it relates to our home front readiness. This is because key threats to national security, as outlined below, directly target the UK housing stock's existing vulnerabilities if realised.

Threat	Likelihood (low–high)	Impact (low–high)	Resilience / recoverability (low–high)	Threat level (low–critical)
1a – Gas supply chain disruption and weaponisation	High	Medium	Low	Severe
1b – Critical infrastructure attacks	Medium	High	Low	Critical
1c – Catastrophic events (non-attack)	Low	High	Low	Severe
Overall judgement				Severe

Threat 1a: Gas supply chain disruption and weaponisation (Severe)

Likelihood: High – Disruption and weaponisation of global oil and gas supply chains are occurring increasingly regularly, the Russian invasion of Ukraine in 2022 and the US–Israel–Iran conflict this year being major recent examples. The UK's vulnerability is acute and worsening as gas dependency grows (through irreversible decline of production capacity).

Impact: Medium – This is highly dependent on the level of disruption, but heavy and rapidly increasing reliance on gas imports mean that any military escalation in the world that targets supply chains in a global market have a direct, immediate, escalating and multiplying effect on supply for home heating, especially during winter. Without a mass accelerated transition to electrified heat, the UK will be near totally dependent on, and beholden to, its energy trading partners and their geopolitical agendas and supply chains in less than 30 years to heat its homes – posing a clear and major national security threat.[114]

Resilience / recoverability: Low – The UK has limited gas reserve capacity and limited and rapidly declining gas self-production capability. The only option to resolve the root cause of this threat is to rapidly reduce dependence on gas for home heating through electrification and insulation measures.

Threat 1b: Critical infrastructure attacks (Critical)

Likelihood: Medium – Intent to do harm has been demonstrated by the Russian Federation. The UK's response to the invasion of Ukraine, including the implementation of sanctions, provision of financial and arms support to Ukraine, and coordination of a continental transition away from Russian gas, has worsened already tense relations. Russia is currently and actively conducting a hybrid war against the UK, including espionage, sabotage, cyber-attack, election interference, spreading misinformation, likely using drones to shut down airports, and attempting assassinations on British soil (most notably in Salisbury in 2018).

Russia has the capability to attack UK offshore and coastal gas infrastructure. It has a formidable navy and shadow fleet (with a further £77.4 billion multi-decade investment plan announced in 2025) and is highly capable of attacking with plausible deniability.[115] The Russian navy is already conducting undersea sabotage in the Baltic Sea and their GUGI deep-sea research institute spy submarines have as recently as April been operating in the UK's northern waters by critical undersea infrastructure. Espionage is ongoing, but sabotage is not imminent and would be an unlikely and risky escalation at this stage. However, this is by no means unthinkable if the situation in Ukraine deteriorates further for Russia, or if domestic economic and political pressure increases. Cyber threats require further investigation.

[114] Renewable UK, **Can North Sea oil and gas really power Britain's future?**, September 2025

[115] Britain's Word: Council on Geostrategy, **Is the Russian Navy a capable threat to Britain?**, October 2025

Impact: High – The potential human and societal impacts range from moderate to critical depending on severity of attack and the time of year. Combined with low temperature or cold snap, sabotage of a major gas pipeline or processing facility could result in mass mortality and widespread negative health outcomes.

Resilience / recoverability: Low – The UK's gas system is highly streamlined for efficiency with extremely limited redundancy and is centred around vulnerable infrastructure clusters. The country does not have in place the necessary defence measures to prevent or adequately mitigate the risk of hybrid attack by sabotage, espionage, or cyber threat.

Threat 1c: Catastrophic event (Severe)

Likelihood: Low – A catastrophic event is any event (irrespective of cause) that produces widespread harm, existential concern, risk to life and might be irreversible in nature. It is defined by producing systemic risks and cascades some of which are not known. Globally, a 2023 report from the United Nations Office for Disaster Risk Reduction (UNDRR) suggests that there is a need for greater understanding of the extreme risk scenarios that constitute global catastrophic risks in order to "drive better responses and preparedness for both known and potential unknown future events and improve the modelling of major systemic risks and cascades"[116]. A catastrophic event could occur by accident or through an attack, but the focus here is on the outcome.

Impact: High – The impact of a catastrophic event affecting UK gas infrastructure would be exceptional. If this occurred during the colder months, in midwinter, and/or during a cold snap, mortality and negative health outcomes would be high. Mortality would be most significant among the most vulnerable people in society, those who are the least able to withstand extended periods of cold. This includes the elderly, less mobile, infants and young children, the chronically ill and individuals with low body mass.

Resilience / recoverability: Low – Depending on whether a catastrophic event occurred at a single point, impacted multiple points of the same target, or was sustained with recovery efforts disrupted, major outage affecting multiple regions of the country simultaneously could take days or weeks to recover from. Resilience plans may be able to restore some heating from rerouted sources to heat the most vulnerable spaces (such as nursing homes) for some time. Crucially, it is not possible to substitute in another fuel for gas boilers, meaning that under continuity of operations planning, the only possible backup heat source for the vast majority of British homes would be portable electric heaters. Millions of these highly inefficient heaters are neither readily available nor easily distributable at pace, and the electricity grid could not cope with the strain these heaters would inflict in a major outage scenario. Electrically heated homes can have electricity rerouted from many different sources and can be powered by backup diesel generators as have been deployed in Ukraine.

[116] Maxime Stauffer et al., **Hazards with escalation potential**, 2023

Recommendations I

Reducing the gas dependence of British homes and creating decentralised power generation should be considered a national security priority. Homes themselves should be seen as vital strategic assets and key nodes of resilience.

The most cost-effective route to resolve these security issues is to accelerate the reduction of homes' gas demand. A twenty-first century view of home front readiness goes beyond the twentieth century impulse for militarisation. In response to the exposed Russian submarine operation in April, then UK Defence Secretary John Healey's immediate response was to allocate an extra £100m to building up capacity for submarine hunting aircraft and to launch the Atlantic Bastion programme to create a "British built hybrid naval force". This, however, does not address the root causes of the UK's strategic vulnerability including its dependence on fossil fuels.

Twenty-first century home front readiness can only be founded on securing homes at source. At the same time, reliance on big military infrastructure will not shield against, for example, modern drone threats, nor will it automatically improve the insecurity of communities in the UK who feel vulnerable and exposed. These assets may also be less urgently needed, or not needed at all, if the home front is ready and resilient enough to deter assault or destabilisation efforts.

Our recommendations:

1. Number 10 to launch a national "Home Front Mission" to accelerate electrification of UK homes and establish a plan to phase out oil and gas for home heating.
2. The Department for Energy Security and Net Zero, in collaboration with NESO, to set a mission to deliver a more strategically decentralised energy system at pace. Also, in collaboration with the Ministry of Defence, to mandate inclusion of dual use equipment for offshore energy assets.
3. The Department for Energy Security and Net Zero to accelerate the deployment of "Spitfire technologies" such as heat pumps, solar PV, batteries, and energy efficiency measures.
4. The British military to develop emergency scenario plans and defence strategy with allies, particularly around joint defence (surveillance and reconnaissance) of North Sea energy infrastructure.
5. The next edition of the National Risk Register must upgrade the risk status of conventional attack on gas infrastructure, reflecting the critical vulnerability posed.
6. The Ministry of Defence to commission a review into the vulnerability of oil and gas platforms, pipelines and clustered infrastructure, with regards to direct attack and sabotage, which considers operational continuity under these scenarios.

7. The Department for Business and Trade to prioritise diversification of supply chains for clean energy technologies and develop incentives to maximise UK manufacturing.

8. NESO and Distribution Network Operators to work with Cabinet Office and Ministry of Defence to ensure there is adequate planning for home resilience and crisis management.

9. NESO to investigate viability of repurposing UK long-term underground gas storage facilities – primarily salt caverns and depleted offshore fields – to manage seasonal demand and supply fluctuations with domestically produced energy (e.g. green hydrogen).

10. When designing the new Centralised Strategic Network Plan, NESO should consider the defensibility and security of the energy system.

Chapter 2: Economic & financial stability

Faith Hammond, E3G

> *"De-link[ing] electricity from gas is not just an economic necessity; it is a national shield for every household…"*
>
> **RACHEL REEVES**
> **UK Chancellor**, at the IMF Meetings in Washington DC, April 2026

The quality of the UK's housing stock is a strategic and systemic financial and economic vulnerability. It undermines the resilience of individual households, public finances and the overall financial system to exogenous energy supply shocks. This is a result of:

- structural factors arising from the way that the UK electricity market operates; and
- the poor quality, and therefore energy inefficiency, of the housing stock itself.

The energy crisis following the Russian invasion of Ukraine in 2022 highlighted the structural constraints within the UK electricity market and the impact that these have on individual households. Many of these constraints remain. Gas price shocks feed through to household bills as wholesale gas prices still determine the marginal electricity price the majority of the time.[117] The financial squeeze for households is made worse by energy prices feeding into inflation in other areas, such as food. Combined with suppressed demand, this undermines the UK's competitiveness as productivity and growth forecasts are downgraded, while the inflationary pressures increase the cost of government debt.

As covered in Chapter 1, the UK also has a high dependency on gas for heating, for one of the most inefficient housing stocks in Europe.[118] This means that households are spending a higher proportion of their income on energy bills, especially for those in the lowest quality homes, therefore magnifying exposure to gas price swings. When a supply shock hits global gas prices, these customers have little to no buffer to absorb the resulting shock to their utility bills. Combined with wider inflation, this eats into their savings, increases unsecured borrowing and mortgage default risk or arrears on rent and other debt.

The above dynamics combine to destabilise the financial system, while the interconnected macroeconomic and financial stability risks are transmitted back to households via

[117] In the UK it sets it up to 85% of the time, compared to 40% in Germany or 15% in Spain. Ember, **Latest energy shock reminds Europe of its risky gas reliance**, 13 March 2026

[118] Resolution Foundation, **Housing Outlook Q1 2024**, March 2024; Grantham Institute, **Decarbonising Buildings: Insights from across Europe**, December 2022

insurance and credit markets. A severe energy shock, similar to the one now confronting the UK due to the conflict in Iran, will not remain confined to the energy system. Its immediate consequences have so far been absorbed by the financial system, but the risk that multiple vulnerabilities could "crystalise at the same time", continues to threaten system integrity.[119]

Our threat assessment highlights that the structural vulnerability of the UK's homes and their dependency on gas is transmitted through three core economic and financial stability channels:

- Household systemic exposure to high-cost utilities and price shocks leading to wider inflation.
- Impacted sovereign debt dynamics, including debt servicing costs.
- Wider ripple effects that threaten the stability of financial systems and price vulnerable households out of core financial services.

Households' dependence on gas and exposure to price shocks is a threat to their financial security

In 2024, households spent, on average, 8% of their income on energy and for low-income households this increases to as much as 41%.[120] To a large extent, what they pay is determined by the price of gas – directly, where homes use gas for domestic heating, and indirectly for all homes through the price of electricity. Gas continues to set the marginal electricity price in the UK 60–85% of the time,[121] compared to 40% in Germany or 15% in Spain[122], giving it an outsized impact on retail electricity prices. While the Ofgem price cap provides a level of lagging through quarterly repricing, this is relatively short in comparison to peers that rely on regulated tariffs or longer averaging periods, and includes a large wholesale component. This combination of last dispatched impact (pass-through of the UK's structural reliance on imported gas) marginal pricing and responsive price cap leads to a faster pass-through than peers.

The poor quality of the UK's housing stock means that households pay more than is necessary. According to research from the Gas Safe Register, the average UK household wastes £784 annually on preventable energy losses, two-thirds of which is due to heating system inefficiencies and water heating waste. This figure represents nearly 23% of the

[119] FSB, **FSB Chair warns of rising financial risks stemming from Middle East conflict**, 13 April 2026; IEA, **Gas Market Report Q1-2026**, January 2026

[120] Bank of England, **Monetary Policy Report**, April 2026; Citizens Advice, **Essential bills "eating away" at incomes of lowest earners**, 31 March 2025

[121] Gov.uk, **Decisive action to break influence of gas on electricity prices**, April 2026; ECIU, **Marginal Gains. How wind is pushing gas out of the power market and cutting costs** (PDF), October 2025

[122] Ember, **Latest energy shock reminds Europe of its risky gas reliance**, 13 March 2026

typical household's energy bill and includes losses due to poorly maintained boilers, inadequate insulation, and uninsulated hot water cylinders.[123]

The above figures mask distinct inequalities. Low-income households spend as much as 41% of their income on energy.[124] Private renters also face higher burdens than owner-occupiers: roughly 21–23% of privately rented homes fall below the Decent Homes Standard, compared with 13–14% of owner-occupied homes.[125] Aside from the clear benefit these groups would receive from home efficiency improvements to reduce the income spent on preventable energy losses, they are also more vulnerable to gas price shocks.

How gas price shocks drain household budgets

When gas price shocks hit, a combination of higher costs and constrained incomes increases the risks of financial distress for households. This may lead to defaults on residential mortgages, consumer credit and commercial loans, posing risks to financial stability and reinforcing a feedback loop between energy shocks, macroeconomic fragility and household vulnerability.

The crisis that followed Russia's full-scale invasion of Ukraine in 2022 exemplifies this mechanism. European gas benchmarks surged by more than 25% in the first two weeks, and by mid-2025, the average energy bill was approximately £1,709–1,896, roughly £750 higher than before the crisis[126] (equivalent to an additional monthly mortgage payment for the average household).

This put individual households at the sharp end of energy security, putting pressure on disposable income, increasing household energy debt and the proportion of income spent on basic utilities, and putting downward pressure on savings. The average UK household has already paid an additional £2,200 due to increased oil and gas costs related to this conflict,[127] a figure which is set to rise this summer as a result of the war in Iran. Household energy debt reached £4.43bn by Q2-2025, more than triple pre-crisis levels, and over one million customers held electricity or gas debt without repayment plans.[128] The fuel poverty gap increased by 47% following the invasion and did not start coming back down again until 2024.[129] These impacts arose despite the significant amount of public money use to try to shield the public from the energy crisis.

Energy shocks hit households not only through utility bills, but also through wider inflation as the price of energy feeds into production and transport costs for other commodities and services. In the immediate aftermath of the Russian invasion, UK inflation peaked at 11.1%

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[123] Gas Safe Register, **UK Household Energy Waste: How Much Money Goes Down the Drain**, July 2025

[124] Citizens Advice, **Essential bills "eating away" at incomes of lowest earners**, 31 March 2025

[125] Ministry of Housing, Communities & Local Government, **Housing quality metrics in England: Coherence article**, 28 May 2025

[126] The Guardian, **Cost of global energy crisis on households in Great Britain 'to hit £3,000 by summer'**, February 2025

[127] E3G, **Cost of the fossil fuel crisis in the UK**, November 2025

[128] Ofgem, **Debt strategy update: supporting the reduction of energy debt**, November 2025

[129] Hinson, S., Bolton, P., Kennedy, S., **Fuel poverty in the UK**, House of Commons Library, April 2025

in October 2022,[130] with energy inflation at 58.6%.[131] Over a longer timescale, direct energy costs were responsible for one-third of the cumulative inflation experienced by households from 2021 to 2023,[132] with food prices also much higher as a result of significant increases in the cost of fertiliser and transportation. In 2022, Bank of England Governor Andrew Bailey described the central bank's feeling of being "helpless"[133] in the face of food price inflation, which rose from 5.9% to 19.1% in the space of 12 months.[134] Additionally, while food prices were slower than energy prices to respond to the gas supply shock, they are also slower to come back down again.[135]

While it may be tempting to think of such shocks as one-offs that the country can recover from, they are recurring and predictable, which means that they do not operate as individual shocks, but as an ongoing, long-term vulnerability. The Office for Budget Responsibility's 2025 Fiscal Risks and Sustainability (FRS) Report lays this out explicitly:

> *"While the acute pressures over the last few years have therefore subsided, the [Ukraine invasion] highlighted the UK's vulnerability to global energy shocks and the fiscal consequences of inflationary surges. Moreover, high energy prices remain a persistent fiscal risk, as demonstrated by the ongoing conflict in the Middle East, which underscores the ongoing sensitivity of markets to geopolitical instability."*[136]

The current conflict in Iran shows again the systemic nature of the risk. Brent crude has reached over $100 per barrel on a number of occasions since 28 February[137] and UK gas prices have hit a three-year high.[138] It is expected that continued conflict resulting in sustained high energy prices could add 0.5–0.8% to headline CPI.[139]

While all countries are to an extent exposed to energy price shocks due to the integrated nature of oil and gas markets, the UK's particular entrenched structural vulnerabilities – the high dependency on gas for domestic heating (see Figure 1 in Chapter 1), the poor quality of homes, and the electricity market structure – have amplified the impact of long-term gas price volatility on UK households, and on the wider economy as will be discussed in the next section. As a result, the UK's energy prices were often higher than those of peers during the 2022 energy crisis,[140] and the IMF reported that UK households were among the

[130] Office for Budget Responsibility, **Fiscal Risks and Sustainability**, July 2023
[131] House of Commons Library, **Gas and electricity prices during the 'energy crisis' and beyond**, May 2026
[132] E3G, **Cost of the fossil fuel crisis in the UK**, November 2025
[133] Treasury Committee - Oral Evidence, **Bank of England Monetary Policy Reports, HC 143**, May 2022
[134] Office for National Statistics, **Food and energy price inflation, UK 2023**, May 2023
[135] New Economics Foundation, **Lessons from the last energy shock**, April 2026
[136] Office for Budget Responsibility, **Fiscal Risks and Sustainability Report**, July 2025
[137] Trading economics, **Spot prices for brent crude** (accessed 12/06/2026)
[138] The Times, **Gas prices hit three-year high**, March 2026
[139] Bank of England, **Monetary Policy Report**, April 2026
[140] House of Commons Research Briefing, **Gas and electricity prices during the 'energy crisis' and beyond**, February 2026

most impacted by the energy crisis in terms of both the direct and indirect impact of increases in energy prices on their cost of living.[141]

The rental market – an emerging blind spot

Renters now account for 35% of the population,[142] living in properties of which up to 23% are below minimum standards.[143] Energy inefficiency raises total housing costs for renters even if rent increases are increasingly controlled under new legislation. This is reflected in renters' on average more precarious financial position: they are reported as having a higher likelihood of financial difficulty and no access to sufficient emergency savings.[144] Renters also account for significant amounts of unsecured debt, including 30% of persistent credit card debt[145]. Household energy debt is also significantly higher in the renter population, with StepChange reporting that three in five clients were living in rented accommodation.[146]

The policy framework needs to strike a balance between enforcement against landlords who fail to meet standards, and incentives to meet the standards through access to government-backed schemes. The upfront cash required for retrofits – alongside tighter mortgage affordability tests and EPC-linked lender constraints – increases the risk that landlords may not be able to remortgage. Where targeted support through grant-based funding or concessional lending is not easily available to landlords, this creates a split incentive when considering whether to make upgrades to heating systems or insulation.[147] Minimum Energy Efficiency Standards (MEES) already constrain lettings at the bottom bands; further tightening of these standards creates the potential for "stranded rental" pockets and refinancing risks for landlords, where landlords decided to withdraw from the market and sell properties rather than seeking to meet the new standards.

This means that making sure that landlords are able to access grant-based and concessional-lending schemes to meet these new requirements is imperative. This would help to ensure that the cascade effects from these policy changes are not negatively impacting already vulnerable households with systemic exposure to higher utilities and food costs.

[141] International Monetary Fund, **Helping Europe's Households**, December 2022

[142] Bank of England, **Financial Stability Report**, December 2025

[143] Ministry of Housing, Communities & Local Government, **Housing quality metrics in England: Coherence article**, May 2025

[144] Bank of England, **Financial Stability Report**, December 2025

[145] Bank of England Insights, **What do pressures on renters mean for financial stability?**, August 2023

[146] StepChange, **Trapped in Rent Report**, May 2023

[147] E3G, **How to improve living standards for millions of private renters in England and Wales**, March 2025.

The UK's gas dependency will continue to impact public debt and growth

The inflationary pressures from gas price shocks described above quickly feed into public finances as the cost of borrowing increases. Meanwhile, suppressed demand puts a drag on growth as businesses as well as households struggle to cope with rising prices. The government is pressured to spend to protect citizens and businesses from the worst impacts, as was the case in 2022–2023, putting further strain on the public purse. Overall, fiscal space is constrained, limiting the government's ability to invest in its priorities and ensure its population's security.

The fiscal response to the 2022 energy shock fundamentally altered the UK's macro-fiscal starting position.[148] Cumulatively, the increase in oil and gas prices following the Russian invasion of Ukraine has cost the UK about £183 billion, of which £55 billion was the net cost to the government of support schemes to cap energy bills.[149] These interventions were essential to shield households and firms from an immediate collapse in affordability, but they came at the cost of higher public borrowing. The UK's current debt-to-GDP ratio remains high, as a result of the combination of pandemic recovery and the energy crisis of 2022, with debt-servicing costs hitting a post-war high.[150]

This means that the UK enters the current energy-supply disruption with reduced fiscal headroom, and therefore more exposed to the resulting energy shock. The IMF has already delivered a sharp downgrade to its forecast for UK growth for 2026,[151] citing the energy shock arising from the disruptions in the Strait of Hormuz, surging gas prices and delayed monetary easing as key factors, with inflation now expected to remain higher for longer and unemployment to rise. This reduces the denominator of the debt-to-GDP ratio just as inflation expectations and risk premia increase the cost of issuance. Bond markets internalise this combination rapidly, as seen in heightened gilt yield sensitivity to energy prices and geopolitical risk. The implications of this bond market sensitivity in the face of pressures on oil and gas supplies has already been reflected in the shift in UK 10-year gilt yields and a more hawkish stance from the Bank of England. This also impacts investment, resulting in reduced productivity, which further worsens debt dynamics and reduces fiscal space. It also reduces the state's ability to crowd in private investment, further limiting the multiplier that government can put on the allocation of public funds and therefore its ability to shore up the resilience of the country overall and of individual households.

Monetary policy in major economies, not just the UK, has also shifted dramatically. At its March meeting, the Bank of England revised its outlook for the base rate, marking a sharp reversal from earlier expectations of rate cuts. This change contrasts starkly with guidance

[148] Office for Budget Responsibility, **Fiscal Risks and Sustainability Report**, July 2025
[149] E3G, **Cost of the fossil fuel crisis in the UK**, November 2025
[150] Office for Budget Responsibility, **UK's Fiscal Position in International Context**, July 2025
[151] House of Commons Library, **GDP international comparisons: Economic indicators**, April 2026

earlier in the year, when confidence remained that a return to the 2% inflation target was effectively "baked in" to the UK's economic outlook.[152]

If the conflict persists, the fiscal implications for the UK will intensify. Higher interest rates will increase the cost of servicing government debt, pushing up the debt-to-GDP ratio and reducing fiscal headroom to absorb future shocks – though, with the potential for this to be counterbalanced by a higher rate of inflation eroding the real value of existing nominal debt. In parallel, rising macroeconomic uncertainty and tighter financial conditions are likely to deter private investment in UK infrastructure, further exacerbating existing stresses in public utilities like water and large-scale transport investment. Meanwhile, rising prices for electricity, food and other essentials will raise operating costs across the economy, placing downwards pressure on real wage growth and further pressure on household incomes.

Ripple effects through financial systems and services

Compounding impacts through mortgage markets

As stated in the first section of this chapter, poor energy efficiency puts households at a financial disadvantage. There is a significant evidence base indicating that building energy efficiency is correlated with lower probabilities of default on residential mortgages.[153]

This is driven by:

- Stronger household cash-flow resilience as a result of lower utility bills.
- Greater likelihood of the home retaining value in a downturn, therefore lower risk of homeowners being in negative equity.

A number of studies have investigated the impact of energy price shocks on commercial real estate loans, income inequality/financial vulnerability more generally, as well as looking at EPC ratings as an indicator of credit riskiness. However, fiscal authorities, the Central Bank and Prudential Regulatory Authority have been slow to integrate the conclusions from this evidence base into the relevant frameworks. Doing so would help to rebalance incentives for both owner-occupiers and private landlords to invest in retrofits and other upgrades to improve the energy efficiency of UK housing stock, and the resilience of households to exogenous energy supply shocks.[154]

There are no studies that look directly at the relationship between energy price shocks and retail mortgage affordability. Nevertheless, there is a clear transmission channel. The

[152] Reuters, **UK hit with big IMF growth downgrade**, April 2026

[153] Energy Efficient Mortgages Initiative, **Knowledge Hub** (accessed 12/06/2026)

[154] Bank of England, **Updates to eligibility of residential mortgage collateral in the Sterling Monetary Framework to reflect the Domestic Minimum Energy Efficiency Standard (MEES) Regulations - Market Notice**, May 2024

inflation resulting from energy price shocks leads to higher borrowing costs, which feed into mortgage pricing. The UK's mortgage market, which relies on shorter-term fixed rate contracts (2–5 years) and regular refinancing, means that pass-through from the Official Bank Rate to household budgets is faster and more forceful than peers. This accelerates the pace at which increases in interest rates transmit into upwards pressures on cash flow for homeowners, squeezing disposable income already constrained by high energy and food prices (Figure 6). Combined with depressed real incomes, this leads to housing-market softening and reduced consumer confidence. In 2022 this led to product withdrawals and repricing by major mortgage lenders, disproportionately impacting vulnerable households, who would no longer have access to these products or no longer be able to afford them.[155]

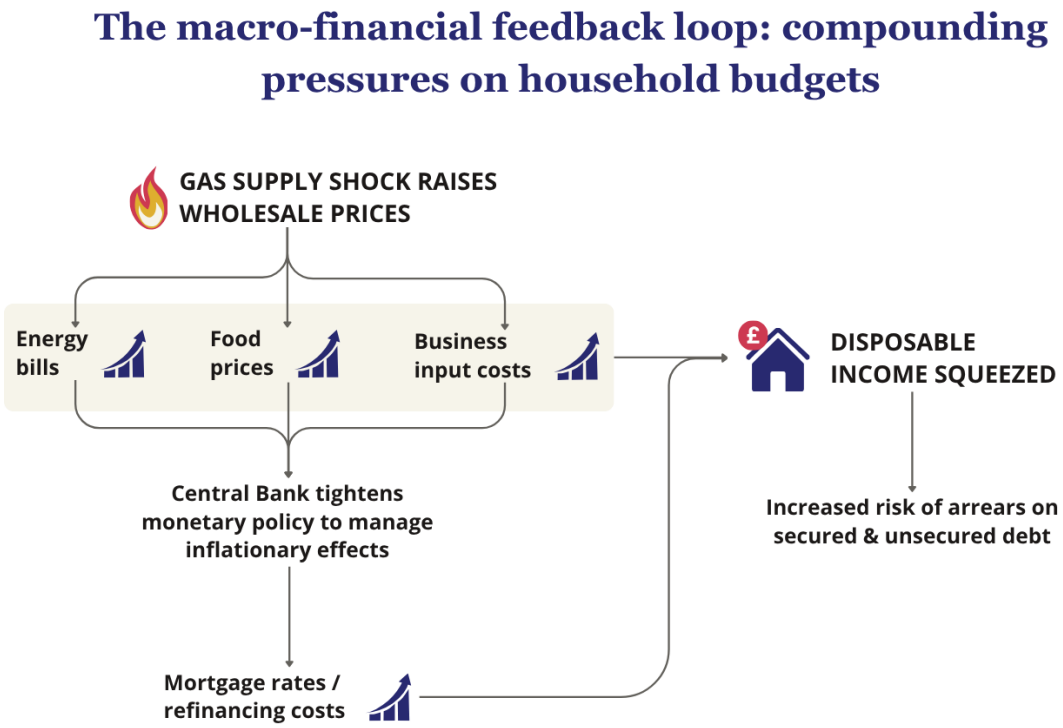

Figure 6: Gas price shocks hit household budgets both directly through higher energy bills, and indirectly through effects that ripple through the macro-financial system. The higher cost of energy leads to inflation in food prices and other goods and services. Monetary policy to manage these effects, such as raising interest rates, increases housing costs by raising the cost of mortgages, which also feeds through into rents. The result is that more households become financially insecure, which may also destabilise wider financial systems.

[155] Financial Conduct Authority, **Ensuring the fair treatment of customers in vulnerable circumstances**, June 2022

Increased loan-to-income ratios since 2021, combined with cost-of-living increases, means that households are more vulnerable to interest-rate and energy-cost shocks than they were in 2022. A new price shock now is therefore likely to lead to an increase in arrears and unsecured borrowing for more households. These strains on individual households add up to a potentially significant impact on the stability of the UK's financial sector: the UK residential mortgage market is one of the largest asset classes in the UK economy, with outstanding balances around £1.7–1.8 trillion.[156]

Further ripples through insurance and pension systems

Life insurers and pension funds are impacted by increased risks of mortgage defaults through their exposure to residential mortgage-backed securities, covered bonds and other property-linked assets. Life insurers are also significant holders of equity-release mortgages. The transmission of energy price driven inflation through household budgets to the value of these firms' portfolios impacts their solvency and liquidity, with immediate implications for system-wide financial stability. [157]

Insurance markets are additionally vulnerable to the impacts from conflicts where these affect the production and transport of fossil fuels. War-related insurance losses and volatility resulting from the Iran conflict have already triggered the withdrawal or repricing of short-term marine and war risks cover, with capacity increasingly reliant on ad hoc public–private backstops. At the same time, rising claims across aviation, travel, marine and political risk lines, including energy infrastructure, are hardening global multi-line insurance markets and constraining risk appetite more broadly. Market concentration among a small group of global carriers and reinsurers may exacerbate these dynamics by accelerating coordinated withdrawal from high-risk areas and product lines.[158]

Access to insurance underpins mortgageability and local investment, meaning that these shifts have implications for macroeconomic stability, amplifying regional inequality and dampening economic resilience. Inflation further compounds the problem by raising claims severity, particularly for construction and repair. Property insurance claims in the UK hit a high of £4.6 billion in 2025 as a result of weather damage.[159] This puts upward pressure on operational costs for insurers through increased claims costs. This in turn accelerates "flight-to-margin" behaviour where firms withdraw or price customers out of high-cost products in favour of those that are low cost, high return. Meanwhile, insurers' balance-sheet resilience is being tested by market volatility: investment income, a key buffer for low-margin lines, is increasingly exposed to repricing risks in fixed income and

[156] Financial Conduct Authority, **Mortgage lending statistics**, December 2025
[157] House of Commons Library, **Rising Cost of Living in the UK**, July 2024
[158] Bank of England Insights, **Mind the gap: a UK microprudential perspective on general insurance protection gaps**, April 2026
[159] The ABI, **Year-to-date property insurance payouts**, November 2025

sovereign portfolios, while the legacy expansion into private markets during the low-rate era raises liquidity concerns in stress scenarios.[160]

The net effect of these dynamics is a feedback loop in which energy insecurity worsens macro outcomes, undermines insurance capacity, and shifts risk back onto households. Households already contending with higher energy bills find that their mortgage payments increase due to inflation, while prospective new buyers are priced out due to increased mortgage and insurance rates, and the withdrawal of products available to the most vulnerable, high-risk households. Suppressed demand in the housing market can lead to impacts on house value. A direct relation to housing quality exists here as lower quality housing stock is more sensitive to shifts in house prices, and more likely to result in home insurance claims being rejected.

Mitigating the financial impacts of the UK's gas dependency

It is essential that we assess how effective policy solutions are, both distributionally and as macro-stabilisation tools. Energy efficiency retrofits, utility price caps, or heating-fuel subsidies directly influence household cash flow, consumption choices, and expectations. These micro-level consumption decisions move national consumption baskets, creating observable shifts in headline inflation and aggregate demand. Inflation pass-through therefore amplifies local policy decisions, including through energy weights in CPI. Stabilising household budgets therefore stabilises the macroeconomy through the protection of savings as an investment productivity lever, smoother business-cycle dynamics, and greater resilience to supply-driven inflation.

Central banks, monetary policy and amplification of energy driven shocks

Central Banks can play a significant role in either amplifying or stabilising the macro-financial feedback loop that links energy price volatility to household balance sheets, mortgage markets and financial stability.

The current monetary policy framework is designed primarily to focus on domestic, demand-driven inflation, taking into account global inflation only in specific circumstances. This means that the Bank of England is inclined to assume that gas price spikes will normalise relatively quickly, and therefore that reactive decisions to raise rates could be more detrimental. Yet when the surge in wholesale gas prices in 2022 led to a sharp rise in headline inflation, this shock fed directly into the Bank of England's monetary policy response. The raising of the Official Bank Rate from 0.1% to 5.25% between December 2021 and August 2023[161] was implemented to prevent temporary price pressures from

[160] Financial Stability Board, **FSB Chair warns of rising financial risks stemming from Middle East conflict**, April 2026

[161] Bank of England Database, **Historic data on the bank rate** (accessed 12/06/2026)

becoming embedded in wages, expectations and domestic price-setting behaviour. However, these higher rates intensified pressures on households already absorbing steep increases in their basic cost of living as the structure of the UK's mortgage system meant the Bank Rate was rapidly passed on to mortgage rates.

The result of this dynamic is a compound shock where energy-driven inflation triggers monetary tightening, which in turn feeds back into inflation persistence with knock-on impacts on renters through higher rents, rising business financing costs and wage pressures. This does not reflect a failure of central banking so much as a structural mismatch: policy frameworks designed for demand-led inflation are now repeatedly being triggered by volatility originating in global energy markets. Nevertheless, there are policy options that the Bank is currently not utilising that could shield resilience and transition investments from interest rate hikes, such as Green Term Funding Schemes.

Financial stability concerns reinforce this dilemma, with rising refinancing costs, higher arrears risk and pressure on unsecured borrowing all feeding into banks' credit assessments. Insurers and pension funds, with their exposures to mortgage-back assets and property-linked portfolios, are similarly affected. Volatile rate expectations also influence gilt markets, as demonstrated during the recent gilts crisis. This underscores that energy volatility is not merely an affordability challenge, it is a balance-sheet challenge that radiates across the financial system.

Central banks have begun to acknowledge these links. The Bank of England and peer institutions are exploring the relevance of building-level energy performance for mortgage risk, collateral frameworks and future scenario design. These initiatives are important but cannot substitute for structural characteristics of the UK housing stock and the market architecture of energy pricing. Monetary policy will continue absorbing – and amplifying – volatility originating far beyond domestic control.

Improving UK housing quality is necessary to make us more resilient

The lesson is clear: without structural reform, the UK will remain repeatedly exposed to the same vulnerabilities. High reliance on imported gas coupled with energy inefficient housing creates a direct channel through which the geopolitically driven energy price swings transfer into household finances, inflation dynamics and financial sector resilience. This is not a temporary disruption but a predictable pattern.

Making the UK housing stock more energy efficient and switching to electrified heating and transport is therefore not solely an environmental or social policy issue, but one of energy security, financial stability and economic resilience. Neither monetary nor prudential policy can fully mitigate the systemic effects: the former reinforces the stagflationary impacts of exogenous shocks, while the efforts of the latter to stabilise balance sheets by signalling to the market to exclude high-risk products reinforce the increasingly vulnerable position of many households. The rising debt burden that results would continue to put a damper on growth and threaten financial system stability.

The investments required would pay for themselves multiple times over. The Climate Change Committee estimated recently that the cost of an energy price shock similar to Russia's full-scale invasion of Ukraine could be equivalent to, if not more than, the total net additional cost of the energy transition.[162] These policies are therefore not just necessary to support the most vulnerable, but to protect the UK as a whole from the compounding effects of the recurring economic destabilisation that dependence on gas makes inevitable.

Threat assessment II

This assessment concludes that the current composition of UK housing stock poses a severe national security threat in the context of economic and financial stability for the reasons summarised in the table below.

Threat	Likelihood (low–high)	Impact (low–high)	Resilience / recoverability (low–high)	Threat level (low–critical)
2a – Inflation and inability to absorb increased costs and bills	High	High	Low	Severe
2b – Loss of financial agency and impact on societal security	Medium	High	Low	Substantial
2c – Impact on productivity and growth projections which then impact cost of debt	High	Medium	Low	Substantial–Severe
2d – Lower fiscal headroom and increased cost of debt-servicing	High	High	Low	Severe
Overall judgement				Severe

[162] Climate Change Committee, **Supplementary analysis of the Seventh Carbon Budget**, March 2026

Individual household finances

Threat 2a: Inflation and inability to absorb increased costs and bills (Severe)

Likelihood: High – We are already seeing the effects of energy supply chain disruption on inflation feeding through into inflation expectations and wholesale prices. This is expected to crystalise in household budgets this summer as part of the price-cap reset period. The persistence of overlapping shocks increases the risk that inflation remains elevated rather than transient.

Impact: High – Lower-income UK households are systemically exposed to high-cost utilities and food prices, while higher leverage ratios at the individual household level increases the financial stability risks where increased aggregate risk of payment stress, defaults and arrears impact firm liquidity and solvency. Credit tightening and product withdrawals, mirroring patterns seen in 2022, risk pricing vulnerable households out of core financial services, leaving more households effectively stranded and increasing the likelihood of policy intervention to preserve financial stability.

Resilience / recoverability: Low – Public balance sheet constraints significantly limit the scope for economy-wide support comparable to interventions deployed in 2022 or during the COVID-19 pandemic. As a result, more of the adjustment burden will fall on households, increasing the probability that inflation translates into demand destruction, credit impairment and macro-financial feedback loops.

Threat 2b: Loss of financial agency and impact on societal security (Substantial)

Likelihood: Medium – While not immediate for all households, prolonged cost pressures combined with tighter credit conditions steadily erode financial agency, particularly for renters, those on variable-rate mortgages and households with limited savings buffers. This dynamic is already visible in rising use of short-term credit and payment deferrals.

Impact: High – Loss of financial agency reduces households' ability to control their consumption of basic goods and utilities, plan for future expenses or respond to shocks, increasing dependency on informal credit or state support. At scale, this undermines trust in markets and institutions, raises social stress, and increases the risk of disorderly responses to price signals (for example, non-payment, fuel poverty or political pressure for market intervention). These effects represent a material societal-security risk with direct implications for financial stability.

Resilience / recoverability: Low – Recovery of household financial agency is slow, particularly once savings have been depleted and credit histories impaired. Without strong income growth or targeted structural interventions (for example, energy efficiency or debt restructuring), scarring effects persist, constraining both labour-market participation and financial inclusion over multi-year horizons.

Public finances

Threat 2c: Impact on productivity and growth projections which then impact cost of debt (Substantial–Severe)

Likelihood: High – Repeated energy-driven inflation shocks depress investment, weaken consumer demand and discourage risk-taking, lowering potential output. The UK enters the current energy crisis with already weak productivity growth, amplifying sensitivity to further shocks.

Impact: Medium – While not immediately destabilising, weaker growth materially worsens debt dynamics over time by compressing revenues and removing the balancing effect of stronger growth projections on higher-than-expected inflation forecasts. This places upward pressure on sovereign risk premia and increases vulnerability to shifts in market sentiment, especially during periods of global stress.

Resilience / recoverability: Low – Productivity losses are slow to reverse and require sustained investment and policy certainty. Elevated interest rates and fiscal constraints reduce the state's ability to crowd in private investment, limiting recovery potential and increasing long-term debt-servicing risks.

Threat 2d: Lower fiscal headroom and increased cost of debt-servicing (Severe)

Likelihood: High – Debt-interest expenditure is increasingly sensitive to inflation, interest-rate expectations and gilt-market volatility. Energy-driven inflation shocks, combined with higher refinancing needs, make further increases in servicing costs highly probable.

Impact: High – Rising debt-servicing costs crowd out discretionary spending, reducing the capacity to respond to future shocks without destabilising fiscal credibility. This creates a pro-cyclical policy constraint: fiscal tightening during downturns or shocks, which can exacerbate economic stress and weaken confidence.

Resilience / recoverability: Low – Once higher debt-servicing costs are embedded, adjustment options are limited. Restoring fiscal headroom requires either sustained higher growth, prolonged fiscal consolidation, or tolerance of higher inflation – all of which entail significant political and macro-financial trade-offs. In the interim, reduced fiscal flexibility increases systemic exposure to external energy and geopolitical shocks.

Recommendations II

The risks identified in this chapter place energy efficiency, heating resilience and market reform firmly within the remit of macro-economic risk management. For central banks, the goal is not to broaden their mandate, but to incorporate energy-system vulnerabilities into a clearer assessment of how external shocks translate into domestic financial pressures. For government, the implication is unambiguous: stabilising the energy-inflation-interest rate cycle requires reducing the economy's exposure to fossil-fuel volatility at its source.

1. Treasury to prioritise action to make home electrification affordable and ensure it is cheaper to use a heat pump than a gas boiler. E3G has developed a comprehensive set of recommendations for lowering the cost of running heat pumps.[163]

2. HMT to a launch a sovereign Security and Resilience Bond to accelerate investment in the electrification of the UK economy, including its housing stock, and deliver resilience for UK infrastructure and communities to the impacts of climate change. Thematic bonds tend to attract higher prices and be less vulnerable to capital flights during times of crisis.

3. The Bank of England and the Office for Budget Responsibility to coordinate a review to identify areas of vulnerability within owner-occupied and buy-to-let mortgage portfolios, building these risks into future analysis, projections and alignment of prudential framework. This includes incorporating systematic assessment of exposure to fossil fuel price volatility and availability of home insurance into monetary and financial stability monitoring, and the use of standardisation of EPC ratings to align prudential frameworks with the low-interest rate financing for retrofits provided by the National Wealth Fund (similar to initiatives undertaken by the ECB).

4. Mapping by the Bank of England of strategic gas dependency by country and transmission channels building on the Bank of England's recent System-Wide Exploratory Scenario.

5. The Department for Energy Security and Net Zero to launch a long-term national programme offering zero interest-rate financing for retrofits. This investment in the regeneration of UK housing stock, bringing homes to at least EPC C would reduce exposure to global energy volatility, cut bills and support macroeconomic stability. Public investment should be blended with affordable private finance and delivered through clear regulatory timelines.

6. The Department for Energy Security and Net Zero to address the rental sector as a systemic blind spot in retrofit schemes – designing phased minimum energy-efficiency standards and targeted landlord support mechanisms to reduce arrears risk and narrow the resilience gap between owners and renters. These standards must prioritise displacing gas and boost electrification.

7. The Bank of England review of monetary policy framework to include consideration of green term funding schemes. This would explicitly shield renewable energy and electricity infrastructure upgrades from rate hikes caused by fossil fuel market volatility.

8. The Department for Energy Security and Net Zero and Ofgem to support the decoupling of electricity prices from fossil fuels through continued investment in

[163] E3G, **Heat pumps have the potential to halve UK heating bills**, August 2025

scaling renewables and energy market reform. E3G has produced analysis setting out how electricity market reform could be achieved.

Chapter 3: Political legitimacy and societal security

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> *"For a man's house is his castle… his safest refuge."*
>
> **SIR EDWARD COKE**
> **English jurist and lawyer**, early seventeenth century

Political legitimacy is the "recognition of power as being valid". Once trust in a political system has eroded, governments have weakened ability to pursue and justify policies. This makes crisis responses difficult and impedes on society's overall ability to adapt or transition. This adaptive capacity, however, is crucial in a changing international energy and climate context. Total loss of political legitimacy can lead to social and political breakdown, for example, the loss of democratic systems. Addressing fossil fuel induced insecurity is one of the most important and decisive interventions that the government can pursue if it aims to increase political legitimacy and establish social security for citizens. Most importantly, people's sense of (in)security is tied to the home and thus mediated by the experience of their homes. Societal security, in other words, starts at home and it is where people experience it.

Political legitimacy in the UK

In the UK, political legitimacy is at an all-time low. Indicatively, the Ipsos Veracity Index 2025 finds that only 9% of the public trust politicians to tell the truth, while trust in government ministers stands at 14%.[164] Analysis by King's College London shows that people in the UK are more likely than those in comparable European countries to believe that government acts unfairly or does not follow rules.[165] This also has an important generational component as citizens who live in the UK and are between 18–29 years old tend to trust the national government 12 percentage points less than those 50 years old and above, compared to a 7 percentage point gap across OECD countries. Such low levels of political legitimacy are compounded by fossil fuel crises and the inability of governments to address the insecurities that people feel from housing to energy and food.

[164] Ipsos, **Ipsos Veracity Index 2025**, December 2025

[165] King's College London Policy Institute, **Public attitudes towards national government and other institutions**, May 2022

Survey evidence by More in Common UK suggests that there is a growing perception among the British public that the energy crisis is enduring, with widespread scepticism regarding the government's ability to resolve it. Six in ten Britons doubt that energy bills will ever become genuinely affordable. Only a quarter of the population believe the government has a coherent strategy to reduce household energy costs, and awareness of any measures underway is minimal. This perception of governmental inaction amid widespread hardship is contributing to voter disengagement from traditional political parties.[166]

This compounds the security risks set out in Chapters 1 and 2. Research by Ofcom suggests that people are more likely to believe disinformation if they distrust public institutions.[167] Therefore, if the UK is impacted by energy and macroeconomic crises caused by fossil fuel dependence, and if trust in public institutions is low, citizens are more likely to be misled by forces outside of government including, for example, mis- and disinformation produced by the fossil fuel industry. This can make it harder to transition as resistance against adaptation policies grows and harder to mitigate the security risks of fossil fuel dependency more broadly if technologies such as heat pumps become politicised.

Years of high energy costs have also left a deep imprint on the national mood. Across almost all income groups, households report heightened stress and anxiety, with many feeling that no amount of effort will allow them to achieve financial security or a comfortable standard of living. For numerous families, the immediate challenge has become merely managing day-to-day expenses. The cumulative strain of persistent high energy bills is a key factor in Britain's broader sense of societal fatigue and insecurity.[168]

Crises and political legitimacy

Political legitimacy is also shaped by whether government is seen to be in control, capable of responding, willing to help people, and acting fairly and transparently; all of which are tested during an energy crisis and – if compounded by previous and future crises – can prove destabilising for the UK's democratic outlook and overall societal security.

Fossil fuel dependency has meant that the UK is much more exposed to shocks, responding in the moment at a cost that is higher than financing long-term preventative measures. The UK's Climate Change Committee (CCC), for example, found that each fossil fuel energy crisis costs more than reaching net zero.[169] The inability of the government to respond to such crises weakens the perception that the government is in control, losing legitimacy in the eyes of citizens at a time when demand for intervention is highest and when trust and credibility are particularly important.

[166] More in Common, **Britain's High Energy Bills: The Permacrisis that keeps on burning**, September 2025
[167] Ofcom, **Online Nation**, December 2025
[168] More in Common, **Britain's High Energy Bills: The Permacrisis that keeps on burning**, September 2025
[169] Climate Change Committee, **Cost of Net Zero by 2050 less than a single fossil fuel price shock**, March 2026

Important here, is that a pursuit of autonomy does not mean a turn to nationalism, or indeed independence from global cooperation or multilateralism. It refers to the ability to make choices about the future direction of travel, to enact long-term policy choices, rather than to reduce cooperation. It also means an ability to contend with a set of different possible futures and conceivable alternatives. It also means recognising responsibility for climate effects. Global cooperation can increase autonomy where it enhances resilience. Conversely, a loss of autonomy means being forced into choices that are contradictory to long-term resilience, for example, by being forced to water down sanctions against Russia in the context of rising fossil fuel prices.

Each crisis weakens the ability to respond to the next crisis as repeated crises compound vulnerability. Put more simply: a crisis after a crisis is worse than had the original crisis not happened because resources and resilience to respond to the next crisis are weaker than before.

This is also important in the context of compounding and anticipated crises relating to the UK's housing stock.[170] The UK has some of the oldest housing stock in Europe and is vulnerable to overheating, flooding, subsidence and a range of stranded assets particularly damaging when houses are a type of pension investment. According to the Climate Change Committee, around 90% of the existing homes will overheat under a 2 °C GW scenario and the totality of the UK will face overheating risks in a 4 °C GW scenario.[171]

Meanwhile, climate scientists have warned that "climate change has already put ~9% of people (>600 million) outside [the human climate] niche. By end-of-century (2080–2100), current policies leading to around 2.7 °C global warming could leave one-third (22–39%) of people outside the niche".[172] Albert, likewise argues that our understanding and analysis of climate effects follows a "continuationist" bias.[173] Security strategy needs to account for the discontinuities that are possible. At the same time, existing fossil fuel crisis financial pressures weaken adaptive capacity and might mean people are less inclined to spend on adaptation, meaning that the next fossil fuel crisis and climate effects hits unadapted homes even harder.

Distributional effects are central in this context as lower-income households spend a larger share of income on energy and are more likely to live in poorly insulated homes.[174] Regional and generational differences in housing quality and income levels also mean that some areas and people are more exposed than others. Where policy responses are perceived to fall unevenly, or to protect some groups more than others, this feeds into wider perceptions of unfairness, lack of transparency and trust. Each crisis cannot be measured in isolation. This is particularly true for already vulnerable communities in the UK

[170] Ministry of Housing, Communities and Local Government, **English Housing Survey 2023 to 2024: climate resilient homes**, July 2025

[171] Arup, **Addressing overheating risk in existing UK homes**, October 2022

[172] Xu et al. **Future of the human climate niche**. May, 2024.

[173] Albert. **Beyond continuationism: climate change, economic growth, and the future of world (dis)order**. Oct, 2020

[174] UK Health Alliance on Climate Change, **Fuel poverty**, January 2024

who are hardest hit by the compounding effects of crises. In this context a new understanding of the democratic and livelihood costs of fossil fuels.

Housing and societal security

Citizens' experience of security or insecurity is mediated through their personal experience in sectors such as housing, health and transport. From a societal security perspective – that is the ability to meet basic needs – the UK's housing stock is particularly vulnerable as shocks such as fossil fuel crises directly translate into insecurity, for example, an increase in energy bills. Such threats, however, often go unreferenced in broader security assessments.

For example, while the UK's national security strategy has broadened rhetorically to include economic and societal resilience, it continues to underestimate the systemic risks associated with the UK's existing housing stock and its fossil fuel dependence. This means that security risks connected to housing are either sidelined or misidentified. Those risks central to the experience of insecurity, such as cold homes, unaffordable energy or vulnerability to weather events such as floods, often remain peripheral in formal national security planning. This is because national security and societal security are often thought of as separate. As governments are failing to provide basic services, these effects contribute to systemic shocks in volatile political systems, for example, loss of support for democratic values.

The energy price cap will increase from 1 July 2026. If the interruption to supply of fossil fuels to the UK market persists over the summer, then a further significant increase is likely in the autumn. If this happens, millions of low-income citizens will be forced to make drastic choices between heating and cutting back on essential services or increasing their overall debt. The latest English Housing Survey shows that around 3.2 million households were unable to keep warm during winter 2023–24,[175] while more recent polling suggests little improvement since the energy crisis caused by the Russian invasion of Ukraine, with around 14% of adults still reporting cold, damp homes.[176]

If the effects of the Iran war prove to be long-term, higher energy prices will increase debt for households and strains for public services. Weakening of public services and increased financial insecurity then directly translate into losses for political legitimacy, at a moment at which political trust is already at an all-time low. Losses in political trust compound: acceptance of hardship might be high during one crisis, but not during the next one.

Evidence suggests good quality housing has a stronger impact on people's ability to participate in social life than inequalities related to education, income levels, employment status, or broader socio-economic status. Research has shown that community cohesion

[175] Ministry of Housing, Communities and Local Government, **English Housing Survey 2023 to 2024: climate resilient homes**, July 2025

[176] End Fuel Poverty Coalition, **Millions still living in cold, damp homes as health inequalities continue**, December 2025

and the social fabric in the UK are eroding, leading to social disconnection as many Britons feel isolated from broader society. In the UK, perceptions of social division are already high, with 84% of people reporting strong divisions in society.[177] Economic stress linked to housing and energy costs will deepen these divides.

Risk of social breakdown

There is a well-established relationship between widening inequality, economic stress and political instability. Historical work by Luke Kemp identifies inequality as a recurring feature in cases of societal breakdown across all of recorded history, reducing resilience and increasing the likelihood of conflict.[178] Energy crises drive such wealth inequality drastically.

Although complex, the links between energy crises and food and fuel price increases suggest that energy crises are a significant risk factor in weakening political systems. Perhaps the clearest example of this is the energy crisis in Sri Lanka of 2022. Its causes were complex and multifaceted, and many were politically avoidable, but the crisis culminated in rolling power cuts, major food shortages and violence at petrol stations, resulting in protests that eventually overthrew President Gotabaya Rajapaksa who fled the country. Protests in Ireland more recently have forced policymakers into concessions that continue to prolong the sources of insecurity, for example by increasing fossil fuel dependency through the extension of fossil fuel subsidies rather than addressing the source of the problem which is one of affordability for people.

This is not to say that vulnerable communities should be left exposed to energy crises, but that governments need to be able to address the sources of insecurity rather than its symptoms. Such excess fossil fuel costs, for example, have cost Europe equivalent to around 40% of what would be needed to transition Europe to a clean energy system.[179] The continued investment in those sources that produce insecurity further weaken the credibility that governments address rather than cause crises. Such grievances will rise in reference to climate effects as national security policies fail to meet and recognise the demands of those who experience them.

This is also true for climate change and future shocks that will compound the vulnerability that already exists in the UK's housing stock and that might drive further disparity across households in England especially between those households struggling with finances and housing costs and those increasingly exposed to risk. Climate effects such as heatwaves, floods, droughts, but also increased inflation and unaffordability of food risk driving widespread vulnerability particularly among families and those in social housing as well as

[177] More in Common, **Shattered Britain: Making sense of what Britons want in a country that feels broken**, July 2025

[178] Luke Kemp, **Goliath's Curse: The History and Future of Societal Collapse**, Penguin Books

[179] Jeff Colgan et. al, **Quantifying the value of energy security: How Russia's invasion of Ukraine exploded Europe's fossil fuel costs**, September 2023

those who live in temporary accommodation. Yet, climate adaptation has been consistently underfunded and deprioritised in security policies.

Comparative studies show that major economic crises, where households experience sustained declines in living standards and overall economic uncertainty, are followed by increases in support for populist, far-right and fascist parties.[180] Isabella Weber speaks in this context of economic policy that needs to address the roots of this support.[181] It follows that threats to democracy can be a consequence of fossil fuel induced energy crises and this interaction is rarely understood in the context of national security strategies.

National security implications of reduced political legitimacy

Far-right networks and state-sponsored dis- and misinformation play a crucial role in inflaming rhetoric that can lead to violence.[182] In the context of climate change, for example, ”Russian narratives on climate and other issues often find symbiosis with reactionary or authoritarian movements in Europe in the United States” according to the Council on Strategic Risks, while ”Russian propaganda taps into pre-existing grievances, toxic digital spaces, and far-right rhetoric”.[183] Climate change denial, slowing the energy transition and using economic hardship produced by fossil fuel crises to tap into existing grievances are key components in this strategy.

Another recent example of how UK housing and standard of living inequality can pose a major threat to our national security are in reactions to COVID-19 lockdowns. A climate of mistrust in public institutions both crystalised and compounded under the critical lockdown measures brought in to mitigate the spread of COVID-19, which was responsible for the deaths of over 200,000 UK citizens. Misinformation dominated the online spaces that people were confined to, and conspiracy theories ran rampant. Resulting vaccine resistance or lack of compliance then threatened the lives of millions of British people. The deadly mistrust of epidemiolocal experts and response efforts during the pandemic is comparable to government response to energy crises. This is because the nature of these threats is that they are irresolvable without large scale public buy-in while simultaneously exposing the systemic inequalities which breed social division and mistrust of public institutions.

In other words, the UK’s crisis of political legitimacy makes it particularly susceptible to internal and external hostile actors who wish to undermine security and the democratic functioning of the state including far-right parties. If future energy crises are not properly dealt with, there will be more opportunities for adversaries to turn public frustrations

[180] LSE, **Economic Uncertainty Breeds Support for Populist Parties**, July 2024
[181] Isabella Weber, **To Defeat the Far Right, We Must Adopt an Anti-Fascist Economic Policy**, February, 2025
[182] University of Bath, **Study of Tommy Robinson’s social media shows how he mobilises support without direct calls to action**, April 2026
[183] Council on Strategic Risk, **Putin, Permafrost and Propaganda**. December 2025

against public institutions, weakening the power of the state to act and respond to crises, and potentially creating a catastrophic feedback loop. Causes of civil unrest and the material insecurity on basis of which mis- and disinformation flourish, need to be addressed structurally so that people are and feel safer in the areas of life that matter most to them: food/water, housing, health and transport. Eliminating fossil fuel dependency is one key intervention that can help to make people feel more secure and help defend democracy.

Political legitimacy and the energy transition

A society's ability to adapt effectively to major transitions such as shifting to a low-carbon economy or managing energy price shocks depends on its underlying community and institutional strength. In other words, a society's ability to address the sources of insecurity and to develop forward-looking visions requires the ability to develop transformative capacity. Conversely, when large segments of the population face increasing hardship, their ability to engage constructively in change processes or invest in new opportunities becomes more limited. Similarly, studies by the World Bank show that social protection systems and inclusive governance significantly improve resilience by buffering vulnerable groups against shocks and enabling participation in transformation.[184]

In the UK, rising energy and housing costs exacerbate economic pressures on already stretched households, reducing disposable income and increasing stress levels while adding to wealth inequality and overall poverty. This combination threatens to weaken public support for necessary policies, slowing progress and increasing social resistance. Without strengthening social safety nets and addressing inequality, society's adaptive capacity will be eroded when it is most needed.

At the same time, each crisis needs to be seen in the context of compounding and systemic risk. Events that might have been difficult and manageable prior to an energy crisis, can be systemic and devastating shortly after one has already happened. Every fossil fuel energy crisis thus continues to erode adaptive capacity in the face of crises, making the next one even harder to manage in security terms as seen in the context of the fossil fuel crisis caused by the US/Israeli war on Iran shortly after the energy crisis produced by Russia's invasion of Ukraine. This volatility shows that the reduction of fossil fuel dependency as a national security risk is a key task in building a resilient and democratic society.

This means that it is not just policies of today that are challenged by energy and climate crises, but the ability to adapt, to be forward-looking and to be able to respond to anticipated harms that come from future fossil fuel dependency. A weakened adaptive capacity will, in turn, further erode societal trust and increase the demand on governments to address insecurity when it becomes increasingly unable to do so.

[184] World Bank. **State of Social Protection Report**, April 2025

In summary, the UK's strategic objectives of deterrence of attacks, a strong democracy and limiting climate and planetary effects need to be pursued in a way that does not focus on the first alone.[185] Addressing fossil fuel dependency is one way of responding to all three strategic objectives.

Threat assessment III

This assessment concludes that the current composition of UK housing stock poses a severe national security threat in the context of political legitimacy and societal security for several reasons.

Threat	Likelihood (low–high)	Impact (low–high)	Resilience / recoverability (low–high)	Threat level (low–critical)
3a – Degradation of political legitimacy	High	High	Low	Severe
3b – Loss of political agency	Medium	High	Medium–High	Moderate
3c – Mis- and disinformation	High	High	Low	Severe
3d – Societal insecurity	High	High	Medium–High	Severe
3e – Weakening of democratic system	High	High	Low	Critical
3f – Loss of adaptive capacity	Medium–High	High	Low	Severe
Overall judgement				Severe–Critical

[185] See also Benoit Pelopidas on the point of objectives the French context. **Nuclear Futures, Utopias, and the Case for a Renewed 'Strict Sufficiency'**. December 2025

Threat 3a: Degradation of political legitimacy (Severe)

Likelihood: High – The degradation of overall political legitimacy is not only a likelihood; multiple crises that have raised the cost of living and affordability concerns for citizens have already produced a weakened climate for political legitimacy. Overall trust numbers are at an all-time low, as is confidence in the government's ability to address crises. Confidence in political processes is lower among younger generations.

Impact: High – The impact is defined by crises that require weathering by governments, but any crisis will test weak levels of political legitimacy as compliance might be difficult to achieve if citizens are unwilling to shoulder the cost of crisis interventions. Overall weakened political legitimacy has significant downstream consequences for the stability of the democratic system and adaptive capacity.

Resilience/Recoverability: Low – Once political legitimacy is eroded it is difficult to restore at the same time at which state capacity is weakened by compounding effects of crises.

Threat 3b: Loss of political agency (Moderate)

Likelihood: Medium – Loss of political agency results in governments' inability to make decisions free of external coercion and pressures. This is measured in susceptibility to external and internal crises, but also in the ability to realise long-term strategies and policies. The likelihood is medium because the government's ability to act is currently still high. This means it can exercise agency in addressing the vulnerabilities described in this report. If structural vulnerabilities remain unaddressed, political agency will weaken over time and transition costs will rise.

Impact: High – Loss of political agency has severe consequences for both political legitimacy and the ability to choose a course of action in the interest of people living in the UK. Presence of political agency, in turn, helps resilience, overall trust and the ability to think in longer-term horizons.

Resilience/Recoverability: Medium–High – This depends on whether and how structural vulnerabilities in UK housing stock are addressed in response to crises that expose those vulnerabilities

Threat 3c: Mis- and disinformation (Severe)

Likelihood: High – Mis- and disinformation is already high and has proven to be difficult to contain while it feeds off existing material concerns and grievances.

Impact: High – This has directly contributed to lower levels of political trust while it can make crisis responses less effective. The impact on the stability of the overall political system is high.

Resilience/Recoverability: Low – Symptomatic treatment of housing insecurity cannot alleviate the sources of mis- and disinformation unless housing is understood as a key national security sector. Reconnecting to communities and building security in affordable

housing can significantly help address some of the material concerns that mis- and disinformation feeds on.

Threat 3d: Societal insecurity (Severe)

Likelihood: High – Societal insecurity is already high and is likely to increase with the consequences of the Iran war pulling a greater number of people into poverty and those affected by cost-of-living concerns.

Impact: High – The consequences of societal insecurity for political legitimacy are extremely high and can also carry consequences for the overall stability of the political system. The provision of societal security is a key national security task.

Resilience/Recoverability: Medium–High – While difficult and longer-term, it is perfectly possible to strengthen societal security with interventions in those areas key to the experience of insecurity, in this report housing and homes.

Threat 3e: Weakening of democratic system (Critical)

Likelihood: High – The weakening of the democratic system is high if societal insecurity is persistently high. Key areas of societal insecurity from the cost-of-living crisis to energy affordability are negatively influenced by fossil fuel dependency. The level of weakening depends on societal security choices taken today.

Impact: High – A key question for national security is what and who a national security strategy seeks to protect. The impact of a weakened democratic system is very high especially where existing national security policies cannot protect either people or the democratic system. A loss of the democratic system will not only lead to lack of transparency and a likely increase in corruption, but also severe and life-threatening insecurities for a range of people living in the UK.

Resilience/Recoverability: Low – Once a democratic system has weakened and anti-democratic parties have been elected it is very difficult and hard to rebuild a democratic system. Not impossible but connected to significant costs and long-term buy-in from people is required.

Threat 3f: Loss of adaptive capacity (Severe)

Likelihood: Medium–High – Adaptive capacity functions on a spectrum and is measured not only as willingness to shape a country's future but also risk tolerance and the ability to co-create adaptive mechanisms. This is particularly important in the context of climate effects and the energy transition, but also in the context of future crises.

Impact: High – The loss of adaptive capacity carries extremely high impact especially as future crises compound, in particular in reference to the management of future crises, the ability to address problems rather than symptoms and the ability for an all-of-society energy transition.

Resilience/Recoverability: Low – The erosion of adaptive capacity is very difficult to contain, and adaptive capacity itself is difficult to measure without context. Yet, every crisis that people are not prepared for risks producing greater insecurity, damages and loss than a context to and in which communities have adapted.

Recommendations III

1. Treasury and the Department for Energy Security and Net Zero to prioritise funding to support demographics most at risk during energy crises, including action to increase energy efficiency and electrification.
2. Treasury and the Department for Energy Security and Net Zero to adopt longer-term cost–benefit horizons, expanding support for the gas reduction *and* climate-adaptation of UK homes including support for housing that is more resilient to droughts, floods and storms while adapting the existing housing stock to threats of overheating starting with public buildings such as hospitals and schools.
3. The Department for Energy Security and Net Zero to prioritise decentralisation of UK energy and storage to communities and households including expanding community energy and providing more grant funding for home electrification.
4. Cabinet Office to classify the risk of "fossil fuel dependency for home heating" as a distinct and "chronic risk" in the next edition of the National Risk Register, defined as a threat to "our economy, community, way of life, and national security" manifesting over a decades-long timeframe, requiring a robust government-led response – all of which applies directly to fossil fuel reliance.
5. Government and Joint Intelligence Committee to launch a joint inquiry into action by hostile states, malign actors and special interest lobbyists to spread disinformation regarding clean energy to perpetrate fossil fuel dependence and sow division.

Chapter 4: Strategic threat assessment

This strategic security review of British homes concludes that the current composition of UK housing stock, defined largely by heavy reliance on imported gas and poor energy efficiency, **poses a** severe **–** critical **strategic threat** to the UK's national security. While individual analyses of threats to home front readiness, economic and financial stability, and political legitimacy and societal security each achieve a threat rating of severe, together they pose a compounding risk with a worrying direction of travel underscored by a lack of political vision or progress.

- **Threat to home front readiness**: The UK's gas supply and associated infrastructure are vulnerable to many forms of attack including disruption, weaponisation, espionage, sabotage, and conventional attack. These geographically clustered positions are neither defendable, nor rapidly repairable – presenting a severe threat to the country, and UK homes themselves.

- **Threat to macro-economic stability**: The UK economy is highly exposed to the volatility of international gas markets. Price shocks impact individual households both directly via increased energy bills and indirectly through wider inflation and propagation of risks though both mortgage and insurance markets. Inflation coupled with suppressed demand harms growth and public finances, while the accumulation of private debt combines with these factors to threaten stability of financial systems. The threat level is identified as severe.

- **Threat to political legitimacy and societal security**: The UK's geopolitical and diplomatic legitimacy is undermined by the inability to produce security where it is felt by people: in homes leading to lower trust in politicians, openness to dis- and misinformation and a reduced adaptive capacity within society. The threat level is identified as severe.

The individual threats assessed in Chapters 1–3 are plotted on Figure 7; more detail on the individual assessments is provided in the respective chapters.

We conclude that to address these compounding risks, the UK needs to understand homes and housing as a key area of national security concern, reflected in a strategy that recognises that fossil fuel dependence increases financial and economic vulnerability at the household and state level while driving societal insecurity.

Overview of threat assessments from Chapters 1–3

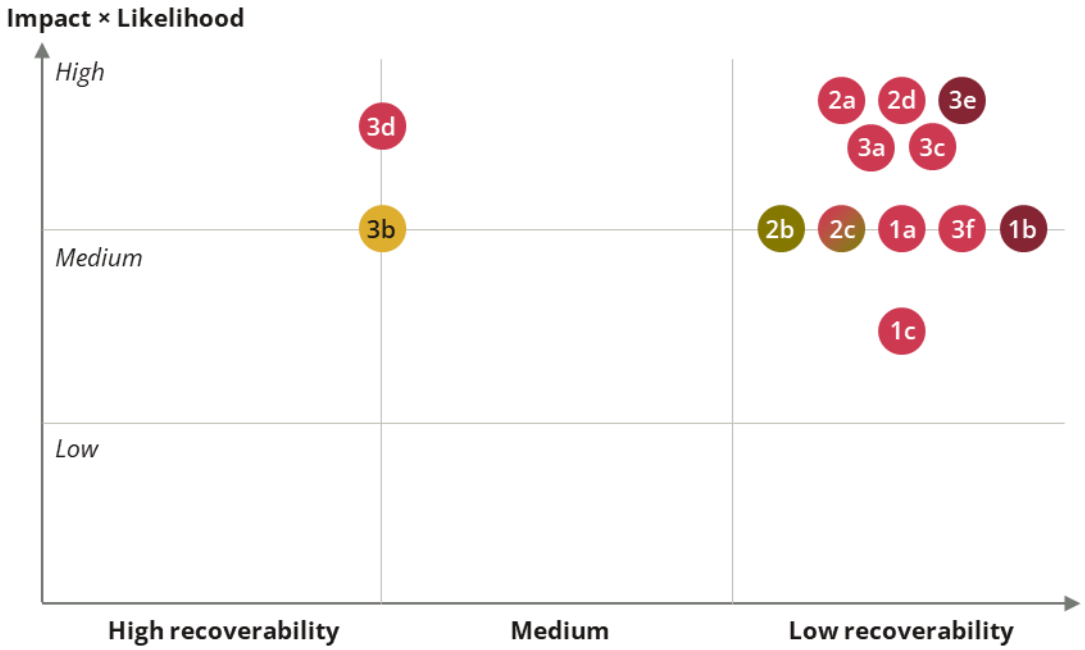

Figure 7: Overview of the treat assessments for the threats identified in Chapters 1–3. This overview helps to visualised that all threats identified have a combination of medium or high likelihood and potential impact, and that additionally for the majority of threats the recoverability would be low if impacts do materialise. For this reason, we consider that the current composition of the UK housing stock poses a severe–critical threat overall.

Core threats posed by housing stock composition

- **Gas dependency for heating:** Gas dependency is a persistent and recurring national security threat especially in relation to gas dependency of UK homes for heating. It is at the core of most vulnerabilities of the UK's housing stock and exacerbates conditions of insecurity and other threats to life and livelihoods.
- **Systemic collapse**: Systemic collapse is equivalent to what we call "housing tipping points" (such as mortgage market collapse or democratic system collapse) which once reached are almost impossible to meaningfully recover from, at least in the short term because they change the systemic conditions under which governments can (or cannot) function.
- **Loss of adaptive capacity**: Adaptive capacity is a key mechanism of functioning societies. Especially as the effects of AI, geopolitical risk and climate change materialise, societies require enabled and strengthened adaptive capacity. If adaptive capacity is reduced before these crises hit, their effects will be drastically worse at a time when a transition is most needed.

Summary of threats arising from housing stock composition

CORE THREATS

HOME FRONT READINESS	ECONOMIC AND FINANCIAL STABILITY	POLITICAL LEGITIMACY & SOCIETAL SECURITY
Gas dependency for heating. A persistent national security threat. It sits at the core of the UK housing stock's vulnerabilities and exacerbates other threats to life and livelihoods.	**Systemic collapse.** "Housing tipping points" (e.g. mortgage market or democratic system collapse) which, once reached, are almost impossible to recover from. They change the conditions under which governments can function.	**Loss of adaptive capacity.** A key mechanism of functioning societies. As AI, geopolitical risk and climate change materialise, adaptive capacity is essential. If reduced beforehand, the effects will be drastically worse.
1a Gas supply chain disruption and weaponisation	**2a** Inflation and inability to absorb increased costs and bills	**3a** Degradation of political legitimacy
1b Critical infrastructure attacks	**2b** Loss of financial agency and impact on societal security	**3b** Loss of political agency
1c Catastrophic event	**2c** Impact on productivity and growth projections, affecting cost of debt	**3c** Mis- and disinformation
	2d Lower fiscal headroom and increased cost of debt-servicing	**3d** Societal insecurity
		3e Weakening of democratic system
		3f Loss of adaptive capacity

HYBRID THREATS

Xa Reduced "whole-of-society" response *(1c × 3d × 3g)* In the event of a catastrophic event related to British gas infrastructure, preparing a coordinated national response within a crisis or warfighting context would be made more difficult if society is already divided, in crisis, and if the government is regarded as illegitimate.

Xb Emergency response *(1b × 1c × 2d)* There is a risk that the fiscally degrading impact of recurring economic setbacks due to fossil fuel energy crises limits the state's ability to adequately resource and plan for emergency response scenarios such as major disruption to gas supply.

Xc Information war *(1a–c × 3c)* The potential negative impact of threats to home front readiness increase with severity of disruption / attack in a society susceptible to and rife with mis- and disinformation.

Xd Financial stress *(1a–c × 2a–d × 3e)* Reduced ability of individual households to absorb external shocks will directly impact their sense of financial agency, which in turn has significant implications for social cohesion and societal security. Financial security is central to households' sense of political agency and safety.

Xe Erosion of democratic resilience *(3e × 3b × 2d)* Fiscal constraints that limit public investment in services, welfare and democratic infrastructure can intensify citizens' sense of political disempowerment.

Xf Strategic paralysis through perpetual crisis management *(3f × 3a × 2c)* Repeated crises erode the state's adaptive capacity by forcing institutions into continuous short-term crisis response.

Xg Loss of autonomy *(1a–c × 2a–d × 3e × 3f)* Long-term dependence on fossil fuels and repreated exposure to price volatility, supply disruptions, and geopolitical leverage erodes economic stability and reduces fiscal space for investment in resilience. The compound effect is a society locked into a self-reinforcing crisis energy economic model that amplifies external shocks.

Figure 8: Summary of all threats identified in this report. For more detail on the core threats, see the threat assessments in Chapters 1–3. The hybrid threats are discussed on the following page.

Hybrid threats

Where two or more threats intersect and compound, new intersecting threats emerge presenting deeper strategic concern and presenting novel risks with far reaching implications.

Threat Xa. Reduced whole-of-society response (Threat 1c: Catastrophic event × Threat 3d: Societal insecurity × Threat 3g: Degradation of political legitimacy). In the event of a catastrophic event related to British gas infrastructure, preparing a coordinated national response within a crisis or warfighting context would be made more difficult if society is already divided, in crisis and if the government is regarded as illegitimate.

Threat Xb. Emergency response (Threat 1b: Critical infrastructure attacks × Threat 1c: Catastrophic event × Threat 2d: Lower fiscal headroom and increased cost of debt-servicing). There is a risk that the fiscally degrading impact of recurring economic setbacks due to fossil fuel energy crises limits the state's ability to adequately resource and plan for emergency response scenarios such as major disruption to gas supply.

Threat Xc. Information war (Threats 1a–1c × Threat 3c: Mis- and disinformation). The potential negative impact of threats to home front readiness increase with severity of disruption/attack in a society susceptible to and rife with mis- and disinformation.

Threat Xd. Financial stress (Threats 1a–1c × 2a–d × Threat 3e: Weakening of democratic system). Reduced ability of individual households to absorb external shocks will directly impact their sense of financial agency which in turn has significant implications for social cohesion and societal security. Financial security is central to households' sense of political agency and safety.

Threat Xe. Erosion of democratic resilience (Threat 3e: Weakening of democratic system × Threat 3b: Loss of political agency × Threat 2d: Lower fiscal headroom and increased cost of debt-servicing)**.** Fiscal constraints that limit public investment in services, welfare, and democratic infrastructure can intensify citizens' sense of political disempowerment. When individuals feel they lack agency and perceive democratic institutions as unresponsive or ineffective, the legitimacy and resilience of the democratic system weaken. Combined with structural fiscal pressures, this creates a compound risk in which democratic erosion accelerates, reducing the state's capacity to mobilise society, maintain a sense of community, and respond effectively to external shocks.

Threat Xf. Strategic paralysis through perpetual crisis management (Threat 3f: Loss of adaptive capacity × Threat 3a: Degradation of political legitimacy × Threat 2c: Impact on productivity and growth projections). Repeated crises erode the state's adaptive capacity by forcing institutions into continuous short-term crisis response. As political legitimacy weakens and economic performance deteriorates, so too does the bandwidth for long-term strategic planning. Policymakers become trapped in a reactive mode, unable to invest in future-oriented reforms or resilience-building. This creates a compound risk where the system's ability to anticipate, prepare for, or mitigate future crises is

progressively degraded reinforcing those systems that produce crises, such as through fossil fuel dependency.

Threat Xg. Loss of autonomy. (Threat 1a–1c: Fossil-fuel supply disruptions × Threat 2a–2d: Economic fragility from energy-linked shocks × Threat 3f: Loss of adaptive capacity & Threat 3e: Weakening of democratic system). Long-term dependence on fossil fuels embeds structural vulnerabilities across the energy, economic, and societal domains. Repeated exposure to price volatility, supply disruptions, and geopolitical leverage erodes economic stability and reduces fiscal space for investment in resilience. As households face recurring energy-driven financial stress, trust in institutions weakens and adaptive capacity declines. Over time, this dependency constrains the state's ability to transition to more secure energy systems, undermines democratic legitimacy, and heightens societal insecurity. The compound effect is a society locked into a self-reinforcing crisis energy-economic model that amplifies external shocks.

Chapter 5: Recommendations

To mitigate the severe national security threat posed by the current composition of British homes, we restate our set of strategic solutions. These solutions must be launched alongside a narrative tone shift, delivered by government officials across Whitehall, that the net zero transition is not simply about climate and energy, but is a national security priority.

Home front readiness

1. Number 10 to launch a national "Home Front Mission" to accelerate electrification of UK homes and establish a plan to phase out oil and gas for home heating.
2. The Department for Energy Security and Net Zero, in collaboration with NESO, to set a mission to deliver a more strategically decentralised energy system at pace. Also, in collaboration with the Ministry of Defence, to mandate inclusion of dual use equipment for offshore energy assets.
3. The Department for Energy Security and Net Zero to accelerate the deployment of "Spitfire technologies" such as heat pumps, solar PV, batteries, and energy efficiency measures.
4. The British military to develop emergency scenario plans and defence strategy with allies, particularly around joint defence (surveillance and reconnaissance) of North Sea energy infrastructure.
5. The next edition of the National Risk Register must upgrade the risk status of conventional attack on gas infrastructure, reflecting the critical vulnerability posed.
6. The Ministry of Defence to commission a review into the vulnerability of oil and gas platforms, pipelines and clustered infrastructure, with regards to direct attack and sabotage, which considers operational continuity under these scenarios.
7. The Department for Business and Trade to prioritise diversification of supply chains for clean energy technologies and develop incentives to maximise UK manufacturing.
8. NESO and Distribution Network Operators to work with Cabinet Office and Ministry of Defence to ensure there is adequate planning for home resilience and crisis management.
9. NESO to investigate viability of repurposing UK long-term underground gas storage facilities – primarily salt caverns and depleted offshore fields – to manage seasonal demand and supply fluctuations with domestically produced energy (e.g. green hydrogen).

10. When designing the new Centralised Strategic Network Plan, NESO should consider the defensibility and security of the energy system.

Economic and financial stability

1. Treasury to prioritise action to make home electrification affordable and ensure it is cheaper to use a heat pump than a gas boiler. E3G has developed a comprehensive set of recommendations for lowering the cost of running heat pumps.[186]

2. HMT to a launch a sovereign Security and Resilience Bond to accelerate investment in the electrification of the UK economy, including its housing stock, and deliver resilience for UK infrastructure and communities to the impacts of climate change. Thematic bonds tend to attract higher prices and be less vulnerable to capital flights during times of crisis.

3. The Bank of England and the Office for Budget Responsibility to coordinate a review to identify areas of vulnerability within owner-occupied and buy-to-let mortgage portfolios, building these risks into future analysis, projections and alignment of prudential framework. This includes incorporating systematic assessment of exposure to fossil fuel price volatility and availability of home insurance into monetary and financial stability monitoring, and the use of standardisation of EPC ratings to align prudential frameworks with the low-interest rate financing for retrofits provided by the National Wealth Fund (similar to initiatives undertaken by the ECB).

4. Mapping by the Bank of England of strategic gas dependency by country and transmission channels building on the Bank of England's recent System-Wide Exploratory Scenario.

5. The Department for Energy Security and Net Zero to launch a long-term national programme offering zero interest-rate financing for retrofits. This investment in the regeneration of UK housing stock, bringing homes to at least EPC C would reduce exposure to global energy volatility, cut bills and support macroeconomic stability. Public investment should be blended with affordable private finance and delivered through clear regulatory timelines.

6. The Department for Energy Security and Net Zero to address the rental sector as a systemic blind spot in retrofit schemes – designing phased minimum energy-efficiency standards and targeted landlord support mechanisms to reduce arrears risk and narrow the resilience gap between owners and renters. These standards must prioritise displacing gas and boost electrification.

7. The Bank of England review of monetary policy framework to include consideration of green term funding schemes. This would explicitly shield renewable energy and

[186] E3G, **Heat pumps have the potential to halve UK heating bills**, August 2025

electricity infrastructure upgrades from rate hikes caused by fossil fuel market volatility.

8. The Department for Energy Security and Net Zero and Ofgem to support the decoupling of electricity prices from fossil fuels through continued investment in scaling renewables and energy market reform. E3G has produced analysis setting out how electricity market reform could be achieved.

Political legitimacy and societal security

1. Treasury and the Department for Energy Security and Net Zero to prioritise funding to support demographics most at risk during energy crises, including action to increase energy efficiency and electrification.

2. Treasury and the Department for Energy Security and Net Zero to adopt longer-term cost–benefit horizons, expanding support for the gas reduction *and* climate-adaptation of UK homes including support for housing that is more resilient to droughts, floods and storms while adapting the existing housing stock to threats of overheating starting with public buildings such as hospitals and schools.

3. The Department for Energy Security and Net Zero to prioritise decentralisation of UK energy and storage to communities and households including expanding community energy and providing more grant funding for home electrification.

4. Cabinet Office to classify the risk of "fossil fuel dependency for home heating" as a distinct and "chronic risk" in the next edition of the National Risk Register, defined as a threat to "our economy, community, way of life, and national security" manifesting over a decades-long timeframe, requiring a robust government-led response – all of which applies directly to fossil fuel reliance.

5. Government and Joint Intelligence Committee to launch a joint inquiry into action by hostile states, malign actors and special interest lobbyists to spread disinformation regarding clean energy to perpetrate fossil fuel dependence and sow division.

Conclusions

The evidence presented shows that the current composition of British housing stock constitutes a severe and growing national security threat. The UK exists in a more volatile and contested global context; it needs a better understanding of, and response to, the structural, economic, political and societal vulnerabilities embedded in its citizens' homes.

Addressing this challenge will require significant investment regardless of the path chosen. Yet addressing crises symptomatically rather than structurally will be more expensive and the capacity to do so weakens with each crisis. Efforts to defend the status quo, such as hardening critical infrastructure nodes or expanding protective systems, may offer short-term reassurance but will only serve to entrench existing weaknesses. Fossil fuel reliant homes trap the UK into a state of permacrisis; more strategic, and more durable solutions are needed.

The stakes are high, but so is the potential for making a significant intervention in improving the UK's structural vulnerabilities. If decisive action is taken, the UK will be better positioned to reduce its attractiveness as a target for sabotage or coercion, withstand macroeconomic turbulence, and restore public confidence in the state's ability to provide security. Homes will otherwise continue to shift from assets of national strength to sources of systemic risk – amplifying financial strain, exposing critical dependencies, and reinforcing perceptions of political and social fragility. By strengthening the resilience of British homes now, the UK can materially reduce its exposure.

The question is not whether decisive action is required, but whether it will be undertaken proactively and strategically, or for how much longer it can be taken reactively or under duress. The consequences of delay are clear; taking action is an active investment in the durability of the UK's economic and political system.

Annex A: Glossary of terms

Adaptability: The ability to learn from incidents and adjust systems, processes, or behaviours to reduce future risk.

Capability: The assessed ability of an actor to deliver harm, taking account of technical, organisational, financial, and operational capacity.

Continuity: The ability to maintain essential functions and services during and immediately after a disruptive event.

Economic impact: The potential impact on economic activity, public and household finances, markets, or critical sectors.

Imminence: The assessed timescale over which a threat could realistically materialise, based on indicators, triggers, and warning.

Intent: The assessed degree to which an actor is motivated and willing to cause harm to UK interests.

Human impact: The potential impact on life, physical safety, health, and the aggregate individual wellbeing.

National Security impact: The potential impact on the UK's sovereignty, defence, intelligence, democratic institutions and capacities, or ability to protect national interests and citizens.

Political / Reputational impact: The potential impact on domestic political stability, ministerial confidence, and the UK's international standing.

Recoverability: The ability to restore normal operations in a timely and cost-effective manner following disruption.

Resistance: The ability of systems or organisations to prevent, deter, or absorb the effects of a threat.

Societal impact: The potential impact on public confidence, social cohesion, and the functioning of everyday life.

Strategic: an action, decision, or plan carefully designed to achieve a specific, long-term goal or overall advantage considering a comprehensive range of factors from multiple, interrelated domains/sectors. This thinking is beyond short-term fixes, anticipating challenges and optimally allocating resources to secure a lasting benefit.

Vulnerability: The degree to which an asset, system, or population is exposed to, and susceptible to, exploitation by a threat.

Annex B: Key facts

Britain's reliance on gas

85% of the UK's 30 million homes are heated by gas boilers, collectively consuming the lion's share (more than one-third) of all gas used in the UK annually.[187] Roughly half of this gas is currently imported.[188]

It is estimated that more than two-thirds of gas will need to be imported from overseas by 2027 however many new exploration licenses are issued, rising to 94% by 2050.[189] In just twenty to thirty years, if the UK does not undergo an accelerated transition to electrified heat, it will be effectively entirely reliant on imported gas for home heating.

The UK's economically viable North Seas gas reserves are in terminal decline, already depleted by between 85% and 93%.[190]

New oil and gas discoveries licensed over 14 years by the previous UK Conservative governments have to date produced in total just over one month's worth of gas.[191]

Replacing a gas boiler with an electric heat pump for space heating and hot water reduces an individual home's reliance on gas by 74%.

Installing solar panels can reduce a typical UK home's grid electricity consumption by 20–40%, rising to over 50% with battery storage, while helping to reduce peak-time grid demand.[192]

According to research from the Gas Safe Register, the average UK household wastes £784 annually on preventable energy losses (of which two-thirds arise from heating system inefficiencies and water heating waste). This figure represents nearly 23% of the typical household's energy bill.[193]

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[187] Energy UK, **Fuelling the future: Prioritising the gas transition for Net Zero**, accessed 20/05/2026

[188] Department for Energy Security and Net Zero, **Digest of UK Energy Statistics (DUKES) 2025**, July 2025

[189] Renewable UK, **Can North Sea oil and gas really power Britain's future?**, September 2025

[190] Uplift, **The Declining Economics of the North Sea**, November 2025; ECIU, **Around 90% of UK North Sea oil and gas 'already drained dry' – analysis**, March 2026

[191] Uplift, **Just One Month's Gas Supply From 14 Years of Licensing by Previous Government**, March 2026

[192] Green Match, **Average Monthly Electricity Bill With Solar Panels UK (Guide 2026)**, October 2025

[193] Gas Safe Register, **UK Household Energy Waste: How Much Money Goes Down the Drain**, July 2025

The cost of fossil fuel crises

The fossil fuel crisis caused by the invasion of Ukraine cost the government a total of £183 billion.[194] For context, that is twice the UK's total defence spending for the 2025–26 financial year.[195] One fossil fuel crisis costs as much as the net cost of transitioning the UK to net zero.[196]

The war in Ukraine has already cost the average UK household £2,200 due to higher energy bills.[197]

The initial supply chain disruption from the closure of the Strait of Hormuz resulted in wholesale gas prices rising 50% in a matter of days.[198] This ongoing conflict has led Ofgem to raise the energy price cap in the summer of 2026 by 13%, pushing energy bills up by an average of £221a year.[199]

Gas continues to set the marginal price in the UK 60 - 85% of the time,[200&201] compared to 40% in Germany or 15% in Spain,[202] giving it an outsized impact on retail electricity prices.

In 2024, UK households spent, on average, 8% of their income on energy.[203] However, for low-income households this goes up to as much as 41%.[204]

Within weeks of Russia's full-scale invasion of Ukraine in February 2022, European gas benchmarks surged, up more than 25% in the first two weeks, directly resulting in domestic inflationary pressure, contributing to the UK's peak inflation rate of 11.1% in October 2022,[205] with energy inflation at 58.6%.[206]

Six in ten Britons doubt that energy bills will ever become genuinely affordable. Only a quarter of the population believes the government has a coherent strategy to reduce household energy costs.[207]

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[194] E3G, **Cost of the fossil fuel crisis in the UK**, November 2025
[195] House of Commons Library, **UK defence spending**, October 2025
[196] Climate Change Committee, **Cost of Net Zero by 2050 less than a single fossil fuel price shock,** March 2026
[197] E3G & ECIU, **Cost of the fossil fuel crisis in the UK**, November 2025
[198] The Independent, **How the Iran-US war could affect cost of living in the UK – from energy bills to petrol and groceries**, March 2026
[199] The Times, **Energy price cap surge to push up bills by £221 in July**, May 2026
[200] Gov.uk, **Decisive action to break influence of gas on electricity prices**, April 2026
[201] ECIU, **"Marginal Gains. How wind is pushing gas out of the power market and cutting costs",** October 2025
[202] Ember, **Latest energy shock reminds Europe of its risky gas reliance**, 13 Mar 2026
[203] Bank of England April 2026 Monetary Policy Report
[204] Citizens Advice, **Essential bills "eating away" at incomes of lowest earners**, Mar 2025
[205] OBR, **Fiscal Risks and Sustainability**, July 2023.
[206] **Gas and electricity prices during the 'energy crisis' and beyond** - House of Commons Library
[207] More in Common, **https://www.moreincommon.org.uk/latest-insights/britain-s-high-energy-bills-the-permacrisis-that-keeps-on-burning/,** September 2025

By mid-2025, the average energy bill was approximately £1,709–1,896, roughly £750 higher than before the fossil fuel induced crisis (equivalent to an additional monthly mortgage payment for the average household).[208]

Household energy debt reached £4.43bn by Q2-2025, more than triple pre-crisis levels, and over one million customers held electricity or gas debt without repayment plans.[209]

How renewables mitigate fossil fuel crises

UK investment in wind power has already saved consumers around £104 billion between 2010 and 2023 by lowering electricity prices and reducing demand for natural gas, which has helped offset rising gas costs.[210]

Wind power reduced the wholesale price of electricity by up to a quarter (25%) in 2024, due to wind power diluting the link between power prices and gas prices.[211]

Despite the summer 2026 price cap rising 13% due to the gas shock of the Iran war, for the first time in a major energy crisis, UK electricity prices are not rising in lockstep with gas prices thanks to the rollout of renewable energy.[212] Purely looking at wholesale costs, the Iran war has led to an increase in gas prices of ~54%, whereas the increase in electricity price has been just 17%.[213]

The national security risks of gas dependency

The UK is reliant on four strategically vulnerable gas infrastructure clusters:

- The St Fergus Gas Terminal on the northeast coast of Scotland near Peterhead (25–50% of UK gas supply), supplied by the Norwegian Vesterled, Tampen Link, and Gjøa pipelines.
- The Bacton hydrocarbon gas processing plant near Great Yarmouth (up to 33% of UK gas supply), supplied by the BBL pipeline from the Netherlands and the IUK interconnector from Belgium.
- The Isle of Grain LNG Terminal in Kent (up to 25% of UK gas supply).
- South Hook & Dragon LNG Terminal near Milford Haven (up to 20% of gas supply).

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[208] The Guardian, **Cost of global energy crisis on households in Great Britain 'to hit £3,000 by summer'**, February 2025

[209] Ofgem, **Debt strategy update: supporting the reduction of energy debt**

[210] University College London, **Wind power delivers £104 billion net benefit to UK consumers**, October 2025

[211] Energy and Climate Intelligence Unit, **Analysis: Growth in British renewables cutting electricity prices by up to a quarter**, October 2025

[212] Nesta, **The energy price cap: the post-Iran crisis is pushing up bills, but clean power may be lowering them**, May 2026

[213] Ben James, **Gas – Electricity Linkage** (as of 09/06/2026)

In contrast, the UK's existing and expanding electricity network consists of over 1.7 million renewable generation sites.[214]

Clustered gas infrastructure positions present serious defence challenges and are not rapidly repairable in the event of attack. Pipelines are actively being scoped by highly capable undersea warfare and seabed sabotage divisions.[215]

Threats posed by reliance on gas for heating become more acute and potentially lethal if adversaries were to "weaponise winter" through assault on civilian infrastructure.[216]

The solution is to decentralise our energy system through strategic deployment of renewables, which have proven to be more resilient and repairable in conflict and sabotage scenarios than gas infrastructure.[217]

Heat pump adoption in the UK languishes at just 24 heat pumps for every 1,000 households. In Norway, there are 662 per 1,000 homes.[218]

People are more likely to believe disinformation if they distrust public institutions.[219]

[214] Department for Energy Security and Net Zero, **Regional renewable electricity in 2024**, September 2025
[215] RUSI, **Stalking the Seabed: How Russia Targets Critical Undersea Infrastructure**, May 2023
[216] Reuters, **Ukraine is showing why electrification is key to Europe's energy security**, February 2026
[217] University of Oxford, **Enabling and Ensuring a Net-Zero Aligned Carbon Market for Ukraine**, November 2025
[218] Chatham House, **Norway can teach the UK about energy security – but the lesson is not more North Sea drilling**, April 2026
[219] Ofcom, **https://www.ofcom.org.uk/media-use-and-attitudes/online-habits/online-nation**, December 2025

ABOUT E3G

E3G's mission: A safe climate for all

A safe climate for all underpins a future where humans and the natural environment can survive and thrive, where the most vulnerable are protected from climate impacts and economic systems prioritise people and the planet.

To achieve our mission, we build the policy solutions and political conditions for systemic action on climate. We:

- Work to win the politics and geopolitics of climate.
- Build the political conditions and policy solutions to drive the phase-out of coal, oil and gas from the global economy.
- Promote reforms to financial systems to secure the investment needed for mitigation and adaptation.

We are strategic thinkers

We combine deep strategic understanding with policy expertise. We analyse the political economy of climate and develop scenarios of how the future may evolve and what can be done to manage risks and exploit opportunities for action.

We are architects of climate action

We bring diverse stakeholders together to align action and foster dialogue. Through our collaborative approach we build connections and bridges, open windows of opportunity and create coalitions for change.

We are trusted brokers

We work closely with those driving climate politics forward, supporting them to tackle challenges behind the scenes. Governments rely on our knowledge of how to get things done in climate policymaking.

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