



The IfG response to the British Energy Security Strategy

Introduction

The government claims its new energy strategy, launched in a white paper on 7 April, will boost the UK's 'energy security'. Energy security is a relatively complex term and its definition depends on the context in which it is deployed. This paper uses the International Energy Agency's (IEA) definition of "the uninterrupted availability of energy sources at an affordable price". In the long term, this means planning energy supplies in line with predicted economic, environmental and technical developments; short-term energy security means enabling the energy system to maintain affordable and adequate supplies in the face of sudden changes in supply or demand.

It is possible to distinguish between three types of energy security:¹

- Physical security: avoiding involuntary interruptions of supply
- Price security: providing energy at reasonable prices to consumers
- Geopolitical security: ensuring the UK retains independence in its foreign policy through avoiding dependence on particular nations.

Russia's invasion of Ukraine has spurred deep concern about energy security across Europe. This is largely because many EU member states would face a very real threat to physical security of supply if oil and gas pipelines to Europe from Russia – increasingly sanctioned in other areas – were to be [completely cut off](#).

Although the UK might not directly face immediate threats to short-term *physical* supply, the increase in prices faced by the public was cited as one of the main motivations for government developing this strategy. In other words, the government was motivated by a short-term surge in energy bills to develop a plan to shore up the country's physical and geopolitical security. The danger of relying on the market to deliver security and affordability has been pointed out numerous times by experts, including the UK Energy Research Centre.² The timing of many of the policies also raises serious questions. Energy prices are hitting users hard now – the UK average energy bill went up by more than 50% on 1 April, just a week before the strategy's release – and by the business secretary's own admission, the strategy is "more of a medium three, four, five year answer".³

This short paper outlines the Institute for Government's response to the *British Energy Security Strategy*, and finds:

- **The strategy offered no new short-term measures to help increase supply, reduce demand or cushion the impact of high prices.** Perhaps the most acute risk to the UK's energy security – and one that motivated its rapid drafting – is the record prices that UK energy users face, and that will rise even further in the event of a disruption to Russian energy exports to Europe, even barring a total cut off. Even more moderate disruption could make energy unaffordable for many UK households and businesses, pushing families into poverty and forcing businesses to cease operations. The government chose not to use this opportunity to outline how it might address the immediate problem with energy bills, relying instead on measures already announced.
- **The strategy also falls short of setting out a compelling medium-term response.** The government has tied its own hands by largely ignoring or underplaying many of the quickest and most effective measures at its disposal: most notably reducing demand – through public information, behavioural or energy efficiency measures, at the forefront of many comparable nations' responses – and accelerating quicker-to-deploy energy sources like onshore wind. More than just limiting the ambition of the UK's short-term response, these choices mean the strategy will do little to enhance energy security this decade.
- **The strategy largely focuses on more longer-term energy choices.** A big expansion of UK nuclear capacity, investment in hydrogen, a further acceleration of offshore wind and solar, and further exploration of North Sea oil and gas are all central to the strategy. These measures show new thinking about the UK's long-term energy mix, and in particular a desire to reduce dependence on foreign energy sources. But there are big questions about whether the government can actually deliver them that the strategy does little to answer – nor does it say what would happen if it fails to deliver. And, less than six months since it hosted the COP26 UN climate summit, the government does not explain how it squares measures such as oil and gas expansion with its own climate targets and leadership aspirations, including its continuing COP presidency.

The strategy leaves important questions about how energy users will cope with high prices now unanswered

A notable omission from the strategy is how the government will expand efforts to improve energy security in the near term. Indeed, the strategy was motivated by a concern about how the Ukraine crisis could affect the UK's energy security and, as argued in a previous Institute for Government report,⁴ the government needs a comprehensive plan for this eventuality. Even if the UK can achieve physical security of supply in the face of reduced or even halted Russian exports to Europe, the rise in prices will severely affect the UK's energy security (under the IEA definition of *affordable prices*).⁵

The financial support announced previously for households in February and in the Spring Statement was insufficient to deal with this threat.

The UK's physical energy security is likely to hold up even without this strategy

The government is confident that the UK's physical gas supplies are secure, and would remain so even in the event of a cessation of Russian exports to Europe. According to a report commissioned by the business department, published in 2017, "diversity of supply [is] a primary contributor to this robustness", though the report also notes the uncertainty around what would actually transpire in the face of such an unprecedented shock to the European energy market.⁶ The UK produces approximately 40% of its gas supply domestically, imports another 40% from Norway, with the rest comprised of LNG imports (from Qatar and, increasingly, the US).

This is a view echoed in detailed analysis by the Oxford Institute for Energy Studies⁷ and by experts who testified to the Lords Economic Affairs Committee in March 2020, with one saying that "the UK is way better off than the EU in this moment" because it depends much more on Norway than it does on Russia.⁸

However, the UK would still be affected if Russian gas was (even partially) cut off to Europe. There would likely be a significant rise in prices on continental trading hubs; because the UK is connected to the EU via interconnectors, traders would move gas from the UK to the EU until the prices equalised.⁹

- This interconnector trade, however, would be unlikely to lead to physical supply problems in the UK because of the limited capacity of the UK–EU interconnectors.
- It is also unlikely that LNG would be redirected from the UK's terminals because the EU's terminals are already running close to their full capacity. (But additional LNG might be brought to UK terminals, then turned back into gas before it is re-exported to the EU.)
- Finally, it is unlikely that the UK's imports from Norway would be redirected to other EU countries by anything other than price signals and market forces. The limitations

here are that much of Norway's exports to the UK are thought to be under existing long-term contracts and, again, physical infrastructure (pipelines from Norway to other continental European countries are already running close to full capacity).

But more financial assistance will be needed to ease the pressure of price insecurity

Even if the *physical* security of the UK's gas supply holds up in the short term, the UK will face a threat to energy security from very high, ultimately unaffordable prices.¹⁰

Wholesale gas prices are already at an incredibly high level, having increased in the latter half of 2021 due to a supply/demand imbalance as many countries exited from pandemic-related lockdowns. They soared even higher as a result of Russia's invasion of Ukraine – though this has largely been related to uncertainty around the risk of a *potential* reduction in supply; there has been little change in supply (of pipeline gas) itself.

Two support packages have already been announced: one in February in reaction to the rise in Ofgem's price cap,¹¹ with further support announced in March in the chancellor's Spring Statement.¹² However, these have been criticised by economists¹³ for being poorly targeted (the cut to fuel duty, for example, will benefit higher-income families, who tend to use more fuel, most).

So if the energy trade is disrupted further in the short term, further exacerbating the cost of living crisis, the chancellor should offer further support and target it much more directly at the group of people likely to enter absolute poverty, either via an expansion to Universal Credit or other schemes such as the Warm Homes Discount. This must be announced by the time the next increase in Ofgem's price cap comes into force – in October 2020 – at the absolute latest.

For some of the UK's most energy-intensive industries (EIs), energy makes up a large proportion of input costs, making them most at risk of becoming unprofitable when energy prices rise. Natural gas is also an important raw material in many production processes, such as fertiliser, and is often impossible or at least difficult to substitute, at least quickly. As well as supporting households, governments will also need to explore whether there is any justification for government intervention in the corporate sector to mitigate the potential impact of high wholesale energy prices.*

And the government should have gone much further on measures to reduce demand

The type of price rises that we could see in the near term would lead to some automatic response, with consumers voluntarily reducing their energy usage, for example by lowering their thermostats. The extent to which gas usage responds to changes in price – known as its 'elasticity' – though, is very low relative to other commodities. This is because gas supplies the essential goods of power and heat to households, and they typically respond to price increases by cutting their demand for other goods and services, rather than reducing energy use. In the event of unprecedented price

* More detail on the policy options available to the chancellor can be found in [Living Without Russian Gas](#).

rises, however, we may see more of a demand response from households than has previously been observed, particularly from those who will be pushed into absolute poverty and may therefore not be able to afford normal levels of heat and power, even though they are essential.

Two pieces of context are needed here. The introduction of the energy price cap in 2019, which is reviewed twice a year, means there is a delay in how bills track wholesale prices. And the scale and duration of the current price spike is unprecedented: some poorer households have already started adjusting their behaviour in response to the April price cap rise. But the broad point remains that the government would be wrong to think that prices alone will be an effective way of changing behaviour.

There is likely to be more of an automatic response from businesses, particularly the EUs, who may well simply stop production. Businesses are not protected by the Ofgem price cap, so if prices remain high any lulls in operation risk becoming permanent.

Beyond relying just on high prices to incentivise demand reduction, the government could also have taken measures to reduce energy usage in the short term. The most effective way of doing this would have been public appeals to reduce energy usage, for example by turning down thermostats by 1–2 degrees or changing boiler flow settings (which are estimated to reduce gas demand immediately by as much as 10–15%).¹⁴ But the government has so far appeared reluctant to say much about reducing demand.

Former officials suggest ministers also have a wider fear of appearing too 'nannying', particularly following on from Covid restrictions (October's Net Zero Strategy also ducked any concrete suggestions for behaviour change). But the lack of willingness to consider rapid demand measures seems at odds with rising concerns about bills and dependence on energy imports in a market destabilised by war in Europe.

The government's strategy does hint at a change in thinking. It says it will develop a "comprehensive energy advice service" on GOV.UK by the summer, recognising that government is the most trusted source of information. But this is a low-key approach and it is unclear why it should take several months to update a webpage with standard advice that already exists on the internet. This too raises questions about ministers' willingness to front a serious communications campaign sufficient to shift the dial.

Energy experts have suggested that while industry can play a role – and some companies already are – active government leadership will be key.¹⁵ Alongside a communications campaign, the government could also strengthen regulation, for instance to prevent boiler manufacturers from recommending inefficient flow temperatures as standard.

Some measures that help to reduce demand through the winter of 2022 could also help keep bills down and reduce future supply requirements in the years ahead. For example, if the government had committed to a mass campaign to get people to change the settings on their boilers, it is unlikely households would change them back to make them less efficient (even if they might turn their thermostats back up).

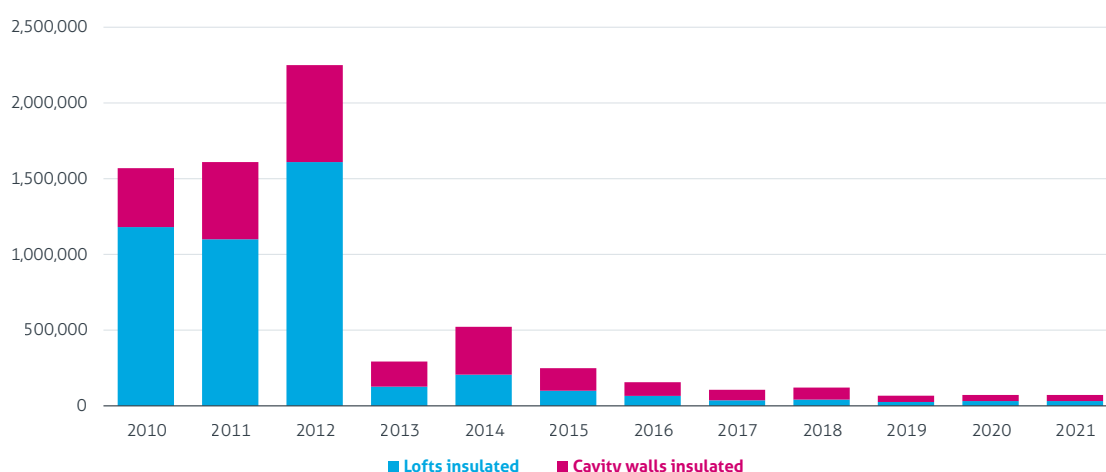
The strategy focused almost exclusively on the medium- to long-run

Beyond getting through the coming winter, the task the government faced was to set out how its thinking has changed on its three core energy policy objectives – security, affordability and sustainability (net zero) – in the wake of Russia’s invasion of Ukraine, and then set out credible policies to achieve its new vision. The international context was undeniably challenging. Global oil and gas prices are forecast to remain high in the medium term at least, and the UK is not alone in seeking out alternative energy policy options, putting pressure on those supply chains. But the result is nevertheless far from convincing.

The absence of demand measures undermines medium- to long-term goals too

In the medium term, one of the most effective options the government had – which could have made a real difference over the next two to five years – was investing in residential energy efficiency. The UK has among the draughtiest and least efficient housing stock in Europe.¹⁶ Successive governments have a record of failure on improving this: the 2020 Green Homes Grant followed on from the coalition’s 2012 Green Deal in being poorly designed and thought through, and suffering from low uptake.¹⁷ In both cases, the lack of long-term policy certainty and adequate market support prevented the development of supply chains – and indeed the impact of the Green Homes Grant debacle may have been to set the sector back. The UK is now paying the price for these failures.

Figure 1 UK home energy efficiency improvements



Source: IfG analysis of www.theccc.org.uk/publication/2021-progress-report-to-parliament

The government’s Heat and Buildings Strategy, published last October, set out how it hopes to incentivise a shift to heat pumps and better insulation over time, with a focus on bringing down technology costs in the near term. It contained £3.9 billion of funding including grants for replacing boilers, on top of money that had already been

committed.¹⁸ But even then this level of funding remains some £2bn short even of the £9.2bn promised in the government’s manifesto – and well below what many experts think is required to catalyse the market.¹⁹

While that strategy focused mostly on regulatory approaches, it fell well short of setting out a long-term plan for ramping up energy efficiency.²⁰ In response the Climate Change Committee (CCC) said “the lack of an integrated offer on home retrofit for the majority of households remains a real source of concern”.²¹ It contrasted the government’s approach with international best practice in Germany, where a decades-long programme backed by the national investment bank has achieved high levels of deployment, grown the market, reduced costs, and is a scheme which is largely self-funded.

The context in 2022 of spiralling energy prices and Russia’s invasion of Ukraine should have changed the government’s thinking on energy efficiency – but it does not appear to have done so. In the Spring Statement the Treasury reduced VAT on home energy efficiency improvements, but as very few households will be in a position to install, say, heat pumps over summer this move again does little to help households suffering hardship now. The government pays lip service to the importance of energy efficiency in its new strategy, recognising it as “the first step”, but proceeds to offer no new policies or funding.

Advance briefings suggested the Treasury has rejected efforts from the business department and No.10 to secure an additional £200 million per year to pay for energy efficiency measures in poor households, through the Energy Company Obligation (ECO).²² But even this amount would have fallen short of making up the funding promised in the manifesto, and is a long way short of what other countries have brought forward.

Further ambition on renewables is welcome – but the lack of support for onshore wind is a missed opportunity

The government has redoubled its focus on renewables, with an increased ambition to have 95% of electricity from low-carbon sources by 2030.

Analysis suggests that such a focus on renewables over the medium-term is sensible. An assessment by the Institute for Global Change scored a full range of options available to the government on factors including their ability to improve energy security and cut bills, their investment costs and the political risk attached to them.²³ Renewables, it said, offered the “biggest, quickest and cheapest” options.

The options that could make a difference most quickly, within one or two years, are onshore wind and solar. An assessment by Carbon Brief found that there is 5.8GW* of onshore wind capacity (239 projects) and 4.8GW of solar capacity (410 projects) that have been granted planning permission but have not yet been built because of a lack of government support to bring them to market, particularly their exclusion from Contracts for Difference auctions (CfDs, which support the market by offering more

* Modelling electricity demand is complex but as a rough guide it is estimated that it takes 40GW to power each home in the UK now, and the amount of electricity the UK as a whole requires could more than double between now and 2050, due to the electrification of things currently reliant on fossil fuels, such as transport and heating.

price certainty) up until very recently.²⁴ If these alone were built, they would provide an amount of electricity roughly equivalent to the UK's Russian imports.²⁵

Onshore wind deployment stalled in the UK following the Conservative government's decision in 2015 to reform planning rules, amounting to a near-effective ban, and withdraw subsidies. In the intervening years costs have fallen significantly, such that projects that have been approved that are subsidy-free, such as Crossdykes in Scotland. But the planning system has remained a major blocker.

The Johnson government liberalised rules a bit, contributing to the number of projects now awaiting construction. But experts suggest further reform to planning rules and wider support is needed if the UK is to seriously ramp up onshore wind. The Net Zero Strategy also exhibited some reticence on the topic, with onshore wind not featuring prominently and the government only committing to procuring up to 5GW.

Leaked documents in recent weeks showed the government was considering much more ambitious reforms to support some 45GW of onshore wind by 2035.²⁶ But such plans have been nixed in the final strategy, seemingly due to opposition from cabinet members and backbenchers. That is despite onshore wind being cheap and broadly popular – including in rural areas and even among people who live near to turbines.²⁷ Politicians have consistently overestimated public opposition to it.²⁸

On solar, the strategy is more ambitious – suggesting the UK's current 14GW of capacity could increase five times by 2035. It commits to including solar in future CfD rounds (and the government recently removed VAT on residential solar panels). If backed up, this could start to make a difference relatively quickly. The commitment to offer further support for heat pumps will also provide a welcome boost for those trying to scale up installations.

The strategy also focuses on offshore wind, upping the ambition from 40GW to 50GW by 2030, including 5GW from floating offshore. This is an area of UK strength – the UK is second only to China in installed capacity, following over a decade of sustained market and price support and industrial policy.²⁹ It makes sense to increase ambition, but meeting these targets will be hard. The government was already off track for the annual deployment rate of 3GW/year required for the previous target.³⁰ Catching up even with this is now likely to be much more difficult given the coming supply chain crunch, as many countries announce big moves into wind power.

The government set out a package of measures designed to radically cut the time it will take to approve projects, including planning policy reform, reduced consent time, and reviewing wider regulations. Taken together, these could be transformative in the UK achieving a very ambitious goal. But the government will need to keep a sharp focus on delivery, including making sure the UK has the skilled workforce and supply chains that will be required.

Beyond measures focused on specific technologies, the government announced a major governance reform, creating a new Future System Operator to “look at Great Britain's energy system as a whole”, founded on existing capabilities of the Electricity

System Operator and National Grid Gas.³¹ This is a welcome move. There has been a fairly broad consensus that the institutional set-up in the energy sector was not fit for purpose to oversee the transition, with no organisation having the capability or incentives to oversee transformation³² – though the exact design of the new body is yet to be determined.

Questions remain about how the bold nuclear ambition can be met – and at what cost

The most substantive shift in the strategy is the decision to support a major role for nuclear as part of the UK energy mix. The government says it aims for nuclear to provide up to 24GW of electricity by 2050, meeting around a quarter of demand. It aims to do this through a mix of new traditional large-scale power stations and small modular reactors (SMRs). It will set up a new development vehicle, Great British Nuclear, to bring forward new projects – and promises “the equivalent of one nuclear reactor a year instead of one a decade”.

There are extensive debates about the role nuclear should or shouldn't play in the energy system – though there is a strong case that some continued role for nuclear could be important for ensuring the UK's energy resilience. But the government's announcement raises big questions about whether and how it can be delivered, at what cost – and what it will do if delivery falls short of aspiration.

The UK has a long record of nuclear ambition – both the New Labour and coalition governments similarly wanted to expand nuclear supply significantly. But these ambitions have often amounted to little, with governments proving unable to secure capable suppliers willing to build plants at an acceptable cost – a task that is likely to remain very difficult, particularly with the UK ruling out Chinese suppliers on national security grounds, and with other countries also looking to expand their nuclear supply.

The UK has one plant in construction (Hinkley Point C in Somerset) and another in advanced negotiations (Sizewell C in Suffolk). The history of these projects shows how difficult meeting the new target will be. Both have been subject to repeated delays and cost overruns. There has also been consternation about the government having to tie consumers into a high guaranteed strike price. It may be that the government thinks it can reduce these risks and bring costs down by making a larger, long-term commitment to nuclear. The risk attached to SMRs will be smaller.

But ministers will need to be transparent in setting out the analysis that supports their decisions – what it will cost taxpayers, what other options were considered, and why this level of nuclear will be most beneficial. On Hinkley, the government failed to publish such detailed analysis, and its value-for-money assessment was weak.³³ An Institute for Government report on infrastructure decision making, which examined Hinkley, concluded that “government could be more sceptical of investment in major new *grands projects* – particularly where the returns, often based on long-term forecasting, are highly speculative”.³⁴ While the exact role of Great British Nuclear remains unclear, hopefully it can play a part in strengthening expertise and improving the way government pursues its objectives.

There are also questions about how quickly the government can develop and sign off plans, and whether it can win broad support for them. It says it will “initiate the selection process in 2023” with the intention of entering negotiations that enable an award of support “as soon as possible” after that. Notably it does not commit to signing off any projects this parliament, and it cannot tie the hands of future governments.

The UK must retain strong relations with international partners

Co-operation with the EU is essential – but shouldn’t be taken for granted

When the UK was an EU member state it was bound by the 2017 EU Security of Supply Regulation, which aims to ensure a regionally co-ordinated approach to the preparation and management of gas shortages in a crisis. That legislation was implemented following gas crises in Europe in 2006 and 2009, both also caused by tensions between Russia and Ukraine. After Brexit and the implementation of the Trade and Cooperation Agreement, the UK is no longer bound by the 2017 regulation.

However, given how closely integrated the UK and European gas markets are, in a crisis, there would be benefits to both the UK and EU from co-operation. Thankfully, the strategy has recognised that, even if the UK would not face physical shortages in the event of a disruption to Russian supplies, it will play a crucial role in supplying the European market with gas. As noted above, the UK’s LNG terminals would play a key role in helping LNG reach the EU. The UK has also committed to making sure the infrastructure to do this works as efficiently as possible.

Dependence flows the other way too and it will be of utmost importance for the UK and EU to work closely together and allow the market to continue functioning normally in the event of a supply shortfall in Europe. In particular, the UK has little inter-season gas storage of its own and instead relies on European gas storage in order to manage domestic fluctuations in supply and demand. The UK may also benefit from joint procurement of LNG supplies with European neighbours. To the extent that European countries are forced to pay above the pre-existing market price for LNG in the event of a supply shortfall, unilateral procurement could lead to a bidding war that would drive prices up even further for everyone. The UK would also more generally benefit from the negotiating and buying power of the bloc.³⁵

However, while the economics of co-operation may be compelling, the politics could get in the way. The government made much of the benefits of staying out of the EU’s collective vaccine procurement efforts, and tensions are still running high over the Northern Ireland protocol, which is overshadowing other areas of potential economic co-operation or dialogue. Co-operation cannot be taken for granted.

The strategy risks undermining the UK's climate leadership

The current crisis presented an opportunity for the government to accelerate progress on areas that would improve security and affordability while also reducing emissions. It largely failed to take it. Instead, the strategy commits the government to a new licensing round for new North Sea oil and gas projects.

The government supports this by saying that these fuels will play a key role in the energy transition and that gas produced and used in the UK has a lower carbon footprint than gas produced abroad. It also announced a further review on fracking following the moratorium announced in 2019 (though many have interpreted this as a delaying tactic rather than signalling any shift in policy).

However, the strategy fails to answer questions about how these new commitments are consistent with the UK's climate targets. The prime minister has previously said that the war in Ukraine meant the West should be given a "climate change pass"³⁶ to be able to prioritise security and affordability as Europe weans itself off Russian oil and gas. It was unclear exactly what he meant by this, but he implied this would only be a short-term measure, rather than affecting the UK's long-term targets or ambition.

The impact that new UK licenses would have on global emissions is hard to judge – indeed the CCC said it was unable to calculate the net impact.³⁷ While UK extraction may have a relatively low carbon footprint (particularly for gas), extra gas and oil would support a larger global market overall. The CCC concluded the evidence was not clear cut (as it is for coal), but said it would support stringent tests and a presumption against exploration.

The UK government will need to provide evidence to back up its claim that it is better from a climate perspective if new oil and gas drilling happens here. A key problem is that so far it has failed to publish details of the emissions trajectories that underlie its Net Zero Strategy – which more widely undermines credibility and the potential for external scrutiny. There have also been questions raised about the knock-on effects of encouraging investors to support UK oil and gas exploration, which could take funding away from renewables or carbon capture.

However, the bigger point is that even if the government can stand up a technical argument for new oil and gas licences, it would not necessarily be wise to do so. It is just five months since COP26 – the UK remains COP president and will be seeking to demonstrate climate leadership around the world. Issuing new licences in the coming years is likely to mean drilling will take place in the UK well past 2050. Experts have suggested that to be consistent with its climate policies the UK would need to persuade other countries to reduce their fossil production.³⁸ As part of its role building on ambitions agreed at COP26, it will be trying to do this anyway. But it would be in a stronger position if it was not forced to make the argument to justify its own drilling.

More broadly it will need to persuade countries that the current energy crisis should not be a reason for losing sight of the urgent need to reduce emissions. It is not clear that the long-term benefits of further North Sea oil and gas exploration are worth the immediate risk it poses to what remains the UK's top foreign policy priority.

Conclusion

Producing the energy security strategy appeared a somewhat tortured process. It was delayed four times, with regular briefings of fights between the business department, the Treasury and No.10 over policies and funding. The final result seems to reflect a government struggling to co-ordinate itself effectively, let alone a UK-wide plan of action to bolster the country's energy security.

The strategy does little to address questions of security and affordability in the short-to medium-term, ignoring the best options the government had including measures to reduce demand, boost energy efficiency and accelerate onshore wind. It also fails to set out a clear approach for how it would deal with some of the worst-case energy security questions raised by Russia's ongoing war in Ukraine (for many the most pressing concern). The government will likely be under pressure to revisit its policies on affordability in the autumn, when a further price cap rise is planned. In the meantime many households will face real difficulty.

Rather than producing an energy security strategy that addresses current problems, the government has, hastily, produced a long-term energy *supply* strategy. The risk is that in rushing to look on top of current crisis, the government has tied itself into long-term choices it hasn't thought through.

Olly Bartrum is a senior economist at the Institute for Government

Tom Sasse is an associate director leading the Institute's work on Net Zero

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 enquiries@instituteforgovernment.org.uk

 +44 (0) 20 7747 0400  +44 (0) 20 7766 0700

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**Institute for Government, 2 Carlton Gardens
London SW1Y 5AA, United Kingdom**

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