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Review of Energy Policy 2022

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Introduction

Rob Gross, UKERC Director

In this issue of our annual Review of Energy Policy we look back at events of 2022 and discuss the causes and impacts of the energy crisis, and the response of the UK government to date.

there has been a global scramble for gas

We began the year with high energy prices, after wholesale gas prices increased by an unprecedented 500% during the autumn of 2021. The initial impacts on domestic consumers were blunted by the Ofgem administered price cap, instead causing a wave of energy suppliers to go bankrupt. Fossil fuel prices were actually *falling* in January 2022 – and the price hikes were expected by many to be quite short-lived – until 24th February 2022 when Russia invaded Ukraine.

Since then, there has been a global scramble for gas, and record high prices, particularly in Europe. Europe's integrated networks for gas have ensured that liquified gas shipments arriving in Britain helped to fill storage sites elsewhere in Europe. Indeed, this summer saw unprecedented flows through the GB pipelines into western Europe. Britain also exported electricity in the summer because several French nuclear power stations were offline. With EU gas storage largely full many believe that the worst risks to security of supply have been avoided, at least for this winter. UKERC has been advocating close collaboration with Norway and the EU to secure our mutual security of supply. With little domestic gas storage, the UK may well need to access some of the storage we helped to fill. It will be essential that interconnectors for both gas and power flow as needed during the winter. In this issue we have two articles devoted to energy security issues: one considers gas and electricity markets, the other how the crisis is changing our relationship with the EU.

The year has also been marked by political turmoil at home, with no less than three Prime Ministers. Alongside this political instability and in response to cost-of-living pressures we are now facing a wave of industrial action not seen since the 1980s. The impact of energy-prices on the wider macro-economy has also come to a prominence not seen for decades, with the Energy Price Guarantee introduced in October estimated to take around two percentage points off headline measures of retail inflation. Policy responses to the energy crisis have grown from initially limited financial support, to the unprecedented subsidies needed to finance the Energy Price Guarantee.

UKERC has repeatedly called for greater attention to energy efficiency and demand reduction. But it is only as Christmas approaches that the Government has announced an information campaign to help householders save energy. Unfortunately, the opportunity to use the summer months to help households adopt the most straightforward home energy improvements has been largely wasted. It seems strange that action on energy demand appears to have been held back by concerns about the 'nanny state' whilst government makes unprecedented interventions to subsidise energy prices.

In April, UKERC published a proposal to extend the Contracts for Difference (CfD) scheme to older renewable and nuclear generators. Our analysis demonstrated that this has the potential to reduce electricity bills by some

£20bn, helping to break the link between gas and electricity prices. The idea featured in the former Prime Minister's proposals on energy, and is being prepared as an option for next winter. For now government favours a windfall levy on electricity generation. This will help raise revenue to offset the fiscal impact of the Energy Price Guarantee, but unlike the CfD proposal it will not directly reduce power prices.

In this issue we also discuss industry and road transport. The former has been hard-hit by high prices. The Energy Bill Relief scheme will bring short-term assistance, but targeted help will still be needed next year. UKERC analysis shows how sustained high prices in the longer-term could delay decarbonisation plans, in part because industrial decarbonisation scenarios rely heavily on continued use of gas with CCS to produce blue hydrogen or directly decarbonise some processes. As with other sectors, the crisis may focus attention on moving away from fossil fuels as well as reducing emissions. Road transport has also faced rising prices, though the price of crude oil has not been through the multiples of increase seen for gas and power. It is too early to say whether the higher relative price of electricity is discouraging electric vehicle purchase. However, the case to retain strong incentives for EV purchase remains strong, as does the need for road transport demand reduction.

The coming year shows few signs of being less challenging. Indeed, many commentators are even more concerned about European gas availability during the winter of 2023/24. UKERC will continue to provide expert insight and commentary based on robust evidence in these uncertain times.

Affordability of Energy for Households in Britain

Janette Webb, University of Edinburgh

The invasion of Ukraine and volatile global gas prices are triggering an affordability crisis. Despite major public subsidies, National Energy Action estimates that 6.7 million UK households are facing fuel poverty, compared with 4.5 million in 2021, rising to roughly 8 million from April 2023. With instability in UK Government, policy responses have varied and remain under-developed.

Managing energy retail prices?

Since 2019, domestic energy prices have been subject to a Price Cap managed by Ofgem. The aim was to ensure that households staying with the same energy retailer were not overcharged. In October 2021 the Cap increased 12%; in October 2022 it increased 80%. It now sets an average annual dual fuel bill at £4279 from January 2023, effectively becoming the retail price of energy, and raising questions about the economic hypothesis of the efficient market.

In April, measures to support households were announced,[1] with the Energy Bills Support Scheme paying a £400 grant, in six instalments, to every household with an electricity meter. Further support was targeted on lowest income groups, notably households receiving means-tested benefits.

UK Government then intervened in September, with an Energy Price Guarantee setting prices at a notional 'average' of £2500 annually; retail suppliers receive the remaining cost from public funds. Despite subsidy, prices are now almost double the winter 2021 Cap, with gas increasing by 141%, and electricity by 65%,[2] leaving many in financial difficulty. Many energy retailers have also collapsed, adding a further estimated £9.2 billion (£326 per customer) to energy bills.[3]

UK Government face serious challenges over energy supply and prices. The British Energy Security Strategy included plans to improve the UK's energy independence, mainly through expanding renewable and nuclear energy. However, developing new sources of supply will take years and cannot provide short-term help to struggling households. In broad terms, two short-term policy strategies are available: one is to subsidise bills, while the other is to focus on reducing energy use. These can be used separately or in combination, and contain multiple policy options, from working to reduce prices by increasing supply at one end of the spectrum, to a comprehensive, publicly funded energy efficiency programme at the other.

1. BEIS. 2022. Access here. 2. House of Commons Library. 2022. Access here. 3. BEIS Committee. 2022. Access here. 4. House of Commons Library. 2022. Access here. 5. Webb and Horst. 2021. Access here.

The UK Government focus has been on subsidising consumer prices, with little attention to policies for reducing energy use. The current approach is not targeted to the most vulnerable, creates a large fiscal burden and does nothing to reduce demand. The challenges this approach creates are clear. The price guarantee introduced in September 2022 was set to remain until September 2024. A month later, a new Prime Minister announced that the guarantee would last for only six months. The Autumn Statement then set the guarantee at an average £3000 from April 2023, reducing the subsidy. There is only partial clarity about how this, albeit lower, cost will be met. The final cost of subsidies will also depend on total energy used and wholesale market prices.

There are calls for more targeted financial support for the increasing numbers in poverty. As welfare benefits have been progressively eroded through fiscal austerity policies, the UK government has implicitly relied on charities to meet needs. Provisions from third sector organisations now include warm banks as well as food banks, but these are uneven, and at risk of collapse due to rising bills and declining donations.[4] In addition, vulnerable households can face compound difficulties as energy suppliers shift indebted customers to pre-payment meters, sometimes without informed choice.

What is missing?

Energy efficiency policies, including information campaigns, have been the critical gap. This has been true for a decade, but is particularly surprising now, given that high prices make pay back from energy efficiency investments even easier to realise. Over the last decade, higher building standards have been postponed, and public funding for advice and housing retrofit in England has been cut radically, alongside the energy company obligation (ECO) scheme.[5] Energy efficiency improvements stalled;[6] all these policy failings have worsened the affordability crisis.

cold housing costs the NHS ~£2.5 billion

Unlike comparable European governments, UK government resisted any systematic public campaign to inform households about saving energy this winter. This is surprising as there is strong international evidence that information campaigns are highly effective as part of a portfolio of policies.[7] Savings accrue not just to households, but to UK Treasury by reducing the total cost of the price guarantee and supporting health and welfare. Estimated annual costs to the NHS of illnesses resulting from cold, damp housing are around £2.5 billion.[8]

An online energy advice service[9] has now been introduced alongside Help for Households information,[10] but these remain less comprehensive than 2012 advice services in England. A more comprehensive public awareness campaign is now finally in development. The Autumn Statement also announced a target to reduce energy consumption by 15% by 2030, but policies are undefined beyond reference to establishing a Task Force.

6. CCC. 2022. Access here. 7. Bender et al. 2002. Access here. 8. Marmot et al. 2022. Access here.
9. UK Government. 2022. Access here. 10. UK Government. 2022. Access here.

Public funding for energy efficiency in English housing also remains small, with most support directed to low-income households via the Green Homes Grant.[11] Much reduced ECO funding (paid via customer bills) is also targeted on fuel poor. The Autumn Statement promised £6bn of new funding from 2025 to 2028, but this post-dates the 2024 UK election and is correspondingly uncertain. A further £1bn of funding from 2023 has now been announced under the ECO+ scheme.

A more comprehensive, area-based, programme has continued in Scotland, including the Home Energy Scotland advice service, offering grants and zero-interest loans to house owners. There is also an overarching Scottish programme jointly coordinated by a new Heat & Energy Efficiency Scotland agency and local authorities.[12] With £1.8 billion committed during the current Scottish parliament (2021-26), targets include converting one million houses to zero emission heating by 2030.[13] The principal rationale is that energy efficiency brings many benefits. It supports not just affordability and welfare, but also GB debt reduction, energy security and climate protection, as well as providing skilled work in construction and renovation.

In the immediate term, energy efficiency measures such as installing draught-proofing and insulation are all low cost, and pay back quickly. In the medium term, retrofit measures need to be less incremental and more transformative through an effective Heat and Buildings Strategy, fit for decarbonising the whole building stock in the next twenty years.

In conclusion

The UK is unique in Europe in that its response to the energy crisis has focused almost entirely on supply-side measures and subsidies. New sources of supply cannot be developed in the very short-term and market-wide subsidies create new fiscal challenges. An essential policy which UK government can act on now with no regrets is energy conservation through unified, independent advice and services to households. Failure to act on demand-side measures harms health and welfare, with further stresses on public services and long-term damage to the life chances of children.[14] Subsidies without demand side policies contribute to lock-in to fossil fuels. Instead, subsidies need to support investment in energy saving, while ensuring that the poorest households have access to affordable energy.

11. BEIS. 2021. Access here. 12. Scottish Government. 2022. Access here. 13. Scottish Government. 2022. Access here. 14. Anjana Ahuja. 2022. Access here.

Crisis – Which Crisis? Building Gas Security and Electricity Market Resilience

Mike Bradshaw* and Keith Bell**
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In the current 'polycrisis' the UK seems to have more crises than most. On top of extreme problems in the global energy market and associated cost of living crisis, and in the context of increasingly visible climate distress, the UK has had three Prime Ministers in less than six months, along with three Secretaries of State for Business, Energy and Industrial Strategy (BEIS). Thus, when trying to review the status of energy policy, the first question is: whose energy policy?

Since last year's UKERC Annual Review, the government and policy advisors have confronted two uncomfortable truths about the UK's energy security: first, that we have privatised, marketized and globalised our gas security; and second, that the gas price – now as it has done for many years – determines what customers pay for their electricity.

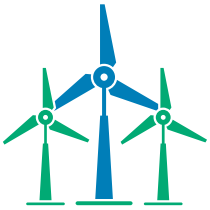
For years the *Statutory security [15] of supply report* has noted the sufficiency of our infrastructure to deliver the gas we need and that we enjoy a diversity of sources of supply; however, it also noted a reliance on 'market forces' to deliver gas at prices that are affordable. Recent events show that actors in the British wholesale market rely on short-term spot purchases, and that we lack sufficient storage to provide resilience in the winter months. So, how have the various UK Governments sought to improve UK gas and electricity resilience since Russia invaded Ukraine in late February?

Responding to the crisis

The initial response was to suggest that as the UK only gets 4% of its gas from Russia we would not be impacted.[16] However, our trust in market forces means that our prices are determined by the European gas market and the price of Liquefied Natural Gas (LNG) on global markets. Thus, the UK proved to be far from immune to the record high prices of summer 2022. The Johnson Government decided that as this was a supply-side problem, what was needed was more 'British Energy,' including more oil and gas from the North Sea and a review of the shale gas moratorium. Few of the policies in the *British Energy Security Strategy [17]* addressed the near-term challenge of securing affordable sources of energy or reducing the amount of energy we use.

gas prices are determined by global markets

15. BEIS 2021. Access here. 16. House of Commons Library. 2022. Access here. 17. BEIS & PM's Office 2022. Access here.



increased renewables will minimise our dependence on gas

Over the summer as energy prices soared, we waited to see who would lead the next Government. Significantly, Prime Minster Truss' first debate in Parliament dealt with energy. Without reference to 'the science' that was supposed to inform the decision, the moratorium on shale gas was lifted. But by requiring local consent, the shale industry now needed a 'social licence,' something that it had no hope of gaining. However, that didn't matter, as one of the first actions of Prime Minister Rishi Sunak was to reimpose the moratorium.

Behind the scenes, an agreement was reached with Centrica Storage to re-open their Rough Storage facility, but it will only operate at 20 per cent capacity this winter, increasing the UK's gas storage capacity by 50 per cent. It now seems that rather than relying on market forces, we are turning to 'energy diplomacy' as the Government seeks gas supply agreements with the likes of the US and Qatar. At the same time, relations with the EU are improving, having helped Europe fill its gas storage for the coming winter, largely via imports of LNG to the UK. The good news is the EU storage is over 90 per cent full, the bad news is that we will have to pay market prices to ensure that gas returns when we need it.

National Grid's Winter Outlooks[18] for gas and electricity suggest that a failure to access gas from European storage could result in rolling electricity blackouts. The likelihood is low – it depends on a combination of factors including the loss of EU imports coinciding with a cold day, along with a single technical problem on Britain's gas system leading to the gas system operator cutting supplies to some gas-fired power systems. This would leave the electricity system with a problem. However, National Grid's admission of the possibility might finally be concentrating minds on the need to reduce demand for energy.

Predictably, the supply side approach has failed to make a difference, which is why it is baffling that the Government has taken so long to get behind a public information programme to help save energy and reduce bills (see section on affordability). The EU has determined to reduce gas demand this winter by 15 percent and peak electricity demand by 5 per cent, with many member states going further. The UK Government has said that it does not want to tell people what to do and is happy to rely on civil society and business to drive campaigns to reduce demand. But in the current situation, every bit helps. As the Climate Change Committee has shown in a recent letter to the Chancellor[19], much can be done with quite simple and cheap measures, provided people know how.

Medium to long term impacts

Over the medium to long term, increased renewable electricity generation capacity will minimise our dependency on imports of gas. However, passing on the low cost of production of energy from wind and solar to consumers requires market reform - reducing wholesale price sensitivity to the cost of the marginal unit on the system. [20]Reduced use of gas also depends on our ability to make full use of wind and solar power when it is available. This means having enough network capacity, being able to maintain system stability without the need to run gas-fired plant, and an ability to store energy at times of surplus for days when there is a deficit.[21]

18. National Grid, 2022. Access here. 19. CCC, 2022. Access here. 20. Blyth et al. Access here.
21. Gross et al. Access here.

The Government's goal is for the remaining greenhouse gas (GHG) emissions resulting from electricity production to be reduced to zero by 2035 and then to grow the electricity system as we electrify increasing amounts of our end use of energy. A transition of this kind is necessary as part of our obligation to reduce emissions across the whole economy. However, it is not without resilience hazards. The infrastructure we build must be well adapted to future weather conditions. And, to meet demand on cold, dark, still days we need access to low carbon sources of electricity in addition to whatever nuclear, hydro and energy storage capacity is already planned. That currently represents a big gap, in respect both of infrastructure plans and the market arrangements to incentivise it to be built.

In conclusion

If the current crisis does accelerate the pace of the energy transition, we need to plan for the phasing down of gas consumption while retaining the supporting infrastructure for as long as gas is needed. In previous reviews we have called for 'gas by design'; the current crisis makes this more important than ever.

Impacts of the Energy Crisis on Business and Industry

Peter Taylor, Ahmed Gailani & Imogen Rattle, University of Leeds

While much of the discussion around the impacts of the energy crisis have focused on households, business and industry have also been hit hard.

Over the year to June 2022, average non-domestic electricity prices increased by 45% to 18.64 p/kWh.[22] The increase in gas prices over the same period was even greater, at an average of 98%, taking gas prices to 4.76 p/kWh. While the price increases for electricity consumers did not vary much by size of consumer, this was not true for gas. The largest gas consumers saw the biggest price hikes, with very large users experiencing a 170% price increase over 12 months (Table 1). Large consumers are also more sensitive to rises in the wholesale price of gas as it forms a bigger share of their total costs.

Table 1 Non-domestic electricity and gas prices in Quarter 2, 2022

Consumer band	Electricity consumption (MWh)	Gas consumption (MWh)	Electricity price (p/kWh) excl. CCL	% change electricity in price on previous year	Gas price (p/kWh) excl. CCL	% change in gas price on previous year
Average			18.64	45	4.76	98
Very small	0 - 20	0 - 278	21.78	27	7.3	60
Small	20 - 499	278 - 2,777	20.31	44	4.38	86
Small/medium	500 - 1,999	-	21.76	57	-	-
Medium	2,000 - 19,999	2,778 - 27,777	17.74	48	4.09	91
Large	20,000 - 69,999	27,778 - 277,777	16.61	46	4.21	138
Very large	70,000 - 150,000	277,778 - 1,111,112	17.52	55	4.83	170
Extra large	> 150,000		17.06	48	-	-

Source: BEIS, 2022a.

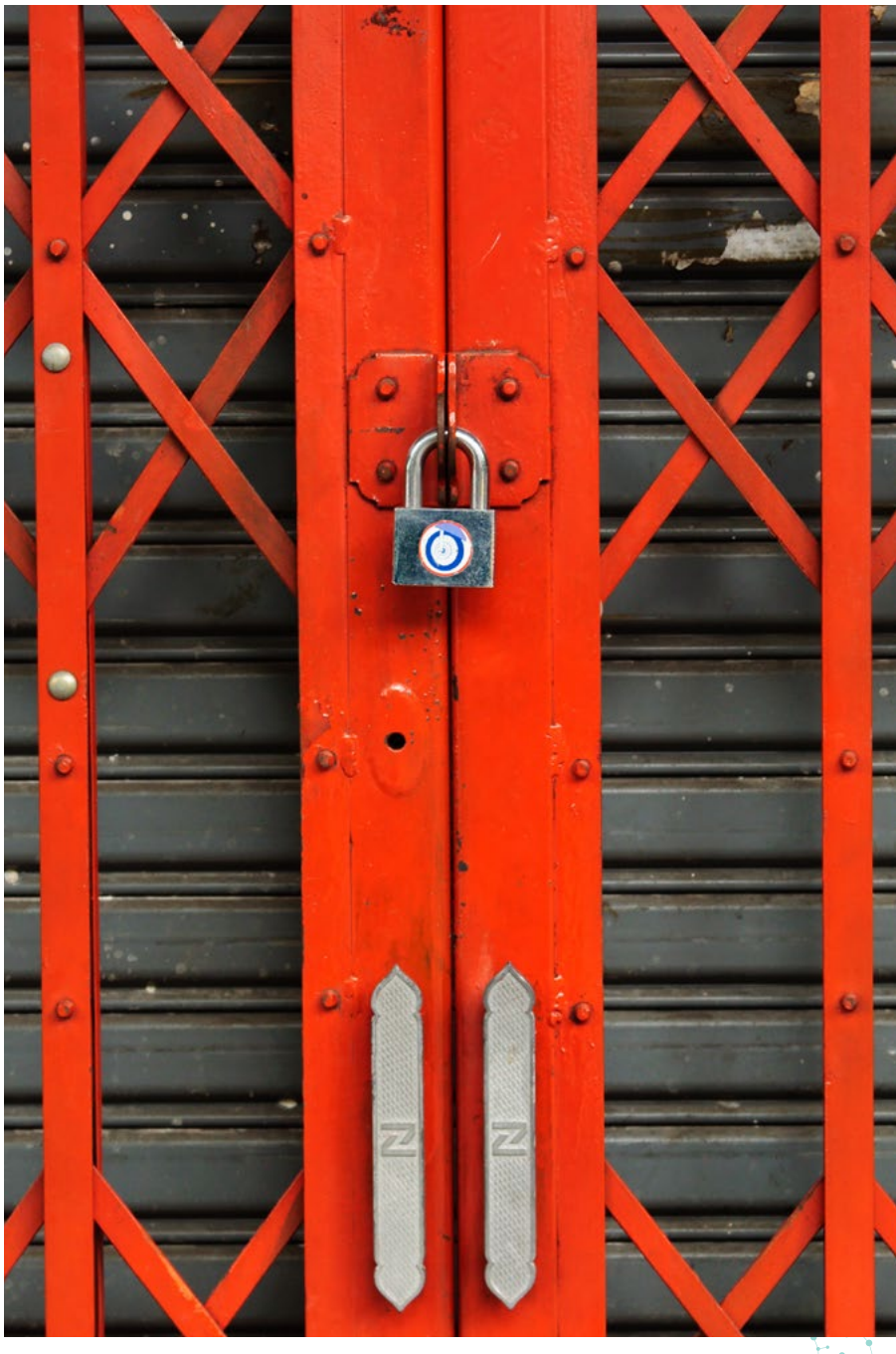
22. BEIS, 2022. Access here.

However, energy prices are not the only change; uncertainty around prices has increased the risk to energy suppliers. As a result, many are having to apply additional requirements to their business energy contracts that are more strenuous. These include enhanced credit checks, parent company guarantees, greater scrutiny of cash flows, high security deposits, lower tolerances on take or pay contracts, and contracts often lasting no more than a year. Some suppliers are also limiting the number of smaller business consumers that they contract with, showing a greater reluctance to quote for companies in sectors considered high risk, or only offering "deemed" tariff rates.

The impacts are being felt and could get worse

The impact of energy price rises on businesses already appears to be having an effect. Company insolvencies in England and Wales in April - June 2022 reached their highest level since September 2009. During the same period, 22% of businesses said energy prices were their main concern, an increase from 15% in late February 2022.[23] A survey by Make UK, a manufacturing industry trade association, found that almost six in 10 companies said high energy costs were threatening their business. As a consequence, 13% of companies had reduced their hours of operation, or avoided production at peak hours and 12% had already made job cuts.[24] Small companies in the accommodation and food, wholesale and retail, and manufacturing sectors appear most affected as they report higher levels of extreme concern compared to all small businesses.

There have also been warnings from industry about security of supply over the coming winter. The Energy Intensive Users Group has highlighted that the gas supply margin may be tighter than estimated in National Grid's Gas Winter Outlook and warned that existing industrial demand-side response proposals from Ofgem and National Grid may not deliver the volumes.[25]



23. ONS, 2022. Access here. 24. Make UK, 2022. Access here. 25. IEUG, 2022. Access here.

Government is responding, but is it enough?

In response, the Government has introduced the Energy Bill Relief Scheme,[26] which is available to all organisations on a non-domestic tariff that meet certain eligibility criteria regarding their type of contract and its start date. This will cap the price to businesses of wholesale electricity and gas at £211 and £75 per MWh respectively. The government expects that for many businesses, this will reduce total energy bills by between 20 and 40%. The scheme will run from 1 October 2022 to 31 March 2023, with a review currently underway to ensure that any support from April 2023 targets those businesses most in need of help. Just over half of business reported that this support should be enough for the short term, but are still concerned about what will happen after the current arrangements end.[27]

Long-term impacts on decarbonisation and competitiveness

If energy prices do not fall in the longer term, as well as the obvious impacts on business viability, it may have implications for the future decarbonisation of industry. To explore this in detail UKERC re-ran the balanced pathway to net zero by the Climate Change Committee assuming that the energy prices seen earlier this year would continue to 2050.[28] Under this "high energy cost" scenario, total cumulative industrial emissions would be 155 $MtCO_2e$ higher over the period 2020-2050 than for the original balanced pathway (Figure 1). Other impacts included investment in meaningful decarbonisation of industry is delayed by at least five years compared to the original scenario, and higher electricity and natural gas use at the expense of hydrogen.

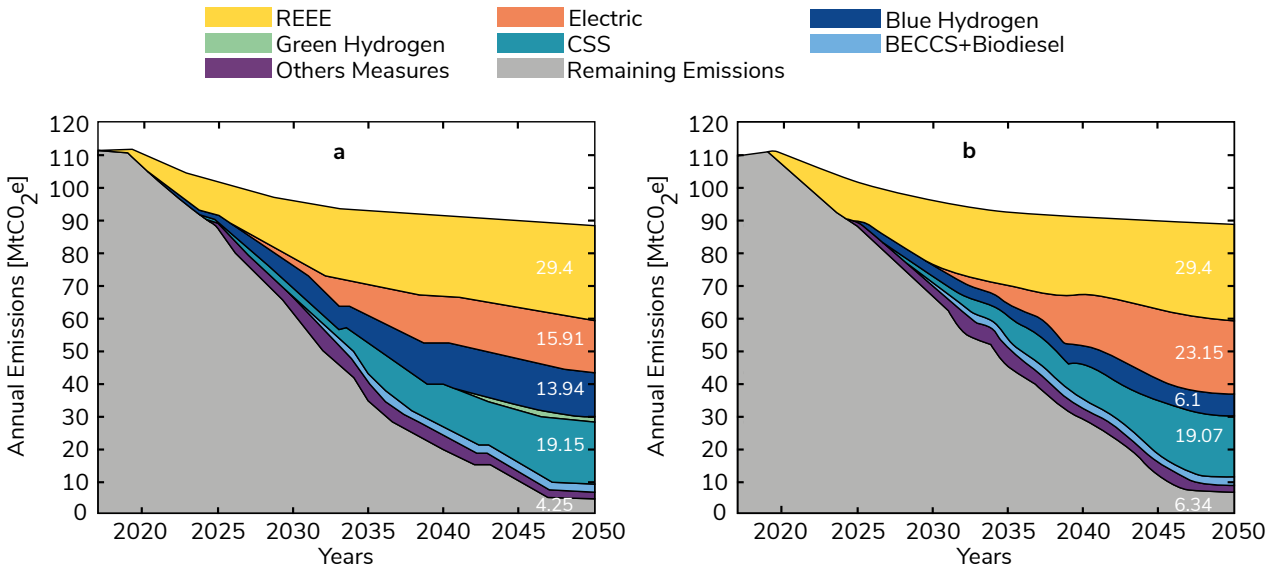


Figure 1 Emission abatement by technology (a) default scenario, (b) high energy cost scenario
Source: Gailani et al. 2022

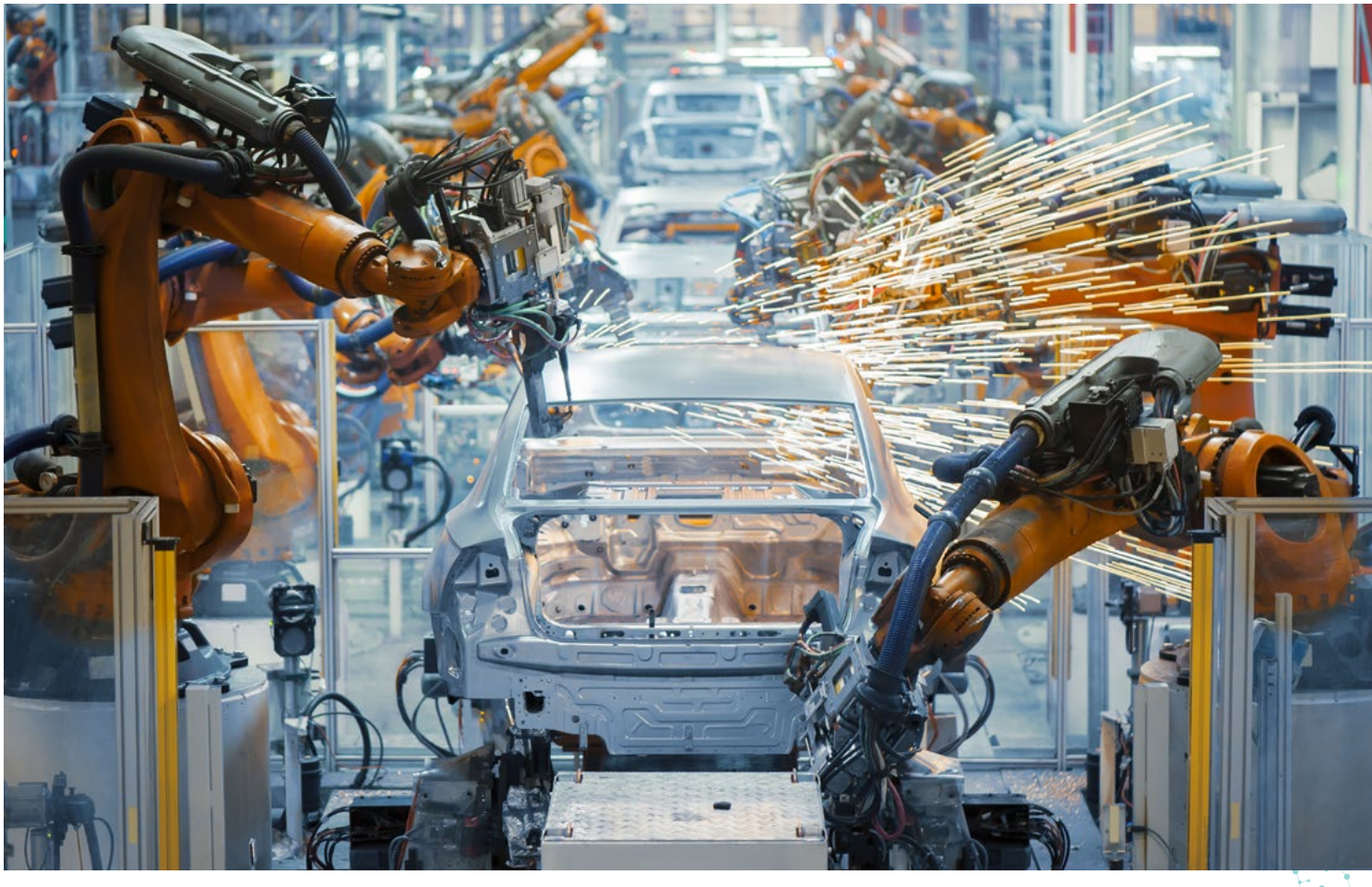
26. BEIS, 2022. Access here. 27. Business Insolvency Helpline, 2022. Access here.
28. Gailani et al, 2022. Access here.

The impacts on the UK of the energy crisis are replicated to a significant extent across the rest of Europe and in some countries the situation is exacerbated by physical constraints on the supply of gas.[29] However, in one respect the UK stands out – it has the highest industrial electricity prices amongst IEA member countries and this was true even before the recent price rises.[26] Industry has been quick to point out that these high prices are an obstacle to decarbonising industry and may lead to carbon leakage.[30] This has resulted in calls for Government to explore ways of reducing industrial electricity prices more permanently, particularly for those exposed to international competition.[31]

Suggestions include reducing the policy costs currently levied on industrial electricity prices and incentivising the use by companies of off-grid renewable electricity generation and electricity storage.[24] A recent UKERC paper also explored the potential of using the low cost of renewables and nuclear to help keep energy prices down, by switching older projects from the Renewables Obligation to CfDs. [32]

In conclusion

While both gas and electricity prices are likely to reduce in the longer-term, it is clear that the recent energy crisis has refocused the attention of both businesses and government on questions of energy affordability and security. While the longer-term impacts from the crisis remain uncertain, it may well act to accelerate action to reduce the dependency of businesses on fossil fuels and promote electricity as a low carbon source of energy.



29. UKERC, 2022. Access here. 30. IEUG and MCCG, 2022. Access here.
31. Aldersgate Group. 2022. Access here. 32. Gross et al. 2022. Access here.

The Impact of the Crisis on Transport

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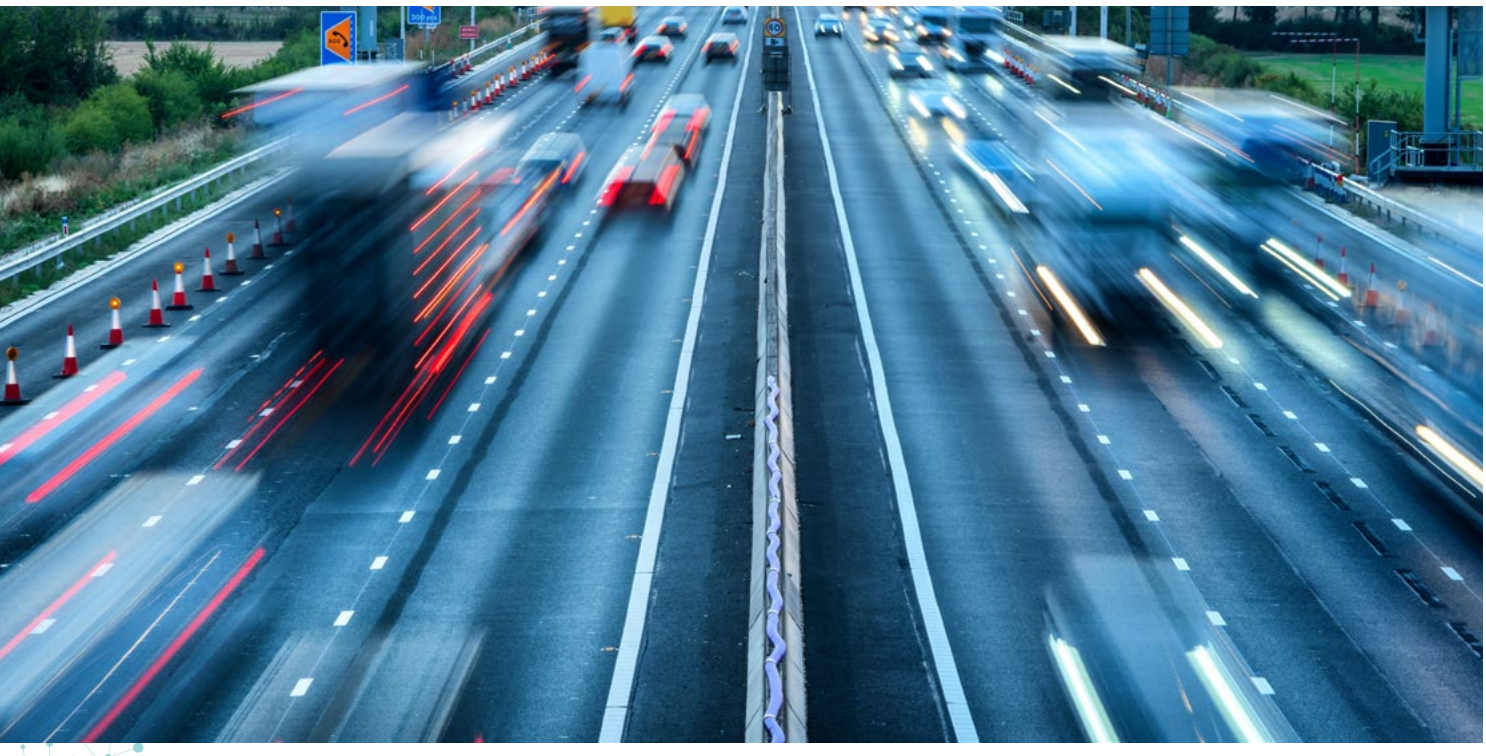
* University of Oxford, ** University of Leeds

The publication of the UK Transport Decarbonisation Plan (Plan) in July 2021 seems like a very long time ago. Political turmoil at home, industrial action in many areas of society, including railways, and the cost of living crisis have overshadowed policy making and delivery in this sector.

The Plan was the first UK government strategy since 2004 and addressed vehicle and fuel transitions as well as passenger and freight demand and associated infrastructure requirements. While it set a transport sector carbon budget projection of sorts, it provided no information as to the policy trajectories of traffic growth, fleet size and average CO_2 emissions, and so on. Specifically, it did not call for a reduction in car use, something other national and regional strategies have done, such as in Scotland – reflecting a growing consensus that we cannot meet decarbonisation targets without a net reduction in traffic.[30]

The latest figures (see Figure 2) show that car traffic remains lower than pre-pandemic (-10% in year ending March 2022 when compared to 2019). While this can be considered good news and larger than the effect of any historic policy to reduce traffic nationwide, vans have increased by about 10% during the same period, and lorries by 3%.



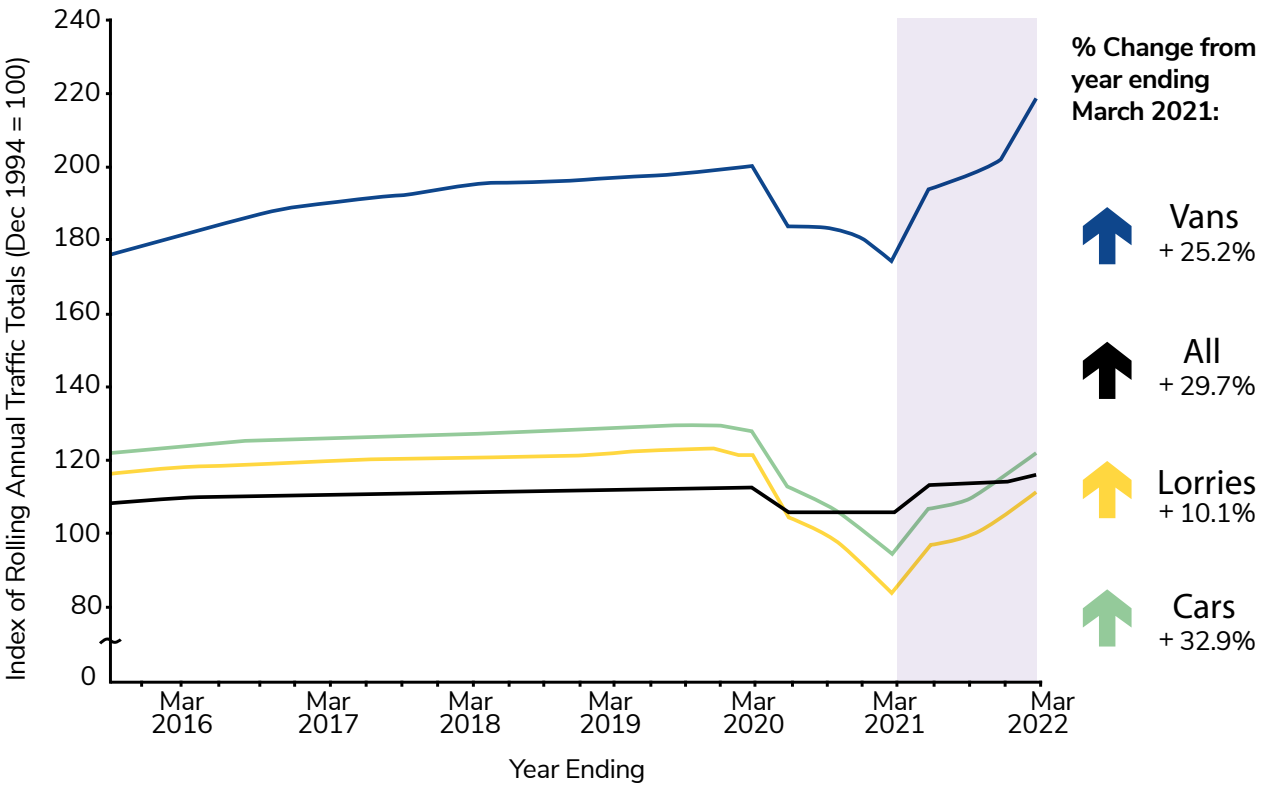


Figure 2: Rolling annual index of road traffic in Great Britain, by vehicle type from 1994 (2015 onwards shown) (from TRA2501b)

In carbon terms, transport remains the largest emitter in the UK (24% in 2021) and emissions are on the rise again, with an increase of 10% in 2021 and further increases expected.[31] It can be argued that the transition to electric mobility cannot come soon enough. But, will it?

The effects of increased road fuel prices

The increase in the cost of motoring reduced car traffic and fuel demand, at least in the short term - when petrol and diesel prices peaked in July 2022 at 48% above the previous year, drivers reduced fuel demand by 16%.[32] Over the course of a year the effect is lower, at around 5%. Two-thirds of motorists either drove less during July, or cut back spending in other areas.[33] In a CREDS survey in 2022,[34] 44% of respondents reported driving slower or more efficiently, 22% replaced journeys with public transport, 38% replaced journeys by walking or cycling, and 38% didn't undertake some journeys. Interestingly, these individual actions were all part of the International Energy Agency's "10-Point Plan to Cut Oil Use" but were largely ignored by the UK Government.

Domestic electricity prices rose 62% between August 2021 and October 2022 (from 21p to 34p/kwh, the current price cap per unit of electricity), whereas petrol rose 'only' 22% and diesel 36% (from £1.35/£1.37 per litre to £1.65/£1.86 pence per litre). Yet as EVs are 2-3 times more energy efficient than internal combustion engines, the relative price increases in cost per mile are not that different. Indeed absolute, not just relative, changes matter – monthly cost increases were comparable for EVs and medium petrol/diesel ICEs, rising £28 a month[35] in both cases.

32. Scottish Government (2022) Access here 33. BEIS (2022) Access here 34. ONS. 2022. Access here. 35. Rob Davies. 2022. Access here. 36. TRANSAS. 2022. Access here. 37. Monthly cost increases: £42 to £67 a month for a Nissan Leaf driven 10k miles p.a., and £103 to £131 for a medium petrol/diesel ICE

Is the EV market stalling?

In the year to October 2022, 14.6% of new cars were battery electric, an increase from 10% in 2021.However, monthly vehicle registration data for Oct-21 to Oct-22 show that the EV share of sales seem to have slowed down, even plateaued (see Figure 3). A recent RAC survey highlights that 14% of drivers plan for their next car to be electric, up from 10% in 2021.[36] However, the number of drivers expecting to get an EV in the next five years dropped from 17% to 15% over the same period.

Recent analysis suggests that upfront costs, access to charging infrastructure and driving range are preventing some from making the switch.[37] In Germany, industry bosses say the rise in electricity prices, as well as in raw material costs, a chronic shortage of parts, and a reduction in disposable income are having a "considerable impact on the production and sales of cars".[38] This is for all car types not just EVs.

Norway has shown that to truly accelerate the uptake of EVs a whole range of incentives need to be in place and sustained over years, not months - in 2021 65% of their new car registrations were battery EVs. 39 Incentives include upfront price signals favouring EVs, low cost electricity, low/zero 'road taxes', access restrictions for fossil fuel vehicles, and so on. But in the UK, the long-running plug-in vehicle purchase grant is being scaled down and the chancellor has just imposed a UK vehicle excise duty (VED) on electric cars for first time to address the fall in tax revenues caused by the transition to EVs, as owners also avoid paying fuel duty.40 Both policy changes may slow down the transition to EVs.

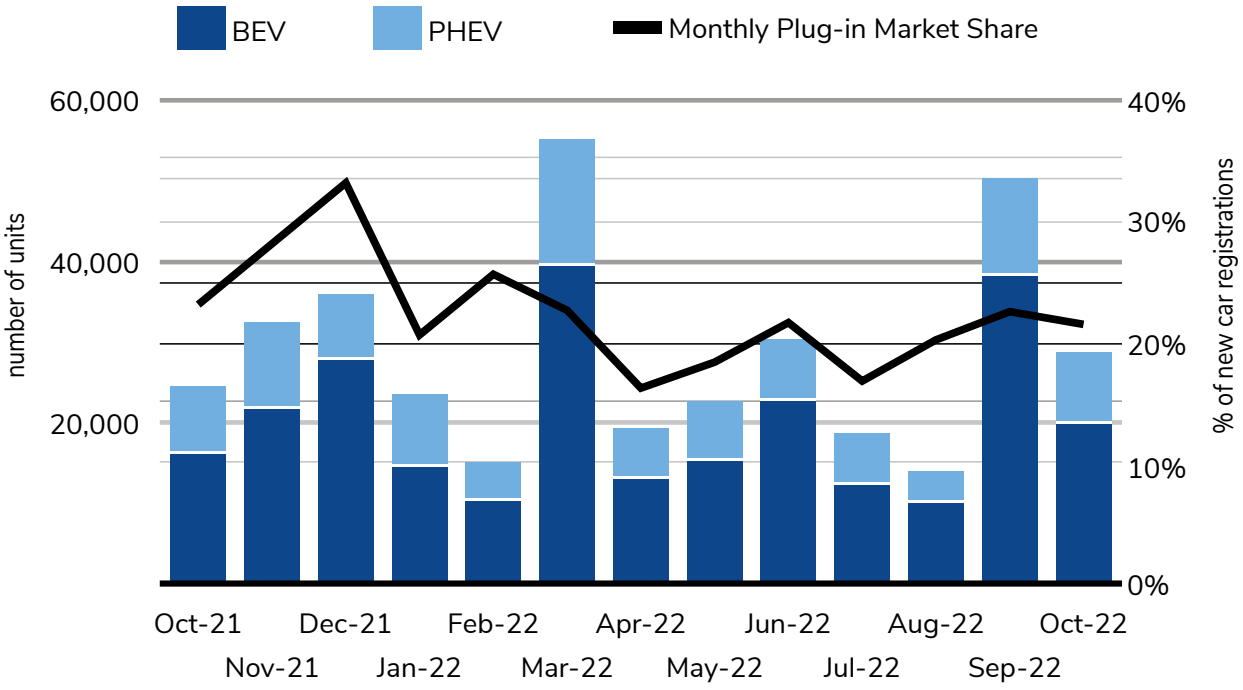


Figure 3: Number of registrations and market share of plug-in cars each month over the past 13 months
Source: SMMT, 2022. Access here.

38. RAC. 2022. Access here. 39. WEF. 2022. Access here. 40. Kate Connolly. 2022. Access here. 41. Victoria Klesty. 2022. Access here. 42.George Parker et al. 2022. Access here. 43. HMT. 2022. Access here.

Government response and way ahead

In response to the increase in prices, the government introduced a 5 pence per litre reduction in fossil fuel duty in March 2022. Together with the eleventh annual freeze to fuel duty in 2022-2023[41] and the prospect of relatively cheaper 'electric' motoring, driving was again made cheaper than travelling by bus or rail. So, it would appear that the Government's strategy is to allow road traffic to increase and for the transport sector to continue to not pull its full weight towards carbon budgets.

What we need is a more sophisticated consideration of how people 'feel' price increases and how behaviour is impacted, and who those 'people' are. There are lots of other reasons why fossil fuel car owners will have felt the impact and thus potentially adapted behaviour more than EV owners. It is not just what you pay, but how transparent and how often you pay that impacts behaviour. Cars are filled up at least monthly and the charge is very noticeable and attributable to that specific energy service, whereas EVs are often on special tariffs or get charged at work for free. Changes in price per litre are visible as you drive past petrol stations, and people are very aware of how much it costs to 'fill their tank'. Electricity and gadget usage costs are still less visible, albeit there is a much-heightened awareness of the cost due to the energy crisis, but early adopter EV owners tend to be the wealthiest and less sensitive to price changes.

In conclusion

If we are serious about making the shift to EVs we need to make them cheaper than fossil fuel motoring. When assessing the future uptake of EVs we need to account for how visible charges and upfront incentives are, how often people engage with the detail of the costs, the heterogeneity of elasticities across social groups, whether there are workarounds (cheap tariffs, free electricity at work) and absolute price differentials. This requires more careful policy design and delivery, with different approaches at the national and local levels. Examples include vehicle excise duty differentials, road pricing, local access restrictions and so on. Last but not least, even with accelerated EV uptake, the UK urgently needs a strategy on how to reduce traffic levels, without which we cannot meet our decarbonisation targets.

UK-EU Energy & Climate Relations: Some Silver Linings Amidst Crises

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Over the past year or so, the wider relationship between the UK and the EU, has restricted further progress on closer energy and climate re-negotiations. This is despite energy and climate historically being areas of agreement between the UK and the EU.[42] However, Russia's ongoing invasion of Ukraine, high energy prices, rapid energy policy change across Europe, and the need for climate action by 2030 now underpin a mounting sense of urgency to improve UK-EU energy and climate relations.

the UK will rejoin the NSEC group

The new 'mood music'

The Trade and Cooperation Agreement (TCA) set a basis upon which the UK and EU can develop a closer relationship in energy and climate. This is important as some aspects of the current agreement, for example default gas and electricity trading rules, are sub-optimal.[43] It is hard to overstate, however, the degree to which energy and climate talks have been over-shadowed by the wider relationship. The main issue, in a nutshell, being the UK government's attempts to alter the NI Protocol, and the EU decision to take the UK to court over breach of an international agreement.

Much can change, however, in a few months in UK politics. In October, when diplomatic activity re-started for the first time since early 2022, Steve Baker, Minister for Northern Ireland, publicly apologised for not recognising when negotiating Brexit, that Ireland has "genuine" interests.[44] Liz Truss, as Prime Minister (PM), attended the inaugural meeting of the European Political Community, where it also emerged that the UK will re-join the North Seas Energy Cooperation (NSEC) group as a technical member. It left the NSEC because of Brexit, but cannot be a formal member unless it signs up to EU Internal Energy Market Rules.[45] This can be seen an important concession by the EU whose position on the UK not 'cherry picking' had previously made this kind of agreement difficult.

Under PM Rishi Sunak relations continue to thaw. At a side-meeting with President Biden at G20, Sunak proposed that a new Northern Ireland deal would be reached by April 2023,[46] whilst Chris Heaton-Harris, Secretary of State for Northern Ireland, hopes a diplomatic solution will make the need for the protocol bill redundant.[47] The Northern Ireland Protocol Bill continues to face delays in the House of Lords.

Energy and climate co-operation

These sentiments were echoed by both sides at the UK-EU Parliamentary Partnership Assembly (PPA), which met in early November, marking the first visit by Members of European Parliament to Westminster since Brexit.[48] Interestingly, the opening session of the PPA was on energy cooperation and, indirectly, climate change. It was repeatedly asserted by both UK and EU representatives that energy and climate

44. Blondeel, et al. 2022. Access here. 45. Kuzemko, et al. 2022. Access here. 46. O'Carroll. 2022. Access here. 47. Bounds, 2022. Access here. 48. Smyth. 2022. Access here. 49. O'Carroll. 2022. Access here. 50. The November UK-EU PPA meeting can be viewed in full here.

interests are aligned, providing clear incentives to pull together. Energy security was discussed at the September Specialised Committee on Energy meeting, whilst climate and energy are core subjects for the ongoing House of Lords inquiry into UK-EU relations.

Motivation for improved co-operation: energy security

The EU and UK have both committed to phasing out imports of Russian fossil fuels, and are working together on security, sanctions, and EU gas storage. The task of phasing out Russian fossil fuel imports is most significant for the EU – in 2021 41% of EU gas imports came from Russia, and concerns are growing about winter 23/24 supplies. Through its REPowerEU programme, and associated new policies, the EU is replacing Russian imports with clean energy and demand reduction, as well as by seeking non-Russian sources of gas supply.

Energy interconnection and trade between the UK and EU has become more important. The UK has been acting as a gas 'bridge', passing through pipeline gas from Norway and from its three LNG terminals, and UK North Sea gas to the EU. As a result, UK gas exports rose 576% in the second quarter of 2022 versus the same period in 2021,[49] whilst it also became a net exporter of electricity over the Summer, the first time for over a decade.[50] In the coming months there may be further negotiations on introducing a unilateral or bi-lateral agreement to ensure UK gas supply.[51] It is worth noting, however, that Germany is building five LNG terminals, which may reduce the need for the UK to act as a gas bridge, and net electricity exports are not expected to continue through winter 2022.

51. BEIS. 2022. Access here. 52. Heynes. 2022. Access here. 53. Oltermann. 2022. Access here.

Within this context, greater urgency has emerged around updating the TCA's default UK-EU trading rules. They should have been re-negotiated by April 2022, and significant concerns were expressed about the delay by the UK Minister for Europe at the UK-EU PPA.[50] Less economically efficient gas and electricity trading rules are unhelpful during this cost-of-living crisis, but Brexit has also delayed the build out of crucial energy interconnectors between the UK and EU. This also makes little sense given that further integration and improving international interconnections are bedrocks of European plans to improve energy security.[52]

Motivation for improved co-operation: renewables

Climate change mitigation is another area where UK and EU interests are aligned, with both sides recognising the need to accelerate the pace of change. The EU has proposed to raise its 2030 renewable energy target to 45%, from 40%, whilst the UK has committed to decarbonise the electricity system by 2035. It is clear from UK and EU energy policy responses to Russia's invasion of Ukraine that renewables are now seen as a central pillar in increasing energy security.

Thus, the UK re-joining the NSEC group is significant, given its position between Ireland and the rest of Europe. The NSEC is targeting 260GW of North Sea wind by 2050, whilst the UK plans 50GW offshore by 2030, and Ireland has plans for 37GW in Irish seas. These highly ambitious targets require sufficient and efficient interconnection and trade between all parties. As recognised by Graham Stuart, UK Minister for Energy and Climate Change, across the European landscape there is an abundance of wind and sun making trade, grid interconnection and co-operation vital.[50]

In conclusion

The war is encouraging cooperation, but this by no means guarantees that vital agreements on energy trade can be reached. In the months ahead, the fate of the NI Protocol bill remains a key sign of whether energy and climate negotiations can remain open and, indeed, allow for required political space to negotiate improved trade rules. If this can be achieved it would make a positive contribution towards energy sustainability and costs in the UK, albeit unlikely to return the energy and climate relationship to where it was pre-Brexit.

54. Umbach, F. 2010. 'Global energy security and the implications for the EU', Energy Policy 38 (2010) 1229-1240

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