West Midlands
Industrial Energy Taskforce

Powering Growth in a Changing World

The final report of the West Midlands Industrial Energy Taskforce

Contents

There are also a number of relevant supporting papers and surveys available providing the evidence behind this report. You can access these via the taskforce website at **www.wmindustrialenergy.co.uk**

West Midlands Industrial Energy Taskforce

Preface and acknowledgements

This report is the outcome of six months' intense effort from a small and dedicated team established by the Mayor, the WMCA and MAKE UK following an emergency summit on industrial energy costs initiated by Mike Wood MP and the Black Country LEP and convened by the Mayor in August 2022. This summit was attended by over 30 West Midlands industrialists and the then-Energy Minister, Greg Hands MP.

The Taskforce was established as an independent commission but it would not have been able to complete its work without the financial support of the WMCA, and extensive in kind and voluntary support from MAKE UK, Camirus, the Black Country Consortium, the Chambers of Commerce, the Confederation of British Metalforming (CBM), the Cast Metals Federation (CMF) and the employers of the Taskforce members.

In addition, more than 100 individuals and organisations contributed via interviews, evidence gathering sessions and workshops and many more provided evidence by email and through completing surveys either directly run by the Taskforce or through the regional Chambers and Trade Associations. We also had many helpful discussions with officials in government, including in the Department of Energy Security and Net Zero (DESNZ) the Treasury and the National Infrastructure Commission; and in the energy sector, particularly National Grid ESO and Electricity Distribution, Cadent Gas, EON, SSE, Centrica, EnergyUK and Ameresco, as well as a number of brokerages and consultancies.

As Chair of the Taskforce, I would like formally to thank all of these organisations for their almost universally constructive and helpful inputs, the taskforce members, and in particular the Mayor for his long-term support and interest in this topic.

From a personal perspective this Taskforce has been a unique opportunity to delve deeply into an extremely challenging issue. For those of us with an industrial (and especially manufacturing) background, answering the question of how industry should relate to energy markets is intrinsically linked to the UK's international competitiveness and opportunities for regional and national economic growth. The current crisis in energy costs, coupled with the ongoing challenges of managing a just transition to a net zero economy and society, have brought this question into particularly sharp focus.

It's been a privilege to lead this Taskforce, and I hope our report goes some way towards providing answers to these difficult challenges. If we get this right, we'll not only reduce regional and national economic challenges, but also enable the thousands of companies and skilled people that make up the West Midlands' manufacturing economy to fulfil their potential and to continue to contribute creatively and sustainably to national economic success.

Any errors or omissions in the report itself are, of course, entirely the responsibility of the Taskforce alone.

Matthew Rhodes

June 2023

Foreword from the Mayor

Energy matters to the West Midlands, and to West Midlands businesses in particular. Our regional economy is dominated by a wonderful diversity of innovative enterprises supplying sectors as varied as healthcare and aerospace; construction and defence; automotive and chemicals. Increasingly the West Midlands also supplies services like hospitality and logistics, or research and knowledge transfer which, like our manufactured products, are exported worldwide.

All these businesses depend on access to competitively-priced, reliable and predictable energy supply. The experience of the past two years, however, has shown this cannot be taken for granted, and our region's history and unique industrial demographic means that the impact of the energy costs crisis of 2022 has been felt more in the West Midlands than any other region.

Volatile and increased energy costs threaten the livelihoods and well-being of everyone in this region, from foundries and chemicals factories in the Black Country to restaurants and professional service firms in Birmingham, and advanced manufacturing in Solihull and Coventry.

However, the UK energy system is complex and has evolved over many years to meet conflicting needs. Hasty interventions can easily have unintended consequences or create more problems than they solve. This is why I commissioned this independent Taskforce last August to investigate these challenges thoroughly, to identify where the system really isn't working, and to recommend practical and immediate actions we can take as a region and country to put things right.

I have been delighted with the support provided by industry for the work of the Taskforce, and also with the constructive response from many of the energy companies and sector stakeholders to date, including central government. The Taskforce has done an excellent job under intense time pressure and delivered its report and considered recommendations on time.

The baton now passes to the politicians, the energy sector, regulator and government, as well as to industry itself, to take these recommendations on board and to act on them. I look forward to working with all of these groups to make sure that the UK energy system doesn't stand in the way of continued West Midlands economic success and growth.

Andy Street

One West Midlands business's perspective on the energy crisis

Case Study: **Adam's & The Oyster Club**

Over seven years, Adam and Natasha built a successful restaurant business in Birmingham employing 90 staff on two sites. Their growth was built on being among the best in the world at what they do, recognised in international awards – Michelin stars and AA Rosettes - as well as customer demand, coupled with the management and commercial skills to manage rapid expansion, demanding customers and 90 people.

Their business is surely a classic example of enterprise and competitive markets working well. They succeeded because their business was better than others at doing the things customers wanted, creating wealth and employment at a scale sufficient to sustain the equivalent of a small village.

Energy had always been a significant cost to their business – around £90k a year – but it was also not something they could do anything about, and the price had hardly varied since the company was founded. Give or take a few pounds at the margins, it would also be exactly the same for all of their competitors. No rational observer (or even an economist or management consultant) would have suggested Adam and Natasha should spend much management time on it: their focus should surely be on the areas where they could compete and differentiate their business so that they could continue to grow and succeed.

When the energy crisis hit in the summer and autumn of 2022, Adam and Natasha were initially unaffected, because like 80% of West Midlands businesses they were on a fixed term contract that protected them from short-term price rises.

However, as the year progressed and they neared their contract renewal date, the potential impact became clearer.

They were going to have to renew with prices still very high, so they faced a choice between exposure to a highly uncertain spot market, in which energy prices were periodically touching ten times the level they'd been in 2021; or entering a new fixed term contract at levels that would be 3-4 times 2021 prices.

What basis did they have to make this decision? Ability to predict energy costs is not normally something that differentiates a good restaurant or chef from a less good one, nor would any sensible economy or society want it to be. The company had a good broker, but like most brokers at this time he was struggling to find suppliers even willing to offer contracts, so Adam and Natasha really didn't have many options. The Government were making reassuring noises, however, and had just put in place a generous discount scheme which would absorb almost half the increased energy cost, so they bit the bullet and took the lower priced option of a fixed term contract at 70p/kWh, which with a 34.5p discount from government restricted their increased bills to just under twice what they'd been paying previously.

As it turned out, this was a business-critical decision, and it was the wrong one. No one knew it at the time, but after January 2023 energy prices would fall sharply, and businesses like Adam and Natasha's would have been better off accepting the very short-term pain of volatile spot prices for two or three months, and then perhaps entering a new fixed term contract from spring 2023.

As it was, the government cut the support available to businesses like this from 34.5p per unit to 1.9p per unit from 1 April, effectively doubling Adam and Natasha's energy bills until November and putting the business and half its staff at risk. The energy supplier offered to spread (and dilute) payments over two years through a 'blend-and-extend' model, but this remains crippling for the company.

Looking back up the energy supply chain, no one appears to be suffering here apart from Adam and Natasha. The broker is paid a fixed and very low commission per kWh, typically <0.5p/kWh, and will retain this in any deal; the retail supplier takes a percentage of the cost of units traded, so has done very well indeed out of the crisis, as their percentage is now of unit costs that are 3-5 times what they were previously.[1] The wholesale trader who sold the power to the supplier also takes a percentage, so also benefits, especially as in this case – and many others – the wholesaler is in fact a wholly-owned subsidiary of a global energy company that owns large numbers of renewable generators. The power they sold to Adam and Natasha was traded at least 10 times before reaching the end customer, with each trader taking some cut. The traders' costs haven't changed, but the market price of the power they produce has gone through the roof.

There is notionally competition in energy markets, but it's not obvious to Adam and Natasha – or any West Midlands business – what the benefits of this are, or indeed how it actually works given that in autumn 2022 you were lucky to get two quotes to supply you, and they would probably have been couched in completely different ways so that comparing them was impossible.

On the other hand, the benefits of competition in industrial and commercial and hospitality markets are very clear and well-understood: competition drives innovation, reduces prices for consumers, increases choice, and allows world-class entrepreneurs like Adam and Natasha to flourish and keep the regional and national economy thriving. The best and those who work hardest float to the top, and everybody benefits as a result.

Unless, that is, the fate of your business depends less on the quality of your products and services, the strength of your management and your ability to innovate and adapt; and more on sheer luck of when you contracted for your energy, plus the vagaries of the Whitehall machine.

The way UK energy markets are working is undermining the virtues and power of economic competition across the rest of the economy. This is the path to slow economic death. We need to find a better way as a region and country, fast.

[1] To give them some credit (in this particular case after some pressure) they have offered to refund this percentage as part of a blend and extend deal.

Executive Summary

Healthy economic growth in the West Midlands requires competitive markets for industrial and commercial products and services. These markets need to operate efficiently, driving down prices for consumers, improving quality and choice, and enhancing the global competitiveness of this region by rewarding innovation and enterprise.

Such outcomes cannot happen if markets for industrial products and services are arbitrarily distorted by the way energy markets work. The energy crisis of 2022-23 has exposed the fact that UK energy markets have been designed and are operated in a very blinkered and introverted way, prioritising competition in the energy sector in ways that generally benefit suppliers and traders rather than customers, and which impact diverse energy-exposed economies like the West Midlands particularly badly.

By May 2023, we estimate that the impact of the energy crisis on the West Midlands economy was as a minimum an effective reduction in total regional GVA of 2%. 14% of companies faced energy costs that exceeded 20% of their turnover, and 30% of businesses were locked into fixed tariffs more than three times pre-crisis rates. Many of these will continue to suffer damage into the fourth quarter of the year. This is a slow burn and insidious crisis that will impact the regional economy for years.[2]

Addressing this requires fundamental reform, not just of UK energy markets themselves, but of the institutions and culture that has created and sustains them. However, such reform will not be quick or easy, and the need for action to save our regional economy is urgent, so this report focuses primarily on immediate and short-term actions that should be taken, primarily at regional level, to mitigate the impact of the current crisis and avoid the same things happening again.

The UK energy market is complex and multi-layered, but the Taskforce has identified five challenges faced by all the region's businesses that depend on energy in the current crisis.

1. **Priority.** Correcting the legacy of an unprecedented crisis – specifically the inability of some firms to escape from fixed term contracts set at unsustainable levels under duress during the worst period of the energy crisis of 2022.

2. **Urgent.** Issues of market transparency and access, and scope for abuse of market power that disproportionately favour suppliers and prevent businesses shopping around to access the most competitive contracts.

3. **Medium-term.** Market failures in access to energy efficiency services and products that inhibit firms from minimising their exposure to energy price shocks (and also the regulatory and compliance challenges that come with the transition to net zero).

4. **Longer-term.** Structural issues in the way energy infrastructure is planned and network and system (non-commodity) costs are determined and allocated that put all West Midlands and UK firms that rely on energy as a direct cost at a competitive disadvantage compared to their peers in most other developed economies.

5. **Institutional.** Systemic weaknesses of national and regional institutions and culture that inhibit both efficient approaches to addressing these challenges and sometimes even recognition that the challenges exist at all.

2 This evidence was gathered for the taskforce by the West Midlands Chambers of Commerce in the first three months of 2023 (see Bibliography ref iii). The sample size was 445 firms spread evenly across the region.

The five energy challenges facing **West Midlands industry**

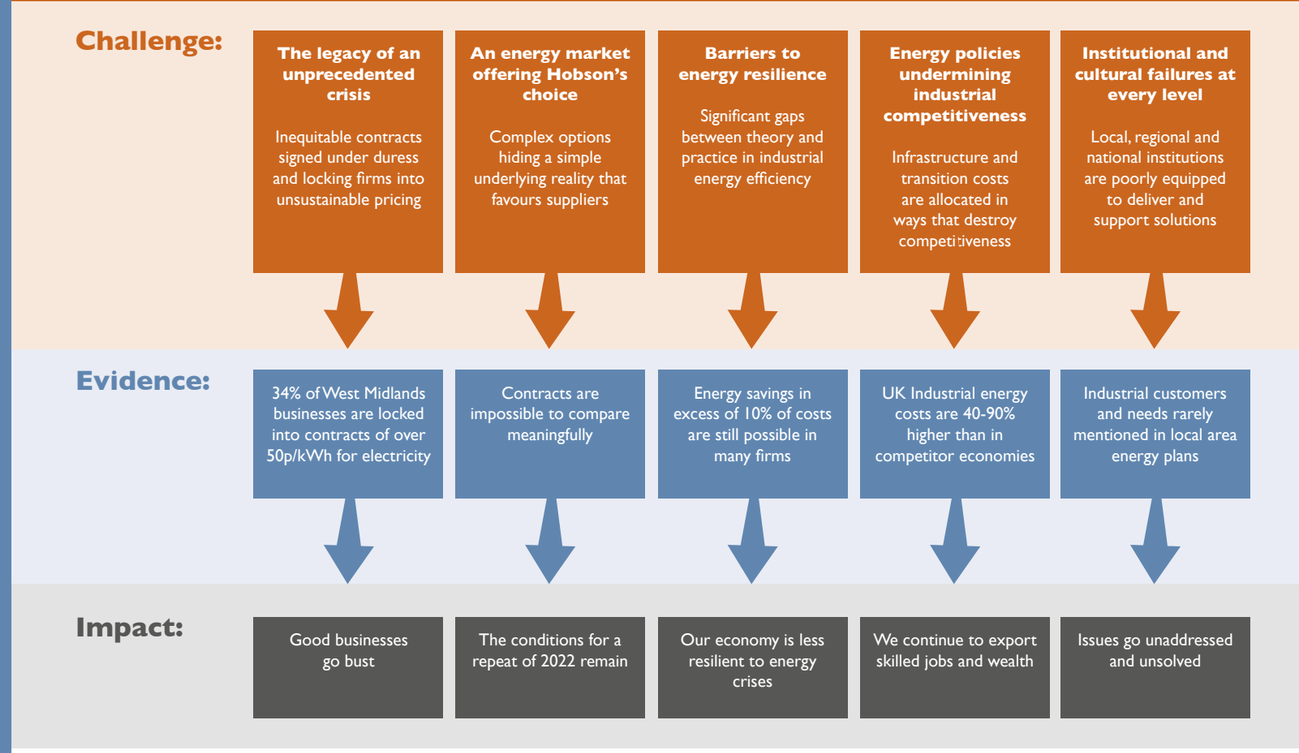


Figure 1: Key energy challenges for the West Midlands' economy

The report addresses each challenge in turn and makes fifteen specific recommendations for action. These are summarised in the table below, including suggestions as to where the responsibility for action lies and how the West Midlands as a region might support and encourage delivery.

Key recommendations

Recommendation		Responsibility	Pathway to delivery for the West Midlands
PRIORITY			
2.1	In addition to the windfall taxes already imposed on oil and gas companies, the government should ask energy brokers, suppliers and generators to release West Midlands industrial and commercial customers from contracts signed during the crisis at rates greater than 50 p/kWh for electricity or 11p/kWh for gas and allow them to renegotiate at current rates. Any costs of doing this should be borne by the energy value chain as a whole (i.e., where a supplier releases a customer from a contract, the generator should also be required to release the supplier from any back-to-back contract).	HM Treasury	A joint approach from the West Midlands, industry bodies and energy companies to the Treasury requesting that the £5.5bn allocated to EBDS is instead allocated to covering the costs of releasing companies from contracts signed during the worst period of the crisis*. The onus should lie on energy supply companies to evidence any loss. (* The proposed 50p threshold figure could also be varied based on available budget.)
2.2	Allow companies with outstanding Covid Business Interruption Loan Scheme obligations to write these off provided they invest the funds in onsite energy efficiency projects during 2023.	HM Treasury	This could be funded by re-allocating some of the spare funds available from the amounts budged by Treasury for EBDS and EBRS support, given the falls in wholesale gas prices in 2023.
URGENT			
3.1	Ofgem's remit should be extended to cover all but the largest businesses (i.e., those with balance sheets enabling effective energy market participation) and resourced with powers to regulate the third-party intermediary (commercial energy broker) market. This should include responsibility for an accreditation scheme for brokers and creation and enforcement of standard industrial energy	DESNZ	The West Midlands could pilot this form of regulation in partnership with Ofgem (through Energy Capital). Funding could be provided by a levy on broker fees, which should also be regulated and capped.
3.2	The WMCA should commission a feasibility study into the potential for a regional industrial energy services company, to be delivered in partnership with one or more energy suppliers and regional industry bodies.	WMCA	Such a study could be commissioned from suitably qualified consultants and managed through the Centre for Manufacturing Transition (CMT - see 6.1)
3.3	Regional business support and skills programmes should be enhanced by the inclusion of energy management skills.	WMCA	Energy skills should be included in local skills improvement plans and provision made within the proposed regional business energy efficiency pilot.
MEDIUM -TERM			
4.1	Accelerate the proposed £25M West Midlands Business Energy Efficiency Pilot (BEAS) emphasising the role of sub-metering and the importance of regional delivery structures.	DESNZ	This programme is not currently scheduled for approval until at least September 2023. This timeline can and should be brought forward.
4.2	Work with the national Energy Efficiency Task Force to ensure lessons from the West Midlands are shared nationally and to supplement the West Midlands pilot with private finance and energy services offers from global corporates.	MAKE UK and CMT (see 6.1)	There are opportunities to work with global energy services companies to enhance the offering by securing sponsorship, although this needs to be carefully managed to provide a suitable variety of solutions to the diversity of West Midlands businesses.
4.3	Work with electricity network operators to streamline the connections process for industrial customers, including establishing a joint energy infrastructure panel with powers to prioritise reinforcement investment to support strategic industry across the region.	WMCA	Energy Capital, supported by the CMT, should ensure the proposed Net Zero Infrastructure Delivery Panel prioritises this issue.
MEDIUM -TERM			
4.4	Enhance existing manufacturing skills and education programmes by ensuring these include modules on industrial energy efficiency.	WMCA/Education providers	Where public funding is supporting manufacturing skills programmes, there should be a requirement to include education in energy efficiency and energy management. Established providers such as MAKE UK can also pre-empt this by offering such programmes immediately.
4.5	Support and promote national industrial energy efficiency awareness schemes focusing particularly on ensuring these reflect the realities of industrial energy challenges (rather than purely on the challenges of optimising building energy use). One effective way to promote awareness of energy efficiency would be to require appropriate messaging (e.g., of the value of sub-metering) on bills.	WMCA/ West Midlands Industry via the CMT (see 6.1)	Inclusion of messaging on bills should be part of the pilot described under 3.1. West Midlands industry should engage more actively with DESNZ to provide feedback on proposed awareness and advice schemes. This could be co-ordinated through a regional industry body such as the Centre for Manufacturing Transition (see 6.1)
4.6	Give industrial customers a right to require landlords, planning and regulatory authorities to support energy efficiency investments where commercial returns can be demonstrated	DESNZ/WMCA	The West Midlands could pilot such a requirement working in partnership with DESNZ.
4.7	The WMCA should work with Ofgem to develop and pilot standard contracts and mechanisms for power and connection sharing and trading between neighbouring companies (i.e., so company A can sell its solar output to neighbours) similar to schemes such as standard forms of local Power Purchase Agreement contract (PPA) available in central Europe.	WMCA	Energy Capital should lead a project to define and pilot such contracts in partnership with Ofgem. Some resourcing for legal advice is likely to be required.
LONGER-TERM			
5.1	WM industry and energy companies should work together to establish a dedicated West Midlands industrial power market offering WM firms competitive energy costs. This might be achieved by forward buying the output of fixed and low cost generators (wind, solar nuclear) to match a sensible portion of aggregated regional industrial demand. The region through the Mayor and WMCA should underwrite some of the risk of making this market.	West Midlands Industry via the CMT (see 6.1)	A West Midlands industrial collaboration could engage with supportive energy suppliers, Ofgem, and academic proponents of this concept to design and pilot a ring-fenced industrial energy marketplace for the region. This is a good example of the kind of project that requires an effective representative institution such as the proposed CMT (see 6.1).
INSTITUTIONAL			
6.1	West Midlands industry, supported by trade associations, regional government, the other industrial clusters and the energy sector (DESNZ and Ofgem) should establish and host a National Centre for Manufacturing Transition (CMT) recognised by the Mayor and Combined Authority, and supported by regional and global partners to carry forward the recommendations of this taskforce at regional and national level.	WM Mayor and WMCA	The Black Country Industrial Cluster has created the foundations for a national place-based industrial institution to represent the interests of dispersed manufacturing sites through the energy transition. There are more of these sites in the West Midlands than any other region. Private finance should be the primary funding source for such an institution, but a minority contribution from the public sector will ensure effective linkages to public sector-directed infrastructure investments and demonstrate regional commitment to a just transition and to a meaningful and balanced industrial strategy.
6.2	The key regional interfaces between industrial competitiveness and the energy sector are in energy infrastructure planning and delivery. The WMCA should ensure that the industrial voice is well-represented in infrastructure planning through meaningful industrial representation via the CMT on economic and energy boards and the infrastructure delivery panel and the infrastructure delivery panel (4.3)	WMCA	Formal recognition of the role and activities of the CMT within WMCA governance structures will enable efficient delivery of the taskforce's recommendations and create a legacy institution that ensures change is permanent and sustained.

1. Introduction

In 2023, energy bills for West Midlands businesses totalled somewhere in excess of £4.4bn, of which 52% was spent by industrial firms and 48% by the services sector. This figure represents over 4% of regional GVA, and has more than doubled since 2021, effectively reducing regional output by 2% and handicapping efforts of the West Midlands to compete globally, grow, and deliver a sustainable, healthy society for its people.

Energy matters more to some industries and some regions than to others. Two sectors that are of particular importance to the West Midlands are:

- manufacturers where energy directly affects their competitiveness in global supply chains
- hospitality and leisure businesses where energy is their highest cost next to staff

As explained in the preface, the Taskforce was instigated by West Midlands manufacturers because advanced manufacturing remains the lifeblood of this region and West Midlands manufacturing in turn supports many critical national supply chains. Rising energy costs affect them particularly because energy costs were already around 10% of business costs prior to the crisis, so many West Midlands businesses now face energy costs in excess of 20% of their sales. This is combining with rising raw material and staff costs to create a perfect storm of stresses, many of which are impacting the economy insidiously over time as contracts expire and come up for renewal.

As the work has progressed we've also had increasing engagement from broader sectors with a growing economic interest in the energy sector, particularly the hospitality sector, and many of the findings and recommendations – particularly for short-term actions – also apply to them.

The UK energy market is complex, and a short briefing on how it works for industrial and commercial customers is provided as appendix ii for those unfamiliar with the sector.

The main body of the report is organised in five sections matching the five challenges described in the executive summary (figure 1).

Section 2 looks at one-off ways to correct the unfair and dangerous impacts of last year's price volatility on West Midlands businesses. This is not about energy market reform – simply about mitigating the impacts of damage that has already been done.

Section 3 looks at ways to work within existing energy market mechanisms to improve the way they relate to the wider economy and reduce some of the most obvious inefficiencies and opportunities for this relationship accidentally to cause economic damage. It's not about structural reform, but about making existing mechanisms work better.

Section 4 also largely works within existing market structures, but addresses the deeper issues of market failures in industrial and commercial energy efficiency as they affect West Midlands firms in particular. The consequence of these market failures is an economy that is less resilient to energy price shocks than it could be, and we look at ways to address this potential weakness.

Sections 5 and 6 cover the more fundamental challenges of UK energy market structures themselves, and the institutions and culture that support these. These do consider recommendations for more fundamental reform, which will not be quick, but which it would be remiss to leave out. In both cases we have identified immediate actions that could be taken to support West Midlands industry and take the first steps towards the necessary change.

The Taskforce has grouped recommendations against each of these five challenges, and these are summarised in a final section that also draws out a small number of themes which provide the conclusion to the report.

2. The legacy of an unprecedented crisis

There are two ways to destroy the advanced industrial economies of competing nations. One is to bomb their factories; the other is to create massive turbulence in global energy markets and rely on the unintended consequences of unbalanced national energy market designs and the responses of your competitors to destroy their own industrial base for you.

In the UK, our energy market design makes our industrial economy particularly vulnerable to global energy market turbulence, and within the UK, the economy of the West Midlands is more exposed than most other regions.

There is clearly little any region or country can do about global market developments, but they can act to mitigate the impact of these developments on their economies. Different countries responded differently to the crisis of 2022 (see appendix iii), and this section explores how the UK's national response has impacted West Midlands industry and created a legacy of competitive disadvantage that risks destroying otherwise good businesses the region cannot afford to lose.

This section takes the UK energy market design as a given, and focuses on minimising the legacy impact of the crisis in this context. Section 3 looks more broadly at how the energy market design might be improved to minimise the chances of similar outcomes in future.

The problem

During 2022 UK industrial energy prices reached peak levels that were at times more than 10 times the average for the previous twenty years, but also exhibited unprecedented levels of volatility (figure 2).

Figure 2: UK Wholesale Electricity and Gas Prices – 10-year history

Source: Trading Economics, May 2023. https://tradingeconomics.com/united-kingdom/electricity-price

The government responded by offering an Energy Bill Relief Scheme (EBRS) for businesses (see appendix iv) that provided discounts of up to 34.5p per kWh for electricity and 9.1p/kWh for gas in an environment where at times contract offers to West Midlands businesses exceeded £1/kWh for electricity (see box).

However, these discounts were offered only until March 2023 and in a climate of considerable uncertainty. They were also structured in a way that was difficult for firms to interpret, for example linked to wholesale prices that companies could not always easily isolate within their complex contracts (see section 3). To make this worse, the market volatility led to many suppliers stopping offering new contracts at all, so many industrial firms who came out of fixed term contracts in the Autumn of 2022 struggled to get contract offers at all, and found themselves choosing from a much-diminished pool, often as small as a single broker or supplier willing to quote. This issue was particularly severe for smaller companies and those in the hospitality sector, which suppliers saw as carrying substantial credit risk (given the volatile times).

As a consequence, in March 2023, over 30% of West Midlands businesses found themselves still locked into fixed term contracts at over 50 p/kWh (for electricity) at a time when wholesale energy prices were rapidly settling back towards pre-crisis levels (see figure 2). [i]

In January 2023 the Government confirmed that EBRS support would end at the end of March, but a further 12 months of support would be provided at significantly lower levels (discounts of 1.9p/kWh for electricity and 0.7p/kWh for gas, with slightly enhanced levels for energy-and trade-intense businesses).

This meant that West Midlands companies who had signed fixed term contracts in autumn 2022 at 50p/kWh or more effectively saw their energy costs rising on April 1 by between 15 and 30%. Furthermore, they are trapped in these contracts until the fixed term expires, which is typically autumn 2023 at the earliest. [ii]

For many companies these levels of energy costs and cost rises are business-threatening. Data collected for this taskforce by the West Midlands Chambers of Commerce in March 2023 suggests that over 14% of West Midlands businesses are now spending more than 20% of their turnover on energy costs. These are levels of energy costs commensurate with foundation industries such as steel and petrochemicals which have historically received a degree of protection from rising energy costs. Such levels are clearly unsustainable for many businesses (average profitability in UK manufacturing in Q2 2022 was 8.4%). [iv]

Case Study: **Hytec Castings**

Hytec castings make advanced lightweight aerospace components by casting aluminium in a small foundry in Coventry. Energy is their most significant cost after the metal itself: aluminium must be heated to around 700°C to shape.

They were unlucky that their fixed tariff contract ended in October 2022, and were unable to find a supplier willing to offer a replacement fixed tariff at all. Their incumbent supplier offered a spot rate of 70p/kWh for electricity (over five times the previous rate) but when the bill arrived the rate was £1.50/kWh (with a note that the government's EBRS scheme would pay 34.5p of this).

Strenuous efforts by their broker over the next few weeks finally resulted in a fixed tariff of 66p/kWh being offered by an alternative supplier – the only one of nine energy suppliers approached even willing to offer a contract.

All figures are p/kWh	EBRS (to March 2023)		EBDS (April 2023 - March 2024)			
	All businesses		All businesses		Energy and trade exposed businesses (ETII*)	
	Threshold Price	Max discount	Threshold price	Max. discount	Threshold price	Max. discount
Wholesale electricity	21.1	34.5	30.2	1.961	18.5	8.9
Wholesale gas	7.5	9.1	10.7	0.697	9.9	4.0
	Up to £18bn allocated Threshold price is the wholesale price above which discounts apply		£5.5bn guaranteed support to March 2024 Broader and more rational definition of ETII* Enhanced support triggered at lower rate than previously 70% demand cap on enhanced support *Energy and trade intensive industries. Energy intense WM companies which don't export as a sector are excluded			

Figure 3: Overview of UK Government Support to Industrial Energy Users 2022 – 2023

The distribution of impact across the economy is also largely arbitrary. The main determinant of exposure and impact is not whether a business is fundamentally good or bad, but whether a business had a fixed term contract that expired during the period of greatest volatility, and whether they then re-contracted for a fixed term under those conditions. Our evidence suggests that over the six months of greatest volatility about half of businesses in these circumstances did recontract on fixed terms. [3]

Analysis

The UK energy market is largely and understandably designed to ensure security of supply (this is discussed further in section 3). However, the unintended consequence of this is that the effects of global energy wholesale cost volatility are almost exclusively borne by end customers (see diagram).

Note that this diagram is itself a simplification. Within the 'suppliers' box shown, there may be multiple trading organisations. If we could physically follow the energy supplied to a single West Midlands company, we would typically find it has been traded 10-15 times before arriving at its destination. With each trade it is also typically aggregated with different groups of contracts, making it virtually impossible to see where profits are actually being made.

[3] *Based on anecdotal and survey evidence most businesses spending less than £500k a year on energy (more than 80% of West Midlands' companies) were on fixed contracts prior to the crisis, whereas those with bills of more than £5M will generally have sophisticated contracts with significant flexible elements, but by March 2023 only 60% of West Midlands businesses were still on fixed contracts (Chamber survey).*

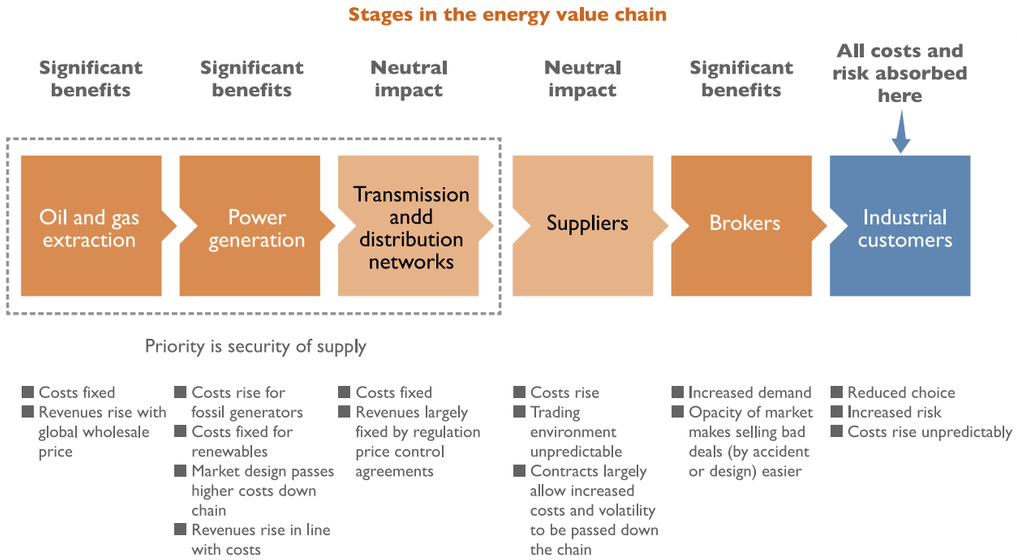


Figure 4: How does global energy price volatility impact the value chain

The main problem with the EBRS and EBDS schemes, particularly in combination, is that rather than mitigating the impacts of wholesale price volatility within this framework, they effectively exacerbate them. They do this for four reasons:

- the relative generosity of the initial EBRS scheme acted to mask the likely long-term impact of the very high prices prevalent from September 2022 to January 2023, encouraging firms to sign up for contracts that are unsustainable without the support;

- the requirement for the schemes to be administered by suppliers created confusion due to the variable way discounts were presented to customers;

- rather than increasing certainty for businesses and thus improving business confidence and investment environment, the switch from EBRS to EBDS created an additional step change in pricing for many businesses of similar magnitude to the market-driven volatility, and added a further layer of complexity and administrative overhead by creating a two-tier (ETII exemption) scheme;

- in an already uncertain environment, the late announcement of the scheme (9 January 2023) and lack of detail on the exemption mechanism (not announced until 27 March) increased the challenges facing businesses trying to make an increasingly business-critical purchasing decision.

The EBDS discount is also spread so thinly across the economy that it risks making very little difference to most recipients (1.9p discount on contracts of over 50p/kWh). Where affected companies are strategic links in supply chains or anchor employers in local communities (or conversely don't need the support because energy is still a small portion of their overall costs) there is no scope for focusing the limited support where it has greatest impact.

The response of other industrial economies can be contrasted with the UK (see appendix iii). Most advanced economies recognised that significant government support would be needed, but most also made sure this support was provided in a balanced way, in particular giving industrial customers some certainty about forward prices and spreading the costs fairly throughout the entire energy value chain.

For example, Spain and Portugal fixed gas prices for 12 months and Germany in particular has implemented a comprehensive scheme giving businesses a much higher degree of certainty on energy costs into 2024, with proposals to extend this to 2030. Other countries also exert greater direct control over strategic energy supplies. For example, in the immediate aftermath of the invasion of Ukraine, the German government took 'fiduciary control' over the operations of the Russian state-owned Gazprom subsidiaries outside Russia (these are based in Berlin, but include operations in the UK). In France, the state owns 90% of EDF Group, which is the largest electricity supplier, and 35% of GDF Suez, which is the largest gas supplier (also 23% of Engie). EDF is also the largest owner of renewable assets in the UK. [ii]

Taskforce position

While welcoming the funding budgeted by the Government for business energy bill support, the Taskforce would like to see a more balanced and targeted approach to supporting the businesses most affected by the crisis, specifically those locked into excessive and onerous fixed term contracts signed between September 2022 and January 2023.

Balance means some of the pain being borne by those who benefitted from the volatility, principally oil and gas companies, power generators and brokers.

A more targeted approach also means creating mechanisms which allow the limited funding available to be directed to the businesses of greatest strategic importance to the West Midlands, and those that support strategic regional and national supply chains.

The Taskforce considered the options of changing eligibility rules for EBDS, including abandoning SIC codes as a way of identifying energy and trade-intense businesses. However, we decided the whole scheme is wrong and tinkering with it is the wrong approach. Instead it should be replaced by a focus on releasing firms entirely from excessive contracts signed during the period of highest market volatility, from September 2022 to January 2023.

For similar reasons we rejected a regional hardship fund. This would simply replace one arbitrary distortion of markets (excess energy costs imposed depending on when your fixed tariff expired) with another (whether you could access a fund).

Finally, we reviewed 'Blend and extend' offers made by energy suppliers to industrial customers. These involve spreading the excess costs of contracts signed in autumn 2022 further into the future, and mixing this with further fixed tariff contracts at the lower prices now available. Customers object to this because it still involves them taking all the pain of the higher contracts. The energy supply chain still receives the full value of its contracts and the only cost it bears is the additional cashflow cost of delayed payments.

Recommendations

2.1 In addition to the windfall taxes already imposed on oil and gas companies, the government should ask energy brokers, suppliers and generators to release industrial customers from contracts signed during the crisis at rates greater than 50 p/kWh for electricity or 11p/kWh for gas and allow them to renegotiate at current rates. Any costs of doing this should be borne by the energy value chain as a whole (i.e., where a supplier releases a customer from a contract, the generator should also be required to release the supplier from any back-to-back contract).

2.2 Allow companies with outstanding Covid Business Interruption Loan Scheme obligations to write these off provided they invest the funds in onsite energy efficiency projects during 2023. This could be funded by re-allocating some of the spare funds available from the amounts budged by Treasury for EBDS and EBRS support, given the falls in wholesale gas prices in 2023.

3. An energy market offering Hobson's choice

The UK energy market has largely been designed by the energy industry for the energy industry, moderated by governments and regulators focused primarily on security of supply ('keeping the lights on'), competition (which appears sometimes to be almost purely for its own sake, as in creating potential for 10-15 trades between generation and supply of energy) and to a lesser extent on the needs of domestic customers.

The consequence is the unbalanced market design that created the inequities discussed in the previous section; a level of complexity that makes even the initiated shudder, and thus a high degree of likelihood that if we have another period of price shocks and volatility like last year's, the outcome will be exactly the same.

This section therefore looks at short- and medium-term ways to correct the imbalance of power in energy markets to ensure they work better for West Midlands industrial and commercial customers. It doesn't address structural issues, which also exist on both industrial customer and energy supply sides of the market. These structural issues are dealt with in the following sections.

The problem

Gas and electricity are relatively simple commodities from a business customer's perspective. A kWh of electricity from supplier A does exactly the same as a kWh of electricity from supplier B, and (once they've optimised their processes for energy efficiency) most successful companies have very little scope to change when or how they require this energy: when a customer wants a component or a cake the business has to produce one, and energy is needed.

And yet a typical industrial energy bill in the UK might contain more than 20 headings, many of which are acronyms, and few of which come with any accompanying explanation as to how the customer might be able to influence the associated price or quantity, why this particular line applies to this company, and who controls it. These headings change regularly, making it difficult to keep up. [4]

This complexity is almost entirely a reflection of the interests of the energy supply chain and government in the energy system, and has little to do with promoting customer choice (and hence real competition). It has obvious negative consequences for industrial customers.

Case Study:
Black Country Construction Products Supplier

A company employing 120 staff on two manufacturing sites in the Black Country was forced to outsource their high value-adding manufacturing activity to Poland as a consequence of the crisis.

They convert waste plastic into construction products. Instead of doing this in the West Midlands, they now ship the waste to Poland, where it is processed and made into the final products and then shipped back to the UK to be sold to customers. This keeps the company in business, albeit as a trading operation rather than a manufacturing operation, with fewer and less skilled staff.

Their energy bills have 22 lines, which their broker was unable to explain to them. The Finance Director described the process of procuring a new contract as 'complete guesswork'.

[4] At least fourteen different national schemes have been introduced in the past ten years (figure validated by DESNZ, 2023).

First, it makes comparing one commercial offer with another (or indeed with a particular company's anticipated needs) difficult and sometimes virtually impossible. Industrial customers either have to take the risk of effectively guessing which contract is best for them, or they have to invest time and money in acquiring the expertise necessary to make more informed choices (see page 21).

Most West Midlands companies are too small to justify full-time in-house expertise, so this creates a substantial market for brokers and intermediaries to operate between energy suppliers and customers – an additional cost for customers and an additional opportunity for unregulated market players to create confusion and inhibit competitive market outcomes.

The market is further complicated by credit risks, all the way up the chain. Market participation and access, particularly for futures contracts, depends on the balance sheet strength of parent companies and groups, so larger (or state-backed) companies have an intrinsic advantage and the smaller traders and suppliers who often specialise in the kind of companies and sectors characterising the West Midlands economy rely on these larger groups to access the wholesale market.

Several commercial intermediaries warned the Taskforce that interventions to support small businesses would add costly administration to the market, but it is somewhat ironic that the administrative complexity of any intervention is itself an outcome of the market design.

When wholesale markets become volatile or government introduce new schemes (often with exemptions) these add yet further criteria and complexity to bills. So these potential issues get even worse.

The fundamental case for this complexity is built around the benefits of competition. Competition drives innovation and reduces costs for customers, and so is theoretically in customer interests, provided the benefits of competition exceed the costs.

However, it is reasonable to ask whether this is actually the case in the UK commercial and industrial energy market, and especially for diverse mid- and smaller-sized businesses in the West Midlands.

The complexity of industrial energy bills does not generally reflect innovation or the development of products and services that are tailored to specific company needs; rather it reflects a mix of structural distinctions within the energy sector that only the regulator really understands; layers of government intervention over almost 30 years, and a process of progressively transferring any energy supply system risks or potential costs onto end customers. For example, if particular sectors are seen as credit risks or having particularly volatile demand profiles, this is costed into contracts - often without warning or explanation.

Without government intervention gas and electricity markets are natural monopolies. This is because only one set of pipes or wires are needed to transport the gas or electricity around the country, and whoever controls these controls the market (and can charge what they like and only allow access to generators, suppliers and customers of whom they approve).

Case Study:
The opaque supply chain for energy

The Taskforce followed the trail of contracts for several West Midlands businesses back to their source.

For one company facing energy bills of over £250k a year, they were aware of the name of their broker and the supplier he'd placed their business with. It turned out the supplier was buying in turn from a trader and they were buying from generators and the open market.

The trading company was unable to provide an audit trail further upstream, because the energy would typically be traded 10-15 times before reaching this point. Identifying who was making the real margins in this way is impossible.

Ofgem's remit

Ofgem is Great Britain's independent energy regulator. They work to protect energy consumers, especially vulnerable people, by ensuring they are treated fairly and benefit from a cleaner, greener environment.

They are responsible for:

- Working with government, industry and consumer groups to deliver a net-zero economy, at the lowest cost to consumers
- Stamping out sharp and bad practice, ensuring fair treatment for all consumers, especially the vulnerable
- Enabling competition and innovation, which drives down prices and results in new products and services for consumers

Source: Ofgem

Note that 'industry' in this text and generally in Ofgem publications means the energy industry – it does not mean industrial customers.

For this reason, the UK Government, since the 1980s, has used an economic regulator, currently called Ofgem, to manage the energy market. Ofgem's remit is to protect energy customers and ensure fair market outcomes (see page 21).

These objectives are partly delivered by structuring the market so that areas where competition should work (e.g., generation and supply) cannot be cross-subsidised and controlled by areas where competition cannot deliver cost-effective outcomes (e.g., transmission and distribution).

However, the sector still often behaves like a monopoly, with companies working together with government and Ofgem to design new standards and schemes, debate market design and engage with the public through its trade associations. These processes are notionally open consultations, but few industrial customers (or even their trade associations) can afford to invest the time and effort necessary to begin to understand most of the content.

Larger companies can cut through this complexity to a degree by retaining expertise in house to keep up with energy market developments and develop hedging strategies, for example. Smaller companies must rely on intermediaries to act on their behalf.

However, regulation of these intermediaries lies outside Ofgem's brief: the 'third-party intermediary' market is effectively unregulated. The Taskforce met both good and bad intermediaries as part of its research (also genuine intermediaries who thought they were doing a good job, but in practice had a very narrow understanding of what they were selling, and no capacity to interpret the implications of global energy price shocks to their clients). Brokers largely differentiated themselves through focusing on specific market segments (e.g., small hospitality businesses; manufacturers etc) although otherwise we found no great evidence of innovation. Many trade associations have relationships with recommended brokers offering a degree of quality assurance to their members. These all engaged constructively and helpfully with the Taskforce.

There are clear analogies to the financial services market: the intermediary market operates based on relationships and trust, and for most customers is characterised by commodity products (pensions, electricity) wrapped in complex regulatory and risk 'wrappers'. Like pension contributions or taxes or investments, monthly energy bills can appear relatively small, but they are long-term and inescapable, allowing intermediaries to make a good living by taking a fraction of the value over time.

One of the major challenges the Taskforce found in engaging with both intermediaries and suppliers is that this is a market where responsibility is difficult to pin down. After 10-15 iterations of aggregation and trading, any individual contract with an end customer is lost in a morass of deals, each adding further contract terms and protections for the various market participants.

When challenged on rigid contract terms, intermediaries point at suppliers; when challenged on inequitable contracts, suppliers point at other suppliers, traders and generators or the regulator; when challenged on lack of regulation of intermediaries, the regulator points at government.

Analysis

Simpler, more comparable contracts to end users are clearly needed to promote competition and enable customers to exercise a fair degree of market power and influence energy sector behaviour. There are two ways of achieving this simplification.

The first is via simple regulatory intervention similar to that characteristic of financial services, pensions, or equity markets – all of which have similarities to energy in that the core commodity (money) is actually quite simple. For example, some basic transparency rules could be applied to all contracts by requiring charges to be grouped and presented in standard ways, for example making clear which elements can be controlled or negotiated by customers and which are fixed by others, and the degree of risk involved.

Such regulation needs to be enforced to be effective, and this is a role that might potentially be filled most cost-effectively at regional level (like trading standards).

The second is by working as a region or industry groups with a willing commercial energy supplier or broker to offer such contracts – essentially entering the market with a focused West Midlands regional offer. Many trade associations and business organisations already go some way down this line by having exclusive relationships with trusted brokers that they make available to their members, and the evidence from the Taskforce's surveys is that this does result in more competitive outcomes for members. Further development of this approach might include bundling energy efficiency services, infrastructure support or other services (possibly financial products) specifically targeted at the needs of West Midlands firms.

This kind of model could also usefully be encouraged by providing indications on bills of the degree of additional cost that is included purely due to the customer's size or sector.

This could be a purely private enterprise, or it could be a public-private partnership, or a non-profit or anything in between. There are advantages and disadvantages to each model. International comparators suggest heavily commercial models with a degree of public ownership can work well, although the UK track record in managing these kinds of entities is poor.

Another interesting option is provision of energy services down supply chains, essentially brokered and managed by the OEM at the top of the chain (e.g., companies like JLR or Mondelez in a West Midlands context). This is a model that we understand has previously worked successfully in the retail sector, for example, where major supermarkets have brokered deals for their suppliers with energy companies and have essentially offered their larger balance sheet to reduce costs for all. This approach has the virtue of minimising and equalising energy cost risk down supply chains, reducing the cost pressures or potential for supplier failures that otherwise follow from circumstances like those of 2022.

Taskforce position

The Taskforce considers that simple regulation of energy brokers is long overdue and should be implemented immediately, including a basic accreditation scheme and contractual standards enabling fair comparison of contracts. We considered regional level models for this but felt the initial focus should be national, to give the regulator sufficient strength. It must be effectively resourced.

A West Midlands or OEM-led energy intermediary or partnership with an energy supply company is theoretically attractive but practically fraught with difficulty. It will work best in partnership with the public sector (in principle offering immediate assurance, rapid market access and potential to shape critical local infrastructure decisions in ways that support industrial competitiveness and economic growth). However, attempting public-private partnerships of this kind in the UK introduces substantial cultural and organisational challenges, and any regional enterprise in the UK needs to overcome the fundamental challenge of its best customers constantly being targeted and defecting to global or national competitors with much deeper pockets.

In the medium-term, improving the skills of West Midlands businesses in the UK energy market should also deliver benefits, reducing the need for intermediaries altogether and improving market outcomes.

Recommendations

2.2 Ofgem's remit should be extended to cover all but the largest businesses (i.e., those with balance sheets enabling effective energy market participation) and resourced[5] with powers to regulate the third party intermediary (commercial energy broker) market. This should include responsibility for an accreditation scheme for brokers and creation and enforcement of standard industrial energy contract forms.

2.3 The WMCA should commission a feasibility study into the potential for a regional industrial energy services company, to be delivered in partnership with one or more energy suppliers and regional industry bodies.

2.4 Regional business support and skills programmes should be enhanced by the inclusion of energy management skills.

[5] Possibly jointly by industry and government, or via a levy on brokers.

4. Barriers to energy resilience

If every West Midlands industrial company implemented existing, economic, and proven energy efficiency improvements this would cut regional industrial energy bills by at least £200M a year. The figures are similar for service and hospitality sectors.[6] West Midlands industry would be 10% more competitive and resilient and the impact of energy price shocks would be proportionately lower. But little happens.

These facts have been known for many years, and in an attempt to address the obvious evidence of market failures successive governments have invested in institutions like the Carbon Trust; business support and energy efficiency awareness programmes (such as the ERDF projects described in our interim report); and regulations and schemes such as the Energy Savings Opportunities Scheme (ESOS) and the Industrial Energy Transformation Fund (IETF) with very limited impact.

Why is this, and can anyone do anything different to address this in the short term? This is the subject of this chapter.

The Problem

Industrial energy efficiency investments permanently reduce the exposure of industrial companies to energy price shocks and generate sometimes significant returns on investment. This Taskforce was quoted multiple examples of companies that had invested in sub-metering, for example, and made relatively simple adjustments to operating processes as a result (for example reducing pre-heating cycles, or turning off machinery between batches or over weekends).[7]

The underlying (technical) solutions are generally well-known and established. In addition to better monitoring and sub-metering (which will cost a typical West Midlands manufacturing facility £5-£20,000 but probably pay for itself within six months through cost-less changes in management and operating practices) typical technologies that might be applied to industrial processes include variable speed drives; better insulation on process equipment; voltage optimisation; power factor correction; improved process control; heat recovery; and on-site power generation from solar, wind or waste-to-energy schemes.

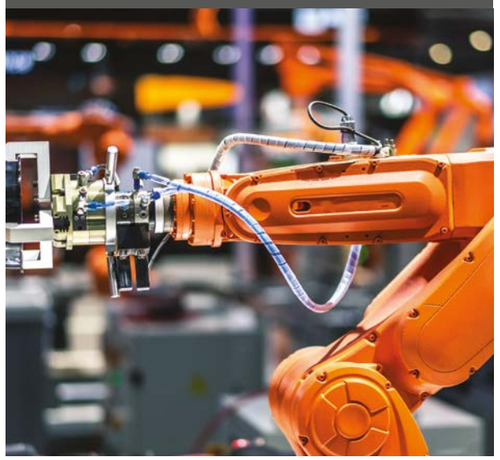
[6] *https://www.carbontrust.com/news-and-insights/news/making-the-business-case-for-energy-efficiency.*

[7] *Sub-metering is used to describe collection of energy usage data at the level of individual machines or production lines in factories. It is significantly more powerful and effective in driving energy efficiency improvements compared to smart metering, because it allows managers instantly to identify areas of greatest energy spend and prioritise investmentsaccordingly.*

Case Study: **Thomas Dudley**

Employing over 500 people across multiple sites in the Black Country, Thomas Dudley is a highly successful manufacturer of plastics and metal products for the construction and engineered castings sectors.

By implementing sub-metering across their business - more than 40 submeters across four sites providing energy data at departmental and plant level - and feeding this data directly to the CEO's desk, they have successfully identified and invested in projects that have reduced carbon emissions and energy use by almost 50% since 2019.



The evidence therefore points towards non-technical barriers and market failures. This was substantiated by evidence gathering sessions and discussions with companies across the region. Issues include:

- Limited investment capital. Companies typically choose to invest this directly in projects that grow sales and build their business.
- Access to suitable finance. Specifically relatively short loan terms for smaller companies when the return on energy efficiency investments can be both longer-term and unpredictable.
- Lack of suitable skills; finding the right skills to implement energy efficiency projects is particularly challenging in manufacturing because a critical requirement is often that the people concerned understand the specific manufacturing process of the company concerned as well as the energy efficiency technologies, and is able to integrate these. The performance and design of manufacturing processes is typically business-critical and sometimes secret, so the risks of interventions (that theoretically save energy but certainly change a well-proven and critical process) are also significant.
- Landlord-tenant responsibilities. Often companies have limited scope to address energy efficiency as landlords refuse to invest (e.g., in projects that require changes to buildings such as onsite generation).
- Supply chain constraints. Lack of access to the necessary equipment and contractors, often because these are scarce and tend to focus on the higher margin larger projects for bigger customers.

The skills issue exacerbates challenges on the supply side, specifically that the limited number of experts offering services to support manufacturers in energy efficiency have little incentive to try and sell their services to smaller and mid-sized firms because the costs of making a sale often exceed any margins they might make on the scale of savings available. If the customer also needs to be educated, these costs rise.

Analysis

Most attempts to intervene in this market and address these well-known market failures for West Midlands industry have very limited impact because they focus on the wrong targets in the wrong way.

Ninety percent of industrial energy use is in manufacturing processes and associated activities, such as drying, refrigeration and electric motors (for example, used to drive robots and production lines, see figure 5). Yet the vast bulk of business energy efficiency advice and support focuses on buildings and lighting – around 10% of the problem. It is addressing the wrong problem, and doing little for regional resilience.

Buildings (space heating, hot water, cooking and IT) and lighting are tempting targets for energy efficiency support schemes because they are amenable to broadly standardised solutions (e.g., LED lighting, wall insulation, heat pumps) and standardised assessment techniques and auditors. As you might expect, buildings, lighting (and cooking) also account for around 85% of energy use in the services and hospitality sectors, as well as 100% of energy use in the domestic sector, so the market for solutions for these applications is significant.

However, interventions designed to address buildings will never do much for industrial resilience because they cannot possibly address more than 10% of the industrial problem. Industrial energy efficiency truly is the Cinderella of the energy efficiency world (itself traditionally a backwater of the energy sector). Not only does industry only represent 25% of the market for energy efficiency services compared to the 75% covered by domestic and office buildings; it is also a much more complex, fragmented and hard-to-access market.

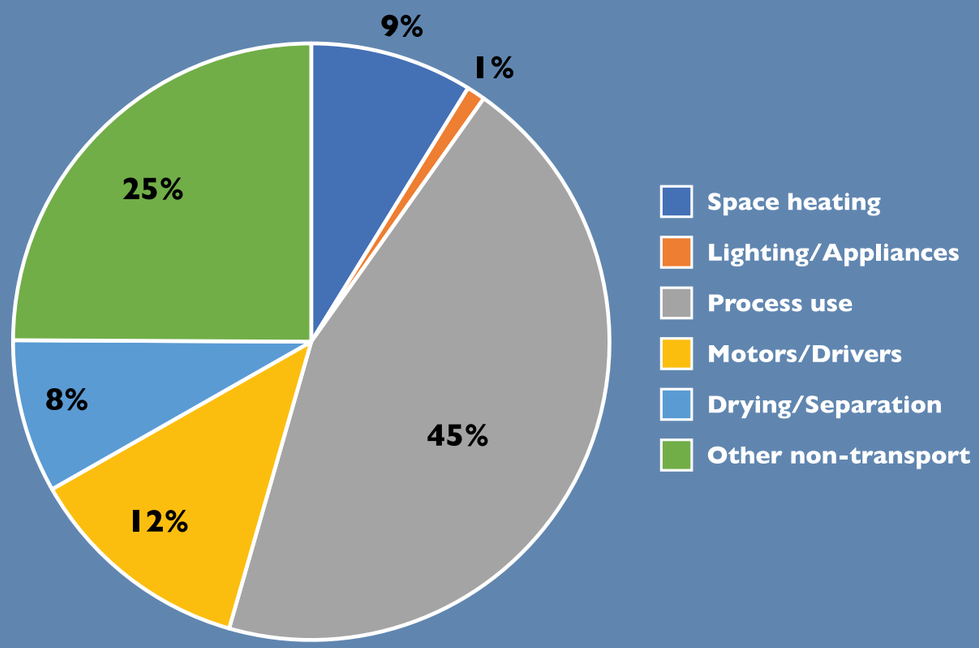


Figure 5: UK Industrial Energy Use by Application*

**Source: Energy Consumption in the UK 2022, Table U1, Department of Energy Security and Net Zero 2023.*

Government have already recognised this to a degree, by establishing a substantial Industrial Energy Transformation Fund (IETF)[8]. However, this is very clearly targeted at relatively large businesses (the grant size starts at £100k and can be up to £14M per project). The evidence gathered for this taskforce suggests access to this fund by West Midlands businesses is limited to a handful of firms, partly because the minimum grant size is too big, and partly because the application process is so complex and onerous it is beyond the reach and far too risky) for most West Midlands firms.[7]

From a West Midlands perspective there is therefore a need for more specialist and targeted schemes specifically aimed at and designed for industrial process energy efficiency in the smaller and mid-sized firms that characterise our region and who are typically investing in projects at a scale of £250k or less.

[8]A third phase of this has recently been announced, with £185M allocated in addition to £315M already spent.

Taskforce position

There is a strong public interest in improving the economic resilience of the West Midlands, and a clear benefit case for public intervention to eliminate market failures. There is also a clear gap in provision between the IETF on the one hand (which reaches large industrial sites) and large-scale business energy efficiency schemes (which tend to focus on buildings and lighting and largely serve the needs of non-industrial business sectors).

Last summer the Taskforce proposed a programme to take advantage of existing West Midlands expertise and networks in business energy efficiency support and are delighted this has been taken up by both DESNZ and the government's Energy Efficiency Taskforce. We fully support both proposals and especially the proposal to fund an immediate £25-£30M pilot programme in the wider West Midlands through the Devolution process.

These programmes should be accelerated as far as possible, and make use of existing regional delivery partners. Our view is that regional delivery of business support programmes is likely to be significantly more efficient and effective than national delivery structures. This is because engagement is most efficient both for government and businesses by leveraging existing networks and relationships, which are typically local for the majority of the target demographic. The businesses that can be engaged nationally are those who can be served by commercial providers: the market failures exist for those that cannot.

Programmes can also be supported by simple messaging to raise awareness of schemes through easy-to-access and costless channels, such as by requiring energy efficiency to be referenced on supplier bills, or linking access to financial support schemes to reductions in energy use. [9]

In the medium-term, financial products and network connection protocols should be developed to support diverse and smaller manufacturing businesses with government support. For example, the Taskforce heard evidence of standard contracts available in some European countries that allow one firm to sell excess power to its neighbours without incurring the costs and risks of developing a bespoke power purchase agreement for every such deal (as would be the case in the UK).

Manufacturing skills programmes should also include energy efficiency as a core skill at all levels.

Recommendations

4.1 Accelerate the proposed £25M West Midlands Business Energy Efficiency Pilot, emphasising the role of sub-metering and the importance of regional delivery structures.

4.2 Work with the national Energy Efficiency Taskforce through to supplement this pilot with private finance and energy services offers from global corporates.

4.3 Work with electricity network operators to streamline the connections process for industrial customers, including establishing a joint energy infrastructure panel with powers to prioritise reinforcement investment to support strategic industry across the region.

4.4 Enhance existing manufacturing skills and education programmes by ensuring these include modules on industrial energy efficiency.

4.5 Support and promote national industrial energy efficiency awareness schemes focusing particularly on ensuring these reflect the realities of industrial energy challenges (rather than purely on the challenges of optimising building energy use). One effective way to promote awareness of energy efficiency would be to require appropriate messaging (e.g., of the value of sub-metering) on bills.

4.6 Give industrial customers a right to require landlords, planning and regulatory authorities to support energy efficiency investments where commercial returns can be demonstrated

4.7 The WMCA should work with Ofgem to develop and pilot standard contracts and mechanisms for power and connection sharing and trading between neighbouring companies (i.e., so company A can sell its solar output to neighbours) similar to schemes such as standard forms of local PPA contract available in central Europe.

[9] Many competitor economies have set thresholds for receipt of support, for example, 80% of previous year demand in Germany.

5. Energy policies undermining industrial competitiveness

Up to this point, this report has taken the structure and mechanics of the UK industrial energy market as fixed, and focused on ways of working within it to improve outcomes for industrial customers. But many West Midlands manufacturers – in common with organisations and institutions such as UK Steel and the Financial Times (and the analysis of this report) - will tell you that the structure and mechanics of the UK energy market are themselves part of the problem and need addressing. [x]

This section focuses on how thirty years of UK energy and industrial policy has created systemic handicaps for West Midlands industry seeking to compete in global markets, and what might be done to correct this.

Changing market structures and mechanics are not short-term measures, but without addressing the underlying fundamentals more immediate actions will ultimately be wasted.

The Taskforce has focused on three long-standing challenges for West Midlands businesses:

1. Systemically-biased allocation of energy system costs, penalising the mid-sized energy-intense businesses of the West Midlands in particular.

2. Lack of timely and cost-effective access to appropriate energy infrastructure.

3. Lack of alignment between national and regional energy infrastructure investment and viable local or national industrial strategies.

In addition, the general complexity of the market and inability to identify who is benefitting from the clearly inequitable contracts discussed in sections 2 and 3 above also needs to be addressed. A more balanced and transparent UK commercial and industrial energy market is in the wider interests of the economy as a whole.

The problem

UK industrial electricity prices were already among the highest in the world before the crisis of 2022 hit the market (see figure 6). [10]

At the same time the UK government and energy regulator have claimed for many years to be world leaders in creating a competitive energy market, and the virtue of competition is supposedly to drive down prices, so how can these two facts be reconciled? [xi]

The answer lies in the reality that only a very small part of the industrial energy price is genuinely subject to competition. Much of the rest is allocated policy and infrastructure costs, including levies to pay for historic schemes to support investment in new generation assets such as nuclear power or wind farms. There has been no return on this investment for the industries that have paid for it. Since at least 2000, the UK has been highly adept at adding these levies to non-domestic bills in particular. These don't appear as 'taxes' in the UK bar in figure 6, but the function is the same: to pay for historic public liabilities

[10] Gas prices are much more competitive, but this needs to be put in a context where all UK firms are coming under increased competitive and political pressure to decarbonise, which for the bulk of West Midlands manufacturers means switching from fossil gas to clean electricity.

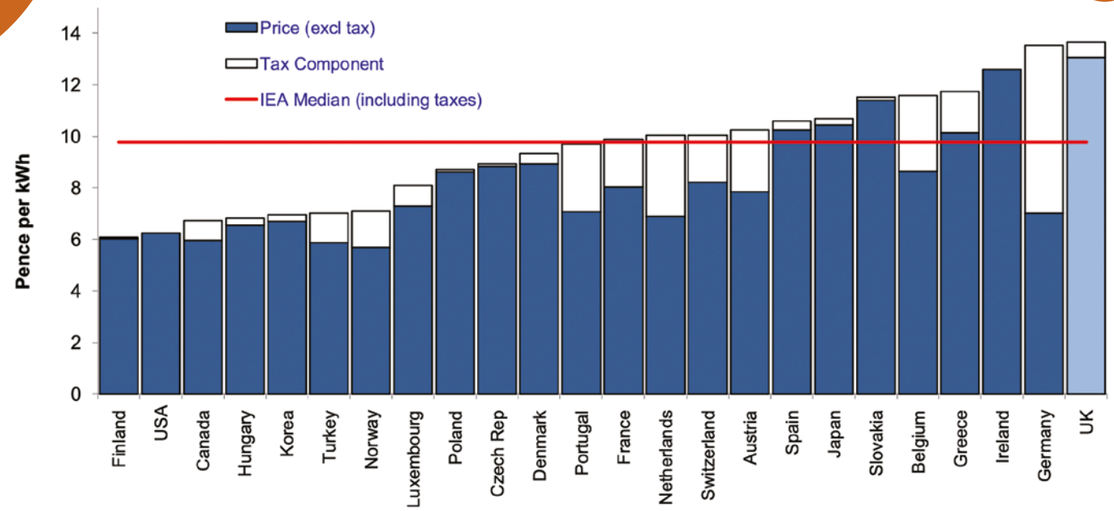


Figure 6: Comparative International Industrial Energy Prices

Source: International Energy Agency (2021)

The consequence is that the two apparently incompatible claims (uncompetitive industrial energy prices and competitive energy markets) are both broadly correct. This points to a simple underlying truth: the UK has a relatively strong energy policy and a relatively weak industrial policy.

When a relatively powerful consumer lobby is added to the mix, the outcome is skewed allocation of energy policy costs to industry rather than domestic customers, as demonstrated by figure 7 below.

	Unit electricity prices p/kWh		ratio
	Domestic	Industrial	Dom/Ind
Sweden	13.57	4.91	**2.76**
Finland	16.42	6.08	**2.70**
Denmark	24.74	9.32	**2.65**
Spain	22.68	10.6	**2.14**
Belgium	24.59	11.59	**2.12**
Germany	27.63	13.51	**2.05**
Luxembourg	16.34	8.1	**2.02**
Portugal	18.31	9.68	**1.89**
Austria	18.57	10.24	**1.81**
Ireland	21.55	12.61	**1.71**
France	16.62	9.89	**1.68**
Italy	22.67	14.5	**1.56**
UK	20.28	13.66	**1.48**
Greece	16.49	11.74	**1.40**
Netherlands	13.84	10.02	**1.38**

HIGH

LOW

A high ratio of domestic to industrial prices suggests greater support for industry within the national energy system.

Figure 7: Ratio of Domestic to Industrial Electricity Costs across Europe

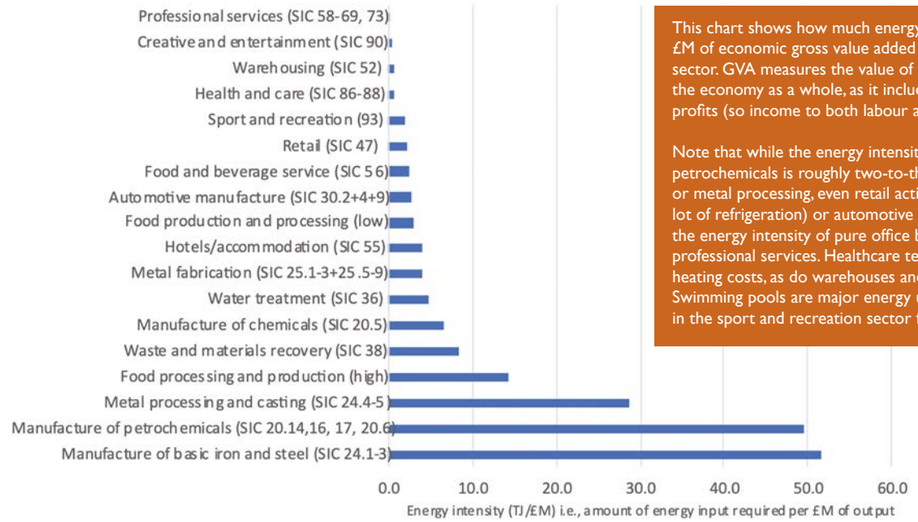
Source: Energy Matters, 2017. http://euanmearns.com/energy-prices-in-europe

To make matters worse for West Midlands manufacturers, their diversity and scale (i.e., there are large numbers of relatively small companies) has historically limited the effectiveness of any lobbying for exemptions or special treatment with central government. This contrasts with sectors like steel and petrochemicals, which have been relatively successful in securing limited exemptions and special treatment.

Just because West Midlands companies are small doesn't mean that energy costs are not critical to their international competitiveness.

Figure 8 shows the relative energy intensity of different manufacturing sectors.

The West Midlands economy is dominated by sectors with energy intensities of between 2 and 30 TJ/£M GVA. For many of the companies in these sectors, energy represents 10-30% of their costs.). When these costs are 40-90% higher than an identical operation in a neighbouring country their ability to compete globally is clearly significantly handicapped.



This chart shows how much energy (in TJ) is required per £M of economic gross value added (GVA) by industrial sector. GVA measures the value of an industrial activity to the economy as a whole, as it includes both labour costs and profits (so income to both labour and capital).

Note that while the energy intensity of steel and petrochemicals is roughly two-to-three times that of food or metal processing, even retail activities (which often use a lot of refrigeration) or automotive assembly are 10-20 times the energy intensity of pure office based sectors such as professional services. Healthcare tends to have high space heating costs, as do warehouses and entertainment venues. Swimming pools are major energy users and this is reflected in the sport and recreation sector figures.

Figure 8: Comparative Energy Intensity of Different Industrial Sectors

Access to energy networks can also be a significant issue for West Midlands companies. This process is governed by regulations that require the network companies to process enquiries in the order in which they are received, independent of the quality, scale or local strategic importance of the applicant. In practice this means that available capacity can be held unutilised because a large speculative housing or transport development is first in the queue, while a local manufacturer desperate to expand production is forced to invest offshore.

The local distribution network operator used a restaurant analogy to explain this to the taskforce: 'If a restaurant has one table remaining for two people, and a family of four waiting when a couple arrives, it will allocate the table to the couple and allow them to jump the queue because they fit the available capacity. Electricity networks are not allowed to do this: they can't serve the couple even if they have capacity, because they are legally required to serve the larger group first, even if this takes months or years.' [11]

[11] *Quote from interview with a senior network manager.*

The Taskforce found examples both of manufacturers unable to connect large solar arrays to mitigate energy cost rises and companies where new investment had been delayed by over a year by network companies for these reasons. We also found examples of locally-significant manufacturing investments which drifted quietly out of the region because no mechanism existed efficiently to prevent this (see box).

Many of the costs that appear on West Midlands industrial energy bills also relate to national infrastructure investments in energy assets outside the region. For example, over £20bn is currently being invested in offshore wind, nuclear power (which is always on the coast) carbon capture and storage and hydrogen schemes (see appendix v).

To an extent, sharing these costs evenly nationally appears reasonable, as all benefit from the security of supply that a national energy system provides and the environmental benefits of clean energy. However, it is also reasonable to observe that the bulk of heavy industry which is exempted from the costs of these investments is also coastal; the direct economic benefits of the investments in terms of new jobs created are coastal; and the availability of new clean energy infrastructure gives coastal regions a decade or two's advantage in ability to attract global industrial investors.

Many of these issues are currently being considered by a national review of electricity market arrangements ('REMA') being led by the Department of Energy Security and Net Zero (DESNZ). However, this is expected to be a lengthy process and is unlikely to result in any meaningful changes for at least another two years. More urgent action is required. [xii]

Finally, much of the West Midlands' industry is located in this region because of the historic availability of very low cost energy sources – extensive accessible coal reserves. This is not a viable source of future energy in a decarbonised world, which means there is a mid- to long-term industrial transition problem that requires a strategic approach to avoid unjust and undesirable political and economic outcomes. A middle way is needed between two potential extremes of seeking to defend an unsustainable historic status quo and seeing continued wanton destruction and loss of skilled jobs and businesses to competitor economies.

Case Study: **Supplier to the Global HGV Sector**

An established first tier supplier to global HGV manufacturers, employing over 1000 people, diverted a £20M investment outside the West Midlands due entirely to connection constraints at its Birmingham plant.

Headline investments like gigafactories attract political and sometimes national attention to support necessary infrastructure costs, but it is the many smaller £20M or less investments that are diverted which undermine the economy of our region.

These smaller investments need access to effective local political processes and prioritisation mechanisms to allow our regional economy to compete effectively globally for investment.

Analysis

The design of UK energy markets undermines regional and national economic competitiveness because UK energy markets have largely been designed by the energy sector for the energy sector and in the absence of any meaningful national industrial strategy for over 40 years.

The industrial voice, particularly that of the diverse medium and smaller manufacturers typical of the West Midlands, has been significantly weaker in this design process than that of energy companies and domestic consumers, or that of the large corporates who control the steel and petrochemicals sectors. It has also become progressively harder even to enter this debate over the last 20 years as the complexity of the markets has increased.

As a consequence, national energy infrastructure and transition costs (as well as the impacts of market volatility and other non-commodity costs imposed by energy sector intermediaries) fall more heavily on energy-dependent West Midlands manufacturers than on any other economic demographic.

At the same time, every one of the 10-15 intermediaries who are trading on every West Midlands company's energy supply before it reaches the final customer is making a margin of some form, and they are largely protected from scrutiny or recourse by a mist of market regulations, contract structures, contract aggregations and hedging strategies that dilute responsibility until it vanishes completely.

The broad options to address these difficult issues include:

- Additional compensation for West Midlands industry, based on geographic location rather than industrial sector;
- Institutionalising a stronger voice for mid- and smaller-sized manufacturers in energy market design (although this doesn't deliver short-term solutions);
- Simplifying energy markets through reforms such as more locational pricing, delinking gas and electricity prices, allowing regional and local authorities some say in prioritising network connections;
- Restructuring the energy sector entirely, to reduce the number of parties involved or to take a degree of public ownership of some of the more strategic elements, so that as a minimum some of the margins can be recycled or capped (the approach that many other countries, including US states and Asian economies as well as our European competitors appear to follow);
- Ringfencing some or all of the energy supply for West Midlands industry and delivering this through a new regional industrial energy or power market, eliminating many of the intermediaries and also enabling smaller West Midlands businesses to benefit from access to lower cost generation assets and potentially greater wholesale market access (this would require partnership with an energy major or support from the public sector);
- Supporting the West Midlands in developing and implementing an effective market-based transition for its economic base, recognising the substantial challenges this entails.

Taskforce position

This situation is unsustainable and wrong, and needs to be corrected in the economic interests of the UK.

Solutions such as special compensation for West Midlands firms (direct subsidy via a regional levy exemption for example) risk being arbitrary, contested and inadequate. They are also not market-based and could easily inhibit industrial competitiveness in their own right. They have no fundamental impact on market design and thus fail to address the underlying issues. We therefore reject this approach.

A stronger industry voice is clearly needed, but this needs to be supported across the system and not only by industrial companies. The Mayor could potentially play a significant role, but with over 160 known trade associations operating across the region this will be very challenging. He should however, have a clear role in representing the economic interests of his region to energy infrastructure companies and should have powers to prioritise investments in some way. The WMCA is already working on developing such mechanisms in partnership with the network companies and government.

Early signs from the current 'Reform of Electricity Market Arrangements' (REMA) process are that it will do little either to address the issues set out in this chapter or to simplify market design in general. For example, it appears likely that industrial electricity prices will continue to be linked to gas prices, and locational pricing will not be implemented. [12]

Given the challenges of getting a legitimate, informed and representative industrial voice effectively heard in the energy sector and the strategic importance of energy-intense manufacturing and supply chains to the West Midlands and UK, the Taskforce therefore support more market-based and faster approaches such as structural ringfencing of a portion of the national power generation pool specifically for industrial energy users – an industrial power pool distinct from the retail energy market.

This idea has been promoted recently by Professor Michael Grubb of UCL and the Aldersgate Group, and West Midlands industry would be an excellent potential early adopter of such a scheme. The work of Professor Grubb and his team suggest such a scheme could be implemented nationally with minimal (i.e., imperceptible) impact on domestic energy prices, and while ultimately national regulatory change might be required to underpin the most efficient and robust markets, there are clear opportunities for industry-led initiatives that may not need any public sector support at all. [xiii]

However, some recognition from government that a degree of management of regional economic transition is required would be welcome and helpful in terms of building the necessary commercial coalition. This might range from support for industrial development of a Grubb-type model for the region, underwriting of specific aspects of such a scheme (e.g., credit risks) and inclusion of energy infrastructure considerations in models such as investment and levelling up zones.

Most of the other options discussed here require institutional rather than policy reform (i.e., West Midlands industry cannot have a voice in market design and operation without a recognised and representative institution to provide this). This will be discussed in the next and final section.

Recommendations

5.1 WM industry and energy companies should work together to establish a dedicated West Midlands industrial power market offering WM firms competitive energy costs. This would be achieved by forward buying the output of fixed and low cost generators (wind, solar, nuclear) to match a sensible portion of aggregated regional industrial demand. The region through the Mayor and WMCA should underwrite some of the risk of making this market.

[12] These statements are based on discussions with major energy supply companies and industrial intermediaries.

6. Institutional and cultural failures at every level

Urgent issues can be addressed by short-term subsidies and better regulation; market failures can be reduced by well-designed interventions; the energy market can be rebalanced through fundamental reform, but if the institutions and culture of the UK and West Midlands are unfit for the modern world, any short-term improvements will soon be overwhelmed. Even if all the preceding recommendations of this report were adopted, therefore, there would remain a high risk that any benefits would rapidly be eroded as the world continues to generate challenges and our local, regional and national institutions fail to rise to meet them.

This section therefore briefly reviews some of the deeper cultural and institutional challenges facing West Midlands industry in relation to industrial energy issues, and proposes a few ideas as to how they might be addressed, while recognising the challenges are substantial and these can only be part of a wider picture.

The problem

Industry is the lifeblood of any economy and society, but in the UK significant elements of the industrial voice have become increasingly divorced from much public and political debate. In the industrial energy sector this is reflected particularly in a lack of mutual appreciation of challenges and meaningful engagement between the private sector, local, regional and national authorities and infrastructure providers. These issues are most acute for mid-sized businesses in the West Midlands.

This results in repeated stand-offs where the energy sector and government is blamed for competitiveness challenges by industry, while at the same time the energy sector and government can legitimately point to public consultations and engagement activities that industry largely failed to attend.

Further symptoms identified by the Taskforce include:

- minimal local industrial engagement in strategic energy infrastructure planning decisions, even at distribution network level, while at the same time companies routinely blame network operators for obstructing economic developments and investments and network companies spend significant resources on consultations that few relevant stakeholders attend;

- local area energy plans and environmental strategies that typically skim over industrial emissions and contributions as either too difficult, or somebody else's problem (quite often a completely abstract somebody else, called 'the market');

- allocations of energy system costs to industry that reflect the relative power of specialist lobbies in London rather than the outcome of a transparent and healthy political process;

- local and regional authorities developing and implementing significant economic development plans that assume necessary energy infrastructure requirements will be met without appreciating either the needs of the desired industrial investors or the ability and plans of infrastructure providers to deliver these;

- the complexity of the energy sector itself, as repeatedly discussed in this report, that makes it virtually impenetrable to the uninitiated, and discourages meaningful engagement by either private companies or public bodies – it is a highly introverted sector with markets, regulations and mechanisms largely designed for the energy sector by the energy sector, with only a superficial gloss of economic supervision at a dangerously abstract and theoretical level from Whitehall.

Analysis

The fault is clearly not all on one side. There are three broad interest groups involved: the energy sector, industrial companies and public authorities, and each operates within a framework that focuses on different time horizons and priorities.

The energy sector is driven by regulation and compliance and thinks in asset lifetimes of decades and regulatory cycles of five years or more (particularly the infrastructure part of the sector).

Industrial companies are focused on their investors and competitive markets that increasingly work in hours and minutes rather than decades or years. Investments and projects are expected to pay back within a few years at most, and strategic horizons beyond 12 months are risky. These time horizons tend to condense the smaller the company; the deeper it lies in a supply chain; and the less capital-intense the business.

Public authorities are concerned both about representation and the long-term futures of their geography, so think strategically and in terms of numbers and weight of immediate voices. This makes them more comfortable with direct public consultation, dealing with other public institutions and with the larger industrial employers in their areas.[13] Mid- and smaller-sized companies are represented in this process through organisations such as trade associations and chambers of commerce. The representative role of these intermediaries is understandably dominated by the needs of the bulk of their members, who are typically micro-businesses.

As a consequence, the industrial voices that both public bodies and the energy sector tend to hear loudest are those of the largest businesses and those of the smallest. The voice of the mid-sized industrial enterprise gets lost, and industrial policy often appears designed as if UK industry consisted solely of a small number of global companies and a large number of micro-businesses, with nothing in between.

While unit energy costs have remained stable and low (as they have for most of the past 40 years) not many companies have worried too much about the implications of this on their energy costs. For the bulk of the economy, pre-crisis energy bills were typically less than 1% of sales, so energy issues tend only to reach the boardroom when trying to connect a new site to the networks or perhaps when environmental initiatives and corporate social responsibility create an internal focus on investments. Engaging with highly esoteric and detailed energy market design debates was unlikely to gain any degree of priority.

The exception to this has always been the metals, ceramics, speciality chemicals and construction products[14] sectors. These sectors are characterised by relatively large numbers of mid-sized and smaller (compared to steelworks) but well-established and capital-intense firms. There is a higher concentration of these firms in the West Midlands than any other UK region (see figure 9). [xv]

[13] Typically a small number of the largest industrial energy users – primary metal processing such as steelworks and aluminium smelters; petrochemicals and cement works (about 200 sites nationally). Such sectors have successfully lobbied for exemptions and exceptions to reduce their energy costs, which typically accounted for more than 20% of their turnover pre-crisis. There are no such businesses in the WMCA geography, and only one (Cemex) in the wider West Midlands region.

[14] Manufacture of bricks, tiles and similar which are energy intense processes using kilns; or plastic products requiring heat to mould and shape the plastic.

The energy crisis has now created a wider pool of interest in the topic, but this Taskforce came into existence precisely because there was no recognised and competent representative industrial and commercial body with a sufficient understanding of the UK energy market either regionally or nationally.

The challenge is, therefore, to find a way or ways to create a suitably representative and informed organisation that is seen as legitimate by all three interest groups (the energy sector, public sector, and industry itself) that can manage a meaningful political conversation between the three groups to secure the best outcome for the region and country.

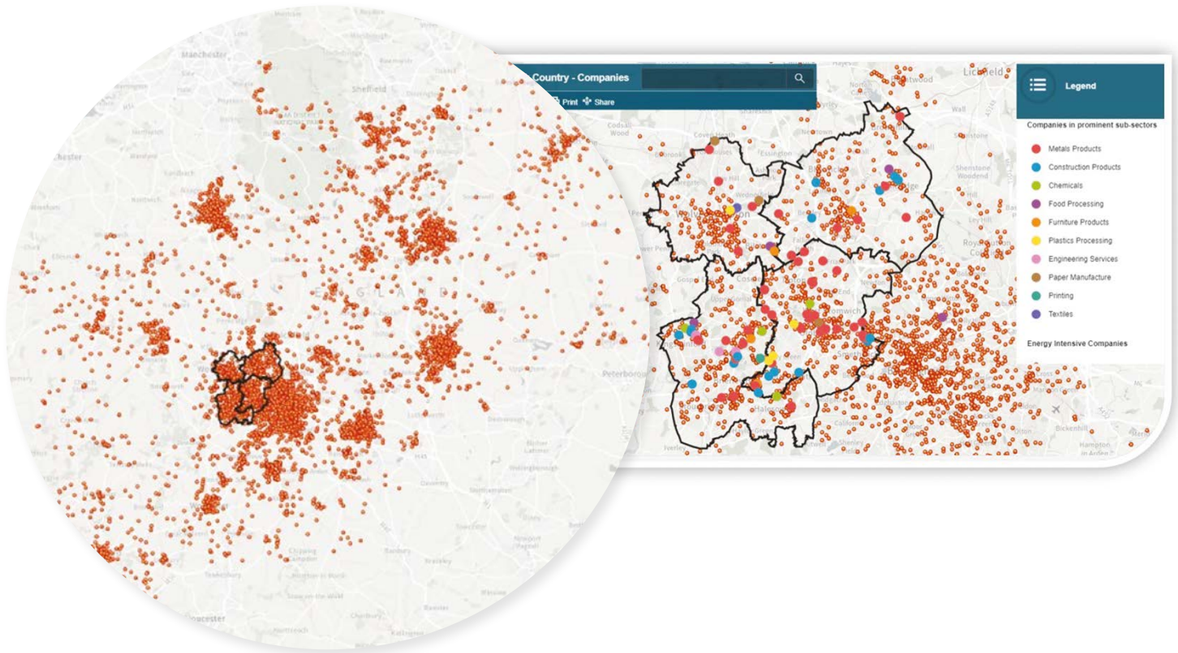


Figure 9: Spatial Distribution of Energy-Intense Businesses in the West Midlands

Source: BC EIU/Repowering the Black Country

Taskforce position

This is not a problem solely for the public sector, nor the energy sector, nor mid-sized West Midlands industry, although all three groups share some of the blame for the position in which we find ourselves. All three need to be part of the solution.

Increased public sector (or energy sector) capacity alone is not the solution to these issues (especially in the absence of fundamental cultural change across local government and Whitehall). Every recommendation in this report should therefore be tested against the questions:

- can this be done by regional industry on its own, and if not;
- what is the minimum that West Midlands industry needs from the public sector or energy sector to make this happen?

In addition, recognising the strong national bias to all policy-making and energy market design in particular, all the recommendations in this report should be actively positioned as national solutions that the West Midlands is promoting and driving as a consequence of its economic geography and national contribution, rather than requests for special treatment as a client of Whitehall.

We therefore propose that this Industrial Energy Taskforce be institutionalised as a national industrial energy centre based in the West Midlands but focused on supporting mid-sized manufacturers nationally through the energy cost crisis and energy transition. This should ideally be backed from the outset by the key trade associations and OEMs as well as the public sector at regional and national level.

There is an opportunity and some demand to do this arising from the success of the recent Repowering the Black Country Project (part of the national Industrial Clusters Programme) – interest in the West Midlands model and collaborative working has already come from Wales, Northern Ireland, East Anglia, Yorkshire, Lincolnshire and London, Solent and the South East and collaborative projects are already underway between the West Midlands Cluster, South Wales and East Anglia.

Recommendations

6.1 West Midlands industry, supported by trade associations, regional government, the other industrial clusters and the energy sector (DESNZ and Ofgem) should establish and host a National Centre for Manufacturing Transition (CMT) working in partnership with (but distinct from) the Mayor and Combined Authority, regional and global partners to carry forward the recommendations of this taskforce at regional and national level.

6.2 The key regional interfaces between industrial competitiveness and the energy sector are in energy infrastructure planning and delivery. The WMCA should ensure that the industrial voice is well-represented in infrastructure planning through meaningful industrial representation via the CMT on economic and energy boards and the infrastructure delivery panel recommended under Challenge 3.

The Centre for Manufacturing Transition

The Centre for Manufacturing Transition (CMT) was launched in March 2023 by a consortium of Black Country and West Midlands businesses which had engaged with the Repowering the Black Country Industrial Cluster Decarbonisation Project.

An industry-led institution, it will work with other industrial clusters, universities and dispersed manufacturing sites across the UK, and with UK and regional government, to develop and implement practical and policy solutions which support UK manufacturing supply chains through the energy cost crisis and transition to net zero.

7. Summary of recommendations and conclusion

The dominant theme emerging from this report is that the way the UK energy market operates is undermining value and competitiveness across the rest of the economy and particularly the West Midlands. The crisis of 2022 has not just been a major shock to the system in the face of which industrial customers might reasonably expect a degree of short-term protection; it has also exposed systemic and long-term weaknesses that are inhibiting West Midlands regional economic growth in the medium- and longer term.

Our recommendations therefore address not only immediate support, but also longer-term structural reforms to address these weaknesses.

In line with our brief, this Taskforce has focused as far as possible on regional solutions. Of the 15 recommendations, six can be independently implemented by the region without central government support, and a further five can be regionally-led but will require support from either government or Ofgem or both.

It is in the nature of the highly centralised UK energy market structures, however, that significant mitigation to the impacts of what has been a global crisis, mediated for their industrial economies worldwide largely by the actions of national government, will require some national government actions. For this reason, and although we have avoided as far as possible discussion of potential technical reforms to UK energy markets, the first three recommendations of this report all require central government action. These are also the most urgent ones, and the ones which have the most significant and fastest impact.

They are thus worth repeating here, and the right note on which to end this report.

Priority

2.1 In addition to the windfall taxes already imposed on oil and gas companies, the government should ask energy brokers, suppliers and generators to release West Midlands industrial and commercial customers from contracts signed during the crisis at rates greater than 50 p/kWh for electricity or 11p/kWh for gas and allow them to renegotiate at current rates. Any costs of doing this should be borne by the energy value chain as a whole (i.e., where a supplier releases a customer from a contract, the generator should also be required to release the supplier from any back-to-back contract).

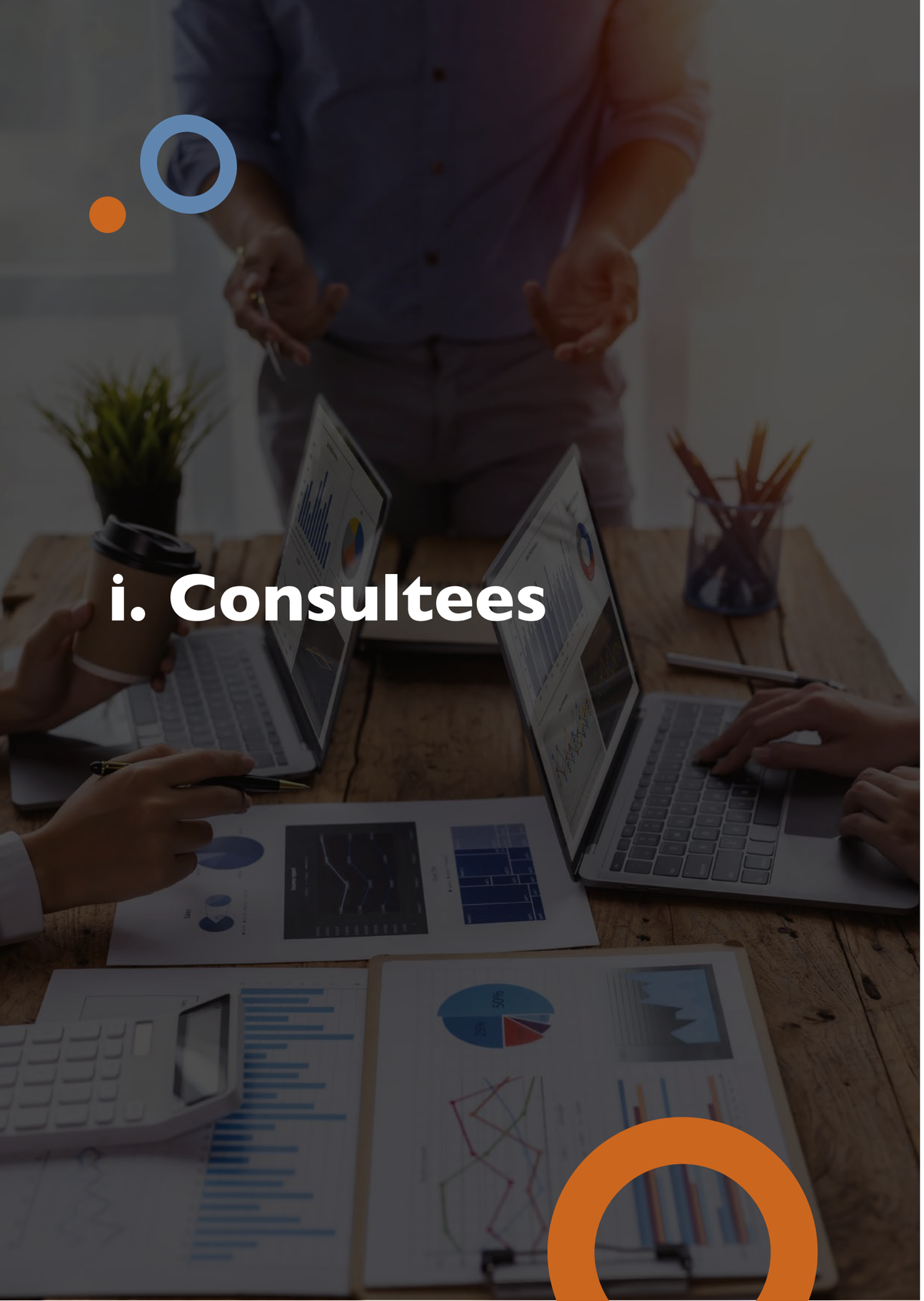
2.2 Allow companies with outstanding Covid Business Interruption Loan Scheme obligations to write these off provided they invest the funds in onsite energy efficiency projects during 2023. This could be funded by re-allocating some of the spare funds available from the amounts budged by Treasury for EBDS and EBRS support, given the falls in wholesale gas prices in 2023.

Urgent

3.1 Ofgem's remit should be extended to cover all but the largest businesses (i.e., those with balance sheets enabling effective energy market participation) and resourced[15] with powers to regulate the third party intermediary (commercial energy broker) market. This should include responsibility for an accreditation scheme for brokers and creation and enforcement of standard industrial energy contract forms.

[15] Possibly jointly by industry and government, or via a levy on brokers.

Appendices



i. Consultees

ABGI
Aldersgate Group
Alpha-Rowen
Ameresco
Aston University
AXPO Group
British Business Bank
BC Chamber of Commerce
BCIMO
BCU
BEIS
BEIS Energy Efficiency in business and Industry focus group
Black Country Chamber
Black Country Consortium
BOC
Brandauer
Brockhouse
Building Alliance
Cadent Gas
Cast Metals Federation
CBM
Cemex
Centrica
Confederation of British Metalforming
Control Energy Costs
Coventry Chamber of Commerce
Coventry City Council
Coventry University
CR Plus
Crowe UK
D-Energi
DESNZ
Dreadnought Tiles
Dudley Business Champions
E.ON
Energy Pro Ltd
Energy Systems Catapult
GBSLEP
High Value Manufacturing Catapult
HM Treasury
HSBC
Ibstock
Inspired Energy
JLR
Liberty Group
Low Carbon SME Programme
MAKE UK
MAKE UK WM Regional Advisory Board
Manufacturing Technology Centre
Mayor of the WM
Mayor of the WM Economic Impact Group
Mereway Kitchens
Metro Bank
Midlands Energy Hub
Mondelez
MWW Ltd
Narvik Developments Ltd
National Grid
National infrastructure Commission
NatWest
NDC Polipak
Newby Foundries Ltd
NG ESO
NGED
Npower Business Solutions
Ofgem
Peterborough City Council

Pro Enviro
Propel Finance
QPQ Investments
Repowering the Black Country Industry Advisory Board
Robinson Brothers
Sandwell Business Ambassadors
Sandwell Council
Sarginsons Industries Ltd
Servosteel
Siemens Energy Performance Services
Siemens Supply Chain Management
Skidmore Review
Solihull Council
Somers Forge
South Wales Industrial Cluster
SSE
The Data City
The Oyster Club
Thomas Dudley Ltd
U-Battery
UCL Energy Group
UK Energy Efficiency Taskforce
UK Investment Bank
UK Metals Council
University of Birmingham
University of Cambridge (Institute of Manufacturing)
University of Wolverhampton
Utilisave
Voest Alpine
Warwick University
Westley Group
William King
WM Chamber of Commerce
WM Growth Company
WM Metals and Materials Forum
WMCA Energy Capital
WMCA Mayor's team
WMCA Strategy Team
WMCU
Warwick Manufacturing Group
Worcestershire County Council

The Taskforce also ran multiple evidence gathering sessions and gave presentations across the region and a monthly survey of energy costs, to which companies contributed anonymously.

ii. How the UK commercial energy market works

ii. How the UK commercial energy market works

Extracts from a paper published by the Taskforce in February 2023

Introduction

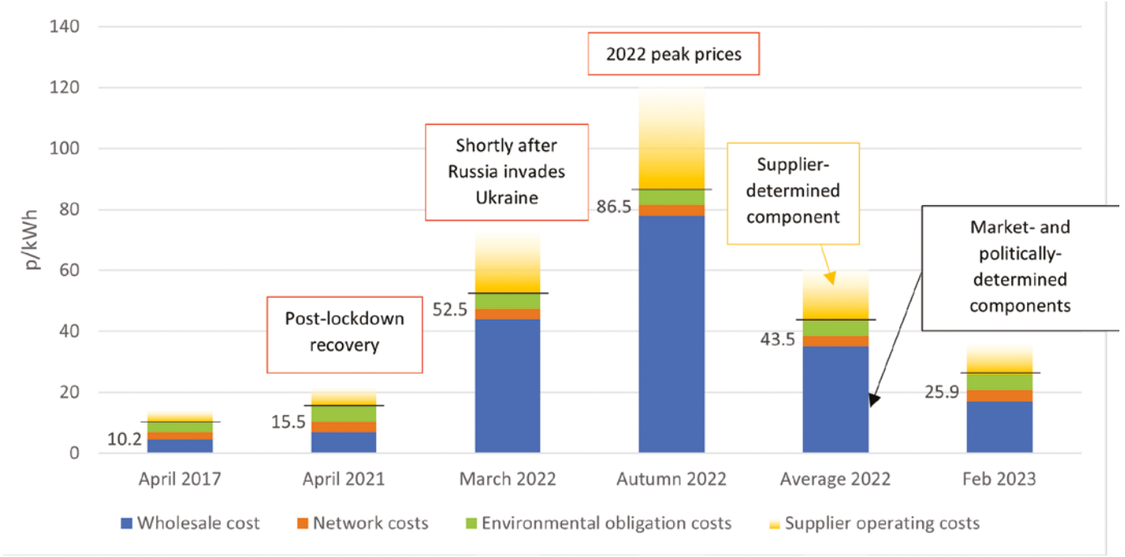
This paper explains how commercial energy costs are structured, why commercial contracts are opaque and undermine UK economic competitiveness, and suggests some initial ideas for more efficient and cost-effective ways than a price cap or discount scheme to mitigate the impact of market design on otherwise competitive reginal economies.

How are business energy costs determined?

Business energy costs can be broken down into components, each of which is set in a different way. The size of some of these components are determined by markets, but others are determined by government or individual suppliers. This paper explains who does what and the consequences for our economy.

The chart below illustrates these components of industrial and commercial electricity unit costs, and how they have varied since 2017. [16]

UK Commercial electricity cost components (excluding VAT) over time



Estimated proportions of each component of energy costs comparing prices from the past 6 years, showing how recent events have changed where energy costs come from. Labelled figures are the total non-supplier-determined cost. This chart does not include VAT, which is charged at 20% but most industrial consumers can reclaim. Supplier operating costs and margins vary by supplier and may also include broker fees, upstream trading costs, hedging and purchasing mixes and commission. These costs are unregulated (hence the top segment of each bar is shown with variable height).

[16] Gas prices are structured in a similar way, although the per unit figures are different.

There are broadly four components in the unit charge (per kWh) paid by an individual company. Variation in each of these is driven in distinct ways.

The **wholesale price** is driven by global market forces (e.g., wars, national reserves) and by UK market design (e.g., a structural choice by government to link gas and electricity prices). It is the price paid by energy suppliers for electricity they buy on the open market (i.e., excluding any they generate themselves). The exposure to global market forces makes this price volatile, as illustrated in the chart. The chart also only shows day-ahead spot prices: like other commodities it is also possible to buy power for delivery in the future at different prices, so actual prices paid by suppliers are more complex. The UK market design means that relatively low and stable costs of renewables and nuclear power are not reflected in open market electricity prices. [17]

All non-wholesale components of energy prices are sometimes termed 'non-commodity' costs, but in practice this covers three distinct types of cost.

Network costs are negotiated between the government regulator (Ofgem) and network companies at five yearly intervals and are largely fixed, then shared back across all customers. These are payments for the pipes and wires through which electricity and gas reach businesses and homes. The level of cost (i.e., how much we invest in our fixed infrastructure, including in maintaining it and ensuring everyone has access to it, even after storms etc) is agreed through a political process. This process enables us to make strategic choices including, for example, how much electrical or hydrogen network capacity we build to support industrial and transport demand in a lower carbon economy; or trade-offs between enabling widespread access to the grid for new connections and avoiding building capacity that remains unused.

Environmental and social obligations (levies) are also negotiated – typically directly between government and global investors - as part of 'business models' put in place by government to incentivise private investments in socially-desirable projects such as non-polluting wind farms, nuclear power stations, and energy efficiency schemes.

They are again relatively fixed, but vary slightly over time as they can include formulae linked to wholesale prices. In practice they can best be thought of as contractual interest and loan repayments against investments made in the past between many organisations, including manufacturing industry, and government. [18]

Supplier operating costs and margins are under the control of individual energy suppliers (and also sometimes include broker sales commissions and similar[19]). These include the normal commercial operating costs of the supplier as well as their profit (which supports future investments). They also reflect the trading position of the supplier in relation to their customer base. For example, the supplier may choose to buy all their power at spot rates, or (more realistically) they will purchase a mix of spot and forward contracts – sometimes years ahead – at different prices. At the same time, they are offering their customer base a portfolio of fixed and variable tariffs, each representing a contractual commitment. The degree to which supply and purchase contracts align creates both risk and trading margin for the supplier. This is sometimes referred to as their trading position.

[17] Instead the difference between the high wholesale price and low costs of renewable and nuclear production flow back into the investors in these generation sources (typically global energy companies) and government. They argue this helps fund necessary future investment.

[18] Current levies include Contracts for Difference; Feed in tariffs; Renewable Obligation Certificates; Climate Change Levy.

[19] Brokers sometimes act between the customer and supplier either for a fee, or on a commission basis. Just as with financial advice, it is worth companies knowing how their broker is paid, as commissions based on percentages of value in volatile markets (and/or hidden in unit costs) can act as incentives for brokers to do long term deals that act against customer interests. Some customers are now taking group legal action where they believe this may be the case for them: https://harcusparker.co.uk/campaigns/energy-litigation/.

An example is the best way to illustrate how this market framework works through to reality. Consider a single customer who is about to be put out of business because they have a two year fixed tariff set at 60p/kWh for electricity with their supplier. They bought this at the peak of market volatility in October 2022, in some desperation, when spot prices were 50-60p/kWh or more.

The underlying cost structure of this example contract could take one of three broad forms, using extreme cases to simplify and illustrate what is in practice a range of possible outcomes.

1. Their supplier might only ever buy power at spot prices but still be willing to sell fixed rate contracts with business customers. So the supplier was paying around 50-60p/kWh when they sold the contract, but are now paying 14p/kWh. This is a highly risky position for the energy supplier in theory (as spot prices might go up again above 60p) but is also highly profitable in the short-term, as it means the supplier is now making profits of 40p or more per unit (before any insurance or hedging costs they might choose to incur).

2. A much more conservative supplier might, however, only ever buy supply contracts to match the deals it does with its customers. In this case, the supplier will have bought long-term power (for say 55p/kWh) at the same time they sold the contract to their business customer at 60p/kWh (allowing 5p for network and environmental costs, their own costs and a small margin for themselves and any broker). There is no trading risk, but also little profit for the supplier.

3. A third possibility is that the supplier bought or acquired power on a long-term contract last October for say 40p/kWh, and still sold it to the customer at 60p/kWh. Suppliers who own their own generation assets or who are large enough to hold and manage portfolios of hedged forward contracts may be able to do this. This is also a position effectively with little trading risk, but now contains an exceptional profit for the supplier which might in some circumstances amount to abuse of a privileged market position, particularly if the supplier uses part of their 20p/kWh profit to pay large bonuses to brokers for selling such contracts to customers when they know government subsidies will mask any short-term impact.

All three of these contracts look identical to the customer (60p/kWh) but the options for commercial recourse or policy correction are completely different.

In the first contract the supplier is making exceptional profits through a highly risky (arguably irresponsibly so) trading strategy; in the second the supplier is making virtually no profit at all by being very conservative (to the extent that they could easily put both their customers and themselves out of business, but it's pointless pursuing them for abusive practices, for example); and in the third they are cynically exploiting their market position and government schemes, or the customer has foolishly or unluckily bought a contract which in a more transparent market would not be viable.

The volatile market conditions that characterised 2022 made it easier for less scrupulous suppliers and intermediaries to trap customers in unsustainable contracts. The way the government's EBRS and EBDS schemes are linked to wholesale prices unfortunately exacerbates this opportunity, in particular by allowing suppliers to mask the impact of unsustainable pricing until after customers have signed business-destroying fixed rate contracts. [20]

It's impossible in practice to know whether a tariff being charged by a supplier reflects their actual costs and a reasonable profit, or instead is exploitative and opportunistic pricing. More generally, it makes the UK commercial energy market a rich generator of unintended, undeserved and undesirable economic outcomes: fundamentally sound manufacturing and hospitality businesses across the West Midlands and elsewhere being put out of business by accident. [21]

Smaller commercial customers are particularly vulnerable because they are not protected by the Regulator and Ombudsman in the same way as domestic customers [22] ; nor do they have the capacity and scale to participate in the energy market direct or renegotiate obviously dangerous contracts like large commercial and industrial companies. In particular, where energy costs have historically been a relatively small part of their turnover, this has made them easy prey for less scrupulous and commission-based sales practices.

How might these issues be addressed?

In the medium and longer-term, market reform is clearly required, and the government recognises this and has already initiated a review of electricity market arrangements (REMA) which will address some of these issues. This will realistically impact the market from 2025-2030 onwards. It might include mechanisms such as ringfenced fixed or lower cost renewable power pools allocated to industrial customers or zones.

More immediately, measures such as effective regulation of commercial energy brokers and commercial energy contracts would be sensible, and models are available from similar markets such as financial services. Standardised forms of contracts, formal broker accreditation schemes, and recourse to a regulator or ombudsman all seem appropriate and are relatively low cost.

However, such measures still remain medium-term and will not help businesses locked into excessive contracts during the peak of price volatility in autumn 2022. In the West Midlands, surveys suggest that in the manufacturing and hospitality sectors, significant numbers of businesses fall into this category (currently paying more than 50p/kWh for electricity on fixed term contracts). This is at least 4000 substantive companies across the region. [23]

The focus of government attention should be on finding the most efficient and cost-effective way to target the limited available support on these 3-4000 companies. SIC codes and formulae are very broad brush and inefficient (especially with appeals) but are the current proposal. More cost-effective approaches might be some or all of:

- A delegated hardship fund for regional leaders and bodies to allocate

- A requirement on energy suppliers to waive contracts failing to meet agreed criteria (and perhaps to fund this in lieu of a general windfall tax)

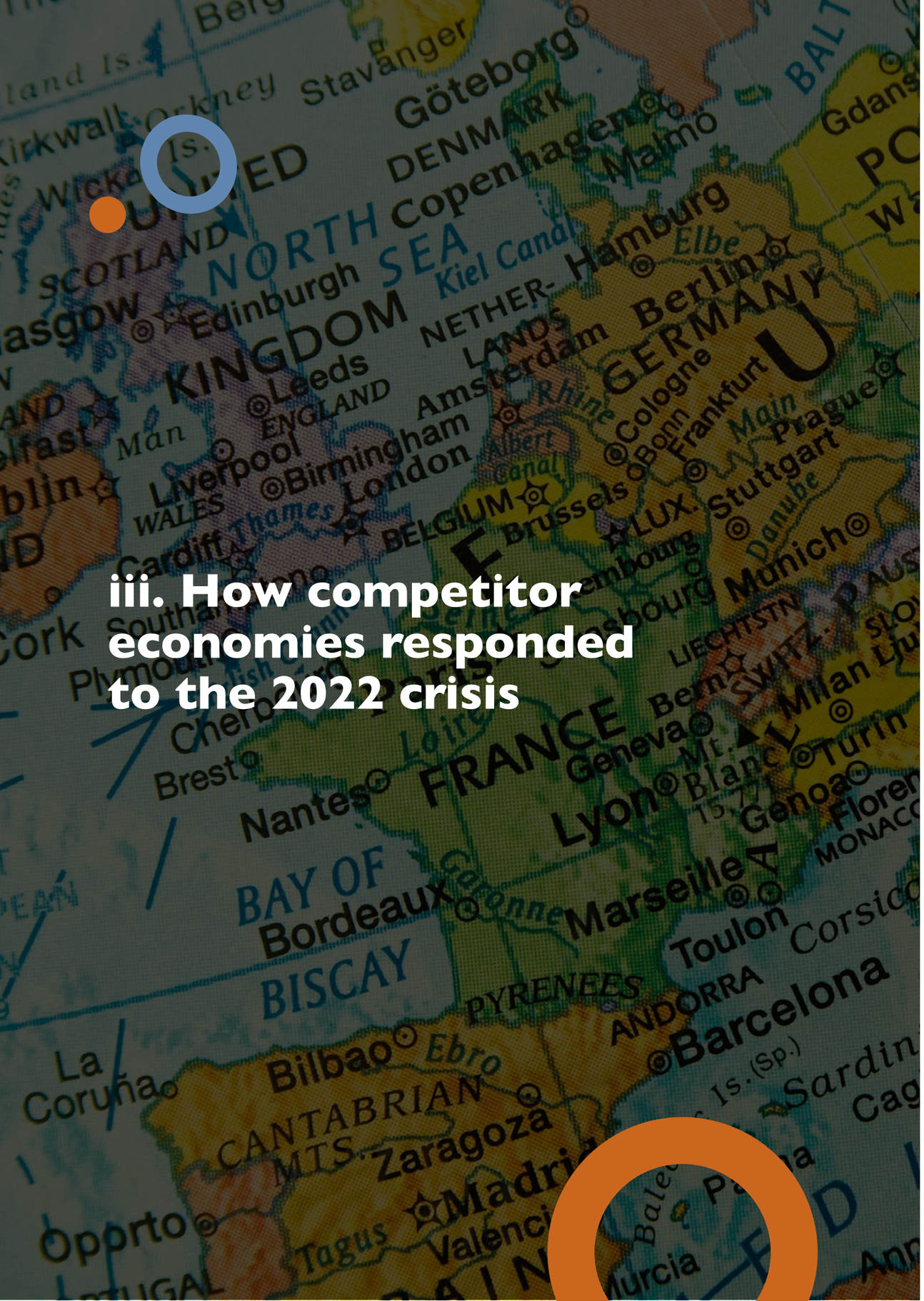
- Creation of a secondary market for existing supply contracts, with government and/or energy company funds injected centrally to make these commercially viable, and enabling suppliers to bid in to make offers to customers (ideally with standard contracts)

[20] The Energy Bill Relief Scheme (EBRS) and Energy Bill Discount Scheme (EBDS) operate by applying headline discounts to each kWh a supplier sells. The subsidy is paid direct to the supplier, not the customer.

[21] 'Accident' here means multiple commercial actors simply behaving rationally given a market design.

[22] There is regulatory protection for 'micro' businesses, defined as businesses using less than 100,000 kWh of electricity a year, or employing fewer than 10 people and turning over less than EUR2M, but in practice even a single successful restaurant can exceed this (and is highly unlikely to have an energy manager).

[23] https://www.gov.uk/government/statistics/business-population-estimates-2021. 3-4000 is an estimate based on excluding companies with no employees and taking 10-20% of manufacturing and hospitality businesses based on the latest taskforce survey results.



iii. How competitor economies responded to the 2022 crisis

Country	Support for consumers with energy bills	Support for businesses with energy bills
European Countries		
EU	The EU has introduced: ■ A cap on gas prices if they exceed €180 per megawatt hour for three days running, from February 2023. ■ A "solidarity levy" - a windfall tax - on excess profits made by oil, gas, coal and refinery companies in 2022. ■ A cap on the revenues of electricity companies which produce energy from wind, solar and nuclear. These revenues have risen as the price of electricity from these sources is linked to soaring gas prices - the cap is expected to raise €140 billion (£121bn). ■ A mandatory reduction of electricity consumption in peak hours by 5% across the EU, until March 2023. ■ A voluntary reduction of 10% of overall electricity consumption - individual countries will decide how to to this. To tackle the crisis, the European Commission has already quadrupled – from €500,000 to €2 million – the amount of aid that governments can give to companies without requiring a green light from Brussels. According to Bruegeo, €574 billion has been earmarked across EU countries to shield consumers from rising energy costs since the start of the energy crisis in September last year. And Germany leads the pack with €264 billion earmarked.	
A - Austria	The Government has invested almost €4bn to help households with the cost of energy, which should generate an average annual savings of €500 for each household. Government agrees on electricity price brake - Energy market - derStandard.at › Economy In early 2022: ■ Introduced an Energy Costs Credit: €150 voucher for 4m households ■ Doubled the Inflation credit to €300. ■ Set to zero the Green electricity subsidy and green electricity subsidy flat rate, saving every household ca. €90-100. ■ 50% increase in the lump sum for commuters and quadrupling the value of the "commuter euro" allowance by 30 June 2023. A one-off tax-negative allowance of 100 euros for taxpayers whose income is below the tax threshold. ■ 150 million euros made available in 2022 to reduce fares on public transport and expand services Cost of Living Package: €6.3b	**Carbon Tax Delay.** The introduction of the carbon tax, €30 per tonne of emitted CO2, has been delayed from July until October 2022. Austrian government presents package to cushion inflation - ABC News **Relief for SMEs with high fuel costs.** Via a fuel refund worth €120m. Available until end of June 2023. **Reduction of energy levies.** Natural gas and electricity levies will be reduced by 90% by end of June 2023. This will bring relief amounting to roughly €900m. Part of the Austrian Govt's inflation relief package. Support to cushion consumers against high energy costs (bmf.gv.at) **Energy-intensive companies** will benefit from a 1.3bn euros fund to help them cover 30% of their additional fuel, gas and electricity costs. Liquidity support for companies by reducing advance payments for income tax/corporate tax payments (limited to 30 June 2023). Support for companies to help them switch quickly to alternative, de-carbonised forms of energy. Funding totals 120 million euros for 2022 and 2023. Companies seeking state aid will have to avoid certain wasteful activities, such as using outdoor patio heaters and keeping shop lights on after 10 pm. **Relief package for the Agricultural sector worth €100m**. Open to agricultural companies of all sizes who have been affected by the price increase of energy, fertilizers, and other raw materials. Approved by the EU Commission on 5th August 2022. Aid will not exceed €62,000 per beneficiary. Grants ended in 31st December 2022.

Country	Support for consumers with energy bills	Support for businesses with energy bills
European Countries		
B - Germany	"Defensive shield" package worth €200bn (£175bn) effective from 1 January 2023 until April 2024. ■ In September and October 2022, all taxpayers received a one-off energy payment €300. Students received €200. There has been extra help for people on benefits (e.g. rent subsidy payments), €100 top-up for people on social benefits; €100 payment for each family receiving child support benefits ■ In December 2022 monthly gas bills were paid for all households (and small-to-medium businesses) ■ Households (and small businesses) will receive a fixed price of 12 cents per kilowatt-hour (kWh) for 80% of their gas consumption (and their heat contracts) of the previous year. Any consumption past 80% will be subject to market prices. ■ Subsidised public transport tickets (although no longer only €9 per month). ■ Increase in welfare payments and child benefits. The scheme is being financed by a windfall tax on energy companies applied from December 2022 to end June 2023 (with a possible extension to April 2024). (90% of profits of RE installations will be taken, and). Cost: hefty price tag: €99 billion, split between €56 billion to subsidise fossil gas and district heat and €43 billion for electricity. EEG surcharge abolished – see in opposite column Germany is trying to cut energy consumption by: ■ Heating public buildings to a maximum of 19C, with exceptions for places like hospitals ■ Turning off hot water for washing hands in public buildings ■ Lighting limits for buildings, monuments and advertising. Building owners will be required to optimise the heating systems on their premises. This includes an inspection of the heating system for fundamental adjustment defects as well as carrying out a check to see if other measures are needed. Owners of larger buildings are to be obliged to have the heating system hydraulically balanced in order to achieve energy savings. *[23] BDI (Germany's main industry lobby) had criticised the relief package – they say it focuses too much on individual citizens and there is not enough help for companies. Germany unveils €65B in energy cost relief, vows to cap prices – POLITICO*	"Defensive shield" [23]package worth €200bn (£175bn): (Jan 2023-April 2024) ■ December monthly gas bills were paid for small to medium businesses (and households) ■ households and small businesses will receive a fixed price of 13 cents per kilowatt-hour (kWh) for 80% of their gas consumption (and their heat contracts) of the previous year. Any consumption past 80% will be subject to market prices. Germany is now considering to extend the cap on 80% of electricity for Ells to 2030 at a level of 6 eurocents/kWh to provide long-term stability to industry (this is still causing controversy within government). This would cost €25-30bn and would come out of the €200bn package. ■ Companies that consume more than 1.5 million kWh annually will have access to cheaper rates. Large-scale consumers, and hospitals, regardless of size, will be able to obtain gas at a rate of 7 cents per kWh – limited to 70% of consumption until then. Heat will be cheaper for them, too, at a rate of 7.5 cents per kWh, but similarly limited to 70%. These companies can also resell their allotment of cheap gas. (For major gas consumers like German chemical giant BASF, this could net the company a resale profit of around €2.6 billion). ■ Companies can claim state Aid, but if they receive more than €2 million in aid they must pledge to keep production and jobs in Germany (BASF announced it would scale back production in Europe). **A 63% reduction in VAT on natural gas consumption (from 19% to 7%)** from October 2022 to March 2024, to offset the controversial gas levy scheduled from October 1st until March 2024, allowing for higher purchasing costs to be passed to consumers, who will pay an additional 2.4cents per kilowatt hour). The VAT cut is reported to come at the cost of €14b in lost revenue. Mehrwertsteuer auf Gas wird gesenkt | Bundesregierung **A gas levy is imposed on consumers** (from Oct 2022 to March 2024) was to help utilities cover the cost of replacing Russian supplies. Its levels can be adjustable up or down depending on the storage and supply situation and are reviewed every 3 months. It has just been reduced (on 15 May) from 2.419 to just over 1 Eurocents/kWh **Elimination of EEG levy.** In place since 2000, the Renewable Energy Act, or EEG, was put in place to promote the development of energy generated from renewable resources. The abolition of the EEG was brought forward by 6 months (to July 2022) to help consumers with rising electricity prices and was part of the Federal Government's relief package. Electricity suppliers are required to pass on this reduction in full to end consumers. It is estimated to deliver relief worth €6.6b to consumers and will reduced electricity prices by roughly 3.7cents per kilowatt hour. Elimination of EEG levy relieves electricity consumers | Federal Government (bundesregierung.de) **€5b aid package for energy intensive industries.** The Energy Cost Reduction Programme (EKDP) was approved by the EC in July 2023, allowing eligible energy intensive and trade intensive companies in Germany to receive a grant of up to €50m towards their increased gas or electricity costs. Applications closed in Germany from end of September 2022. BMWK - €5 billion aid programme launched for energy-intensive industry **Inflation Relief Package.** Planned aid package is to be worth €10b. Germany Plans 10-bn-euro Inflation Relief Tax Package | Barron's (barrons.com) **Employees' allowance for business related expenses.** The employees' allowance for business related expenses is being raised retrospectively to 1st January 2022, rising by €200 to €1,200 per taxpayer. Taxpayers can also include all job application costs on their income tax declaration for this year without having to supply additional documentation. The relief is worth €1.1b.

Country	Support for consumers with energy bills	Support for businesses with energy bills
European Countries		
C - Greece	Gov subsidising consumers up to 50% to buy new fridges, freezers and air-con units	
D - Spain	€9b package announced in June to help with costs Free train travel, 1 Sept until end of 2022 In April 2022, a 16bn Euro 3-month plan of soft loans and direct aid was adopted a soften the blow of soaring energy prices and inflation. This included fuel subsidy for truckers and transportation companies to all citizens (government pays for 15 cents per litre, while petrol companies cover at least a further 5 cents). Extraordinary measures include: ■ a special tariff was created to limit quarterly energy price of increases, to be implemented until the end of 2023. ■ The reinforcement of the social energy bonus for the most vulnerable households, by increasing the amount of energy eligible for a discount by 15%. The discount percentage will also be increased to 65% and 80% for vulnerable and severely vulnerable families, respectively, a measure worth €255. ■ A new "temporary" new category of electricity consumers entitled to a 40% discount on their bills, which will be aimed at those "households with low-income workers", a measure aimed at 1.5 million vulnerable households. ■ The so-called thermal bonus reinforcement in 2022 and 2023 for vulnerable households, doubling the budget in both years by raising the amount of the minimum subsidy to €40 – the cost of about two butane gas canisters, as Sánchez pointed out – doubling the amount of the average subsidy to €375 per household. The Government's committed to the EU's "energy solidarity" with bloc partners, setting the target of reducing energy demand for ■ gas consumption by between 5.1% and 13.5 by March 2023 ■ electricity consumption by 10% of normal demand, with a mandatory 5% at peak times. Heating will be limited to 19C in the winter and shops are to close their doors when the heating is on. Air conditioning will be limited in public buildings and shops. It also introduced a revision of outdoor lighting regulations (shops should switch off lights after 22:00).	Spain (and Portugal) set a gas price cap for natural gas used to generate electricity in gas-fired, dual-fuel-fired and cogeneration power plants until May 2023. The cap was set at €40/MWh for the first six months, before rising by €5/month to €70/month at the end of 2022. **Connection fees cut on newly signed electricity supply contracts** from April 2022 (initially for 3 months). **VAT reduction on electricity prices, from 10% to 5%.** This follows a cut in VAT for electricity prices from 21% to 10% in June 2021. **Price cap on gas to lower electricity bills for households, businesses and industry.** Megawatt hour to fall from around €210 to €130. Announced in May 2022 and to last 1 year. La Moncloa. 13/05/2022. Government of Spain caps gas prices to lower electricity bills for households, businesses and industry [Government/Activity of the Council of Ministers] **Suspension of 7% tax on the value of production of electric energy (IVPEE).** First suspended for the second half of 2021 but was extended until end of June 2022. **Intensive energy users were given a 12-month grace period on their loans** on which they were required to pay interest only, but not the principal on a loan. (until end March 2023) **Windfall taxes on banks and energy companies.** Bill introduced in July 2022. 4.8% tax on banks and 1.2% levy on energy firms. Spain Seeks 4.8% Windfall Tax on Banks' Domestic Fees, Interest Charges - Bloomberg In October 2022, a further windfall tax will tax oil and gas companies at 33% of extraordinary profits, which are those that exceed 20% of the average for the last four years. **The gas canister price had been frozen until 31 Dec 2022** at €19.55 per bottle.

Country	Support for consumers with energy bills	Support for businesses with energy bills
European Countries		
E - France	France had already announced a one-off €100 (£84) payment in 2021 to 5.8 million households receiving energy vouchers €20b support package; includes maintain price cap on gas during 2022 and 2023; increasing pensions The cap on electricity tariffs for households set end 2021, has just been extended from end 2023 to early 2025. However the cap on gas will end at the end of 2023.	**Rising prices of wholesale energy capped at 4% since winter 2021** last until end of 2022. The cap in gas and electricity was raised to15% for 2023, as part of a €45bn (£39bn) scheme to support households and businesses. The scheme runs until 30 June 2023, with a provision to be extended until the end of the year. However for small businesses, neither of the two electricity and gas caps will be extended for businesses beyond that date (while the electricity cap will be maintained longer for households). The government plans to **reduce energy consumption** by 10% by: ■ Capping indoor temperatures at 19C for public buildings ■ Cutting the temperature of public sports facilities by 2C and in public swimming pools by 1C ■ Paying civil servants an extra €2.88 per day to work from home, if this allows government buildings to close ■ Speed limits on ski lifts and producing less artificial snow The government is planning a windfall tax on energy companies in the 2023 budget. **€5b aid package for energy intensive industries.** Announced in March, Finance Minister Bruno Le Maire told a press conference the aid would benefit the energy-intensive metal and chemical industries as well as paper and food producers. Approved by European Commission in July 2022. State aid: Commission approves €5 billion French scheme (europa.eu) **Delayed tax collection for companies facing higher energy costs and export difficulties**

Country	Support for consumers with energy bills	Support for businesses with energy bills
European Countries		
F - Italy	A further €17b (€33b since January 2022) aid package to help families and firms tackle rising costs Total spend €49.5bn (£42bn) ■ Including a €200 (£169) one-off payment to people earning €35,000 (£29,600) a year or less. ■ Cutting taxation on fringe benefits paid to employees to help them with their energy bills, up to a maximum of 3,000 euros per worker. The Italian government is also trying to reduce gas consumption by: ■ Asking people to turn central heating down by 1C and turn it off for an extra hour every day ■ Limiting heating in public buildings, with exceptions for hospitals, nurseries and some industries Cash payments for energy-saving home improvements were increased to 5,000 euros (from 1,000 euros). For renovations carried out in 2023 the government will pay 90% of the bill (instead of 110% at present), an inventive schemed known as the "superbonus".	**Windfall Tax for Energy companies.** Suspected to raise €11b which will go towards helping consumers pay bills. Energy companies will have until November 2022 to pay the 25% one-off levy. Italy imposes 25% windfall tax on energy companies – The Irish Times **Relief package worth €2.9b for SMEs.** Open from July to end 2022, the scheme provided liquidity support to SMEs with a mixture of guarantees covering part of new eligible loans granted by banks, and direct grants covering the guaranteed premiums. Open to companies in all sectors (not financial) with up to 499 employees as well to as to self-employedState aid: Commission approves €2.9 billion Italian scheme (europa.eu) **Tax credits increased for energy-intensive industries.** Introduced in March 2022 under Law Decree n.21. The tax credit computed on expenses incurred for energy purchased and consumed Q22022 was raised to 25% (from 20%). The 15% tax credit on expenses incurred for the purchase of natural gas consumed during Q2 of 2022 raised to 20%. Italy Boosts Company Tax Credits to Combat High Energy Prices (bloombergtax.com) These tax breaks were extended to end 2022. Companies were able to settle energy bills in up to 36 instalments under a scheme which includes a state guarantee in case of default on payments. The guarantees was provided by public credit export agency SACE on condition that the benefiting companies do not pay dividends or buy back shares. At the height of the gas prices Rome had given the Energy Services Operator (GSE) 4 bn euros to buy gas and then sell it to firms at a discount before the end of the year, repaying the Treasury with the proceeds. (no longer in place as gas prices have now reduced).
G - Poland	Coal subsidising for households : July 2022: one-off payment (3000zl) to households to help cover rising price of coal Energy price support package for households, worth 26.8bn zlotys (£4.8bn)., including: ■ freezing energy prices for 2023 at 2022 level, with a limit of 2,000 kWh per year for most households. The thresholds for households with people with disabilities and for families with three or more children will be higher. ■ VAT on food, gas and fertilizer abolished and reduced on petrol, diesel and energy bills ■ new mandatory 10% electricity saving for national and local government public administrations. Households that reduce electricity use by 10% in 2023 compared with 2022, will be rewarded with an additional discount.	Heating plants received compensation in exchange for hiking prices by no more than 40%.

Country	Support for consumers with energy bills	Support for businesses with energy bills
European Countries		
Portugal		In May 2022, a gas price cap for natural gas used to generate electricity in gas-fired, dual-fuel-fired and cogeneration power plants was set until May 2023. The cap was set at €40/MWh for the first six months, before rising by €5/month to €70/month at the end of 2022. A new round of measures to limit the impact of the global energy crisis on domestic businesses was introduced in 2023. €3bn package to lower energy bills of companies from 1 January 2023, saving ~30% of the estimated electricity tariffs and 23% to 42% for the gas tariffs via a mix of state spending and regulatory measures, including: ■ extraordinary regulations and compensation measures to limit electricity prices rise; and ■ extraordinary subsidies to industrial companies, meant to limit natural gas price increase. The support is to be managed by the regulating entity ERSE, and will be distributed based on 80% of each company's average consumption in recent years. However the confederation of Portugal businesses has criticised the lack of fiscal reliefs and other taxation measures (including a windfall tax on energy companies).
H - Netherlands	Relief package worth €15.5bn for citizens. Netherlands Eyes Windfall Tax in $16 Billion Plan to Ease Energy Costs - Bloomberg Since November 2022 electricity and gas prices for households have been capped at January 2022 levels - up to a certain amount of consumption. Any extra use will be charged at market rates. A discount of €190 on energy bills in November and December to all households. One-off energy allowance of €1,300 to those on lower incomes. VAT cut on energy bills and tax on petrol and diesel. Introducing a higher minimum wage, lower income tax, higher benefits and allowances (such as child benefit, student grants and tax credits. Energy efficiency measures: households and business are advised to cut consumption, including by turning down heating by 1C. Planning a windfall tax on energy companies.	**VAT cut on energy from 21% to 9% from July until end of 2022.** Package of measures to cushion the impact of rising energy prices and inflation | News item | Government.nl **Energy refund scheme for businesses** – must consume more than 10mil kWh and also conclude a long-term agreement on energy efficiency with the Govt. Energy tax in the Netherlands | Business.gov.nl **Fuel Tax Cuts**

Country	Support for consumers with energy bills	Support for businesses with energy bills
European Countries		
I - Ireland	1 May – 31 Oct: VAT reduction on supply of gas & electricity from 13.5% to 9%	Fuel Tax Cuts The temporary business energy support scheme (TBESS) will remain in place until July 31, 2023. Under the scheme, businesses can claim up to half of the increase on their gas or electricity bills if they have experienced a 30% or more increase in their natural gas and/or electricity costs in the relevant claim period when compared to the 'reference' period in 2021. The eligibility of the scheme will be widened after a number of businesses found it restrictive. https://www.revenue.ie/en/starting-a-business/documents/tbess-guidelines.pdf
J - Denmark	DDK,2.4b "heating check" paid to 400,000 households with an income limit of DKK 650,000 after AM contributions, DKK 706,000 before AM contributions. The target group includes households heated by gas boiler, those located in a district heating area with a gas share above 65 % or a combination of gas and heat pumps giving the same price increases and those with electric radiators or heat pumps as primary heat source with a corresponding price increase.	
K - Bulgaria	Reduced VAT rate of 9% on central heating and natural gas. From 9th July 2022 until 1st July 2023. Tax Measures for Tackling the Increasing Energy Prices in Bulgaria (wts.com)	
L- Finland	New measures for households from December 2022. Includes VAT cut on electricity from 24% to 10% (from December 2022 – April 2023). Promised financial support for each household. VAT cut to zero for public transport (from Jan 2023 – April 2023). Child benefit increase and childcare fees permanently lowered. Finland to Give $800 Million Aid for Households' Power Bills - Bloomberg	Windfall tax for energy producers.

Country	Support for consumers with energy bills	Support for businesses with energy bills
European Countries		
Norway	Norway has set a maximum price that households should pay for their energy - anything over this, the government will pay 80% of the bill.	A new package of loans and subsidies for businesses was announced in September 2022. This will cover companies that spend more than 3% of revenue on power costs. New taxes on onshore wind and hydropower energy proposed, to redistribute some of the huge increase in profits over the past year.
M – Czech Rep.	Awaiting Senate approval / doubts over this will actually happen: Energy Savings Tariff; approx. €1.3b is earmarked budget	EU approved €20.2m scheme to support agriculture producers affected generally by Ukraine War (increase of electricity, animal feed & fuel)
G7		Leaders agree to cap payments for Russian energy. Agreed on 2nd September 2022. Full Statement.

iv. Current UK national industrial energy finance and support schemes

Scheme	Target	Primary Purpose	Eligibility Criteria
To support reducing electricity costs			
Energy Bills Discount Scheme (EBDS) (April 2023-31 March 2024) Replaces the EBRS (see below)	For all non-domestic users and eligible Energy and Trade Intensive industries (ETIIs)	£5.5bn replaced the EBRS to soften businesses from the impact of future increases in electricity and gas prices. The scheme will be triggered when electricity and gas reach a certain price level. The discount reflecting the difference between a price threshold and the relevant wholesale price (see guidance on the EBDS).	Two discount levels: ■ The universal discount (for all companies) will be applied automatically to energy bills from April 2023 and to 100% of energy consumption. ■ For ETIIs, the discount will apply to 70% of the energy volume usage (this % is dictated by the subsidy rules of the European Ukraine Temporary Framework). The remaining 30% of energy volume usage will attract the universal level of support instead of market wholesale prices. ETIIs must apply for the higher support. ■ Eligible organisations will have 90 days from the scheme introduction date of 26 April to apply for the higher support ■ New organisations, or newly eligible organisations will have 90 days to apply from the date at which they become eligible. ■ Companies whose SIC code is not on the published list of eligible organisations and believe they qualify as an should apply.
Energy Bills Relief Scheme (EBRS) (price cap relief) 6 months (1 Oct-31 Mar) Replaced by the EBDS (see above)	For all non-domestic users with fixed, deemed, variable and flexible contracts.	To relieve businesses from soaring costs of wholesale of electricity and gas. The government will set a Supported Wholesale Price – likely to be £211 per MWh for electricity and £75 per MWh for gas – which is a reduced price per unit of gas and electricity. Will also include the removal of green levies paid by non-domestic customers Is equivalent to the wholesale element of the Energy Price Guarantee for households.	Review in January (for possible extension). The amount of price reduction each business will receive will depend on their contract type and circumstances. Only those with fixed contracts agreed on or after 1 April 2022 or entering new fixed price contracts after 1 October 2022 will benefit. Those who would have had fixed contracts earlier than 1 December 2021 (at massively lower prices) won't be supported.

Scheme	Target	Primary Purpose	Eligibility Criteria
The Energy-Intensive Industries (EIIs) exemption scheme	EIIs[24] compensation package aims to help big energy users stay competitive in a global market.	Exemption from the indirect costs of funding renewable energy generation, including Contracts for Difference (CfD), the Renewables Obligation (RO) and the small-scale Feed-in Tariff (FiT) to help EIIs stay competitive as our economy transitions to zero carbon.	The scheme's exemption (aid intensity) will be been increased to 100% (from 85%) of the indirect costs from April 2024 (after the EBDS ends). Eligibility is based on: ■ The business must manufacture a product in the UK within an eligible sector – the "sector level test", pre-defined by 4-digit NACE manufacturing codes 13-28, with a minimum of 4% overall sector trade intensity for the sector (based on turnover) and a minimum of 7% overall sector electricity intensity. ■ The business must pass a 20% electricity intensity test – the "business level test". ■ The business must not be an Undertaking in Difficulty (UID) – the UID guidelines explain that "an undertaking is considered to be in difficulty when, without intervention by the State, it will almost certainly be condemned to going out of business in the short or medium term." ■ The business must have at least two quarters of financial data. ■ The application must contain evidence of the proportion of electricity used to manufacture the product for a period of at least three months. ■ From March 2023, claimants will have to submit a plan setting out their decarbonisation pathway and how this supports net zero. Shortfalls: ■ The electricity intensive criteria is too restrictive: any sector outside the pre-defined ones is excluded, which includes some metals (e.g., non-ferrous metals, forgeries). ■ The individual business threshold of 20% electricity intensity is too high and excludes most energy-exposed (as defined by the WMIETF) companies. Even, however, if a company reaches 20% of energy intensity – and more and more (over a quarter in June) are now tipping into this category because of the soaring costs of electricity – they could still not be eligible if they don't belong to one of the pre-defined eligible sectors in the first place.
British Industry Supercharger (BIS) (under consultation) - first element confirmed to start in April 2024	Strategic Energy Intensive Industries (EIIs)	Aimed at reducing electricity costs for EIIs by £20/MWh by 2025 to bring electricity costs for EIIs in GB closer in line with those in the world's major economies.	The package of measures, implemented in a staggered manner, includes: ■ an increase from 85% to 100% relief through the Exemption Scheme from the costs of the renewable levies (from April 2024)- confirmed ■ a 100% indirect exemption from Capacity Market charges (proposed to follow in 2024); and ■ an EII Network Charging Cost Compensation Scheme providing relief from eligible network charging costs (proposed to be implemented in April 2025)

[24] *Sectors count as energy intensive if they carry out certain specified activities. The list of eligible activities specified in the government guidance is extensive and includes aluminium production, leather tanning and glass manufacturing. It also includes the manufacture of things as diverse as wallpaper, tyres and electronic components.*
See CFD – RO- FIT Exemption Guidance Government guidance

Scheme	Target	Primary Purpose	Eligibility Criteria
Carbon Price Support (CPS) compensation scheme and UK-ETS free allowances	The UK ETS and CPS mechanism are designed to reduce emissions.	To compensate those EIIs deemed to be exposed to a significant risk of carbon leakage due to the indirect emission costs of the UK ETS and CPS. *Although this scheme is not aimed to support companies with the cost of energy, the CPS is paid by all companies through the energy bill.* Therefore any relief on the levy will reduce bills.	These are the steps to assessing whether a business is eligible to claim compensation for the indirect costs of the UK ETS/CPS: ■ The business must manufacture a product in the UK within an eligible sector (determined by reference to the 4-digit SIC code). ■ The business must pass a 5% filter test ■ The legal entity manufacturing a product in GB, and this will typically be a business registered at Companies House. Shortfalls: ■ The EII CPS and UK-ETS compensation scheme has similar but more stringent criteria to the REE scheme. The list of activities is more restricted (e.g., only 14 four-digit SIC codes) defining the trade-intensive and electricity intensive EIIs. ■ The Baseline Electricity Cost (BEC) used for the electricity cost impact calculation is outdated- it is set at 2019 levels (13p/kW). This no longer reflects the higher prices and should be re-adjusted to current market levels. ■ Many businesses don't (/don't know how to) calculate their indirect carbon costs, let alone backdate this calculation for the past 5 years.
Climate Change Agreements (CCAs)	CCAs are available for a wide range of industry sectors, but generally those that are EIIs.	Climate change agreements are voluntary agreements made between UK industry and the Environment Agency to reduce energy use and carbon dioxide (CO2) emissions. In return, operators receive a discount on the CCL, a tax added to electricity and fuel bills. *Although this scheme is not aimed to support companies with the cost of energy, it requires to companies to reduce energy use.*	Exact criteria for eligibility can be found here[25], but in general: ■ An operator that has a CCA must measure and report its energy use and carbon emissions against agreed targets over 2-year target periods up to the end of 2022. ■ If an operator has more than one eligible facility in the same sector it can hold an individual CCA for each facility, or choose to group them together under one CCA. Where facilities are grouped under one CCA the target is then shared across the grouped facilities. ■ Once a facility, or group of facilities, is included in a CCA, it is referred to as a target unit. ■ If the operator's target unit meets its targets at the end of each reporting period, the facilities continue to be eligible for the discount on the CCL. Shortfalls: ■ Although CCAs are open to other non-EIIs, they have to be set up specifically for a sector (about 56 sectors have one) but some machining/tooling-cut ting processes commonly used in manufacturing (esp. boring, cutting, drilling, milling, grinding, pressing, turning, welding and burning) are not considered energy-intensive activities. ■ As mentioned about, the BEC used for the electricity cost impact calculation is outdated. This should be re-adjusted to current market levels. ■ CCA's use trade openness as a criterion, the definition of which is being reviewed (the choice being either trade intensity or important penetration ratio). This criterium is unclear, subject to interpretation and is currently under review by BEIS. The WM-IETF considers the manufacturing sector to be trade-exposed if not trade-intensive by nature as it exposed to global competition, either in domestic markets or when exporting. ■ The aim of the CCA scheme is to encourage energy efficiency. However, as the manufacturing sector electrifies its operations, this scheme will continue to penalise businesses for using a lot more electricity, although they are doing so for the right reason. ■ The scheme is not economically viable for smaller companies: industry bodies who administer the CCA typically charge £2000/year of fees. To make the participation in a CCA and not paying the Climate Change Levy worthwhile, a business needs to produce a lot of energy – in the order of 100 MWh/year, which is well beyond the possibilities of a mid-sized company.

[25] *https://www.gov.uk/guidance/climate-change-agreements–2*

Scheme	Target	Primary Purpose	Eligibility Criteria
Mineralogical and metallurgical processes exemptions	Businesses carrying out metallurgical and mineralogical processes.	Taxable commodities used in mineralogical or metallurgical processes are exempt from the main rates of climate change levy. The exemptions ensure the UK tax treatment of highly energy intensive processes is in line with tax treatments elsewhere in the EU, thereby reducing any distortion of competition.	■ Applies to those with energy used in metallurgical and mineralogical products, and their eligible processes is therefore 100% exempt from the Climate Change Levy. ■ Under the scheme, in return for meeting energy efficiency or carbon reduction targets, energy intensive industries conducting eligible processes could claim reduced rates of CCL. The reduced rates are currently 10 per cent of the full rate for electricity and 35 per cent of the full rates for other taxable commodities.
Funds for low carbon and energy efficiency technologies			
Industrial Energy Transformation Fund (IETF)	Open to all businesses.	The Industrial Energy Transformation Fund (IETF) is designed to help businesses with high energy use to cut their energy bills and carbon emissions through investing in energy efficiency and low carbon technologies. The Government announced £315 million of funding in the 2018 Budget, available up until 2025.	■ There is a minimum grant of 100K per application available, and the project must start by 1/2/24 and complete by 31/3/25. ■ However, there are exclusions, including projects that upgrade systems in buildings that are not integral to the industrial process itself, as well as the cost of installation, operation or maintenance of equipment.
Industrial Energy Efficiency Accelerator (IEEA)	Innovative companies in the Manufacturing and Waste sectors, as well as technology developers.	The IEEA programme aims to increase the number of technologies available to industry to help reduce energy consumption, maximise resource efficiency and cut carbon emissions.	The scheme applies to novel industrial process technologies with the potential to cut carbon emissions through reduced energy consumption and/or improved resource efficiency: ■ Phase 1: Projects were selected on their energy saving potential and scalability, with particular focus on technologies that can be deployed across multiple industrial sectors. ■ Phase 2: Technology developers and industrial companies applied to the IEEA with a combined submission. ■ Phase 3 and 4: Programme provide around £8 million in funding for the development and demonstration of technologies that could reduce energy consumption, maximise resource efficiency, or cut carbon emissions.
UKRI Transforming Foundation Industries	Foundation industries[26]	The challenge aims to transform the UK's foundation industries by making them internationally competitive, securing more jobs throughout the UK growing the sector by 2024 in an environmentally sustainable way.	Funds will be applied on a cross-sector basis and designed to improve collaboration and research aimed at improving the productivity and competitiveness of the sectors' companies and supply chains.

[26] *Foundation industries produce 75% of all the materials in the UK economy and account for approximately 10% of the UK's total carbon emissions (UKRI, 2020).*

Scheme	Target	Primary Purpose	Eligibility Criteria
Other fiscal support schemes and funds			
Full expensing (runs from April 2023 to 31 March 2026)		A new 100% first-year capital allowance for qualifying new main rate plant and machinery assets	
50% first-year allowance (FYA) for qualifying special rate assets (until 31 March 2026)		For expenditure by companies on new special rate (including long life) assets	
Super-deduction (superceded)	For all UK businesses.	The super-deduction will allow companies to cut their tax bill by up to 25p for every £1 they invest, on qualifying main rate plant and machinery investments, to encourage firms to invest in productivity-enhancing plant and machinery assets that will help them grow and recover from the Covid-19 pandemic.	The eligible plant and machinery that can be deducted are: ■ Computer equipment and servers ■ Tractors, lorries, vans ■ Ladders, drills, cranes ■ Office chairs and desks, ■ Electric vehicle charge points ■ Refrigeration units ■ Compressors ■ Foundry equipment
Annual Investment Allowance (AIA)	Available for all UK businesses including unincorporated businesses and most partnerships.	A 100% first-year relief on for eligible plant and machinery investments up to £1 million.	Eligible plant and machinery includes: ■ items that you keep to use in your business, including cars ■ costs of demolishing plant and machinery ■ parts of a building considered integral, known as 'integral features' ■ some fixtures, for example fitted kitchens or bathroom suites ■ alterations to a building to install other plant and machinery - this does not include repairs
Business rate relief – Green Technology	Businesses in England only.	This supports the decarbonisation of non-domestic buildings[27]. The business rates review announced that eligible plant and machinery used in onsite renewable energy generation and electricity storage, such as rooftop solar panels, wind turbines, and battery storage, plus electricity storage from any source where it is being used for electric vehicle charging points (EVCPs) will be exempt from business rates from April 2023 until 2035.	■ Making green technology, including solar panels and heat pumps, exempt from business rates from April 2022 will save businesses an extra £35 million in 2022-23, and is expected to be worth around £170m over the next five years to support the decarbonisation of buildings ■ A 100% relief for eligible low-carbon heat networks which have their own rates bill will also be available.

[27] *https://www.gov.uk/government/publications/spring-statement-2022-business-support-factsheet/spring-statement-2022-business-support-factsheet*

Scheme	Target	Primary PurposeE	ligibility Criteria
R&D Tax credits	Large companies and SMEs.	To support companies that spend money developing new products, processes or services; or enhancing existing ones. SMEs are able to claim up to 33p for every £1 spent, Large companies are able to claim up to 11p.	To be eligible the business must: ■ Be a limited company in the UK that is subject to Corporation Tax. ■ Have carried out qualifying research and development activities. ■ Have spent money on these projects. If you are classed as an SME for R&D tax credit purposes, your next step will be to make a claim via the SME R&D tax incentive. And if you are a large company, via the Research and Development Expenditure Credit (RDEC).

v. UK business models for green investment

Energy efficiency and low-carbon heating focus mainly on domestic and public sector buildings, with just the IETF left for industry.
There are also the various initiatives underpinning Industrial Decarbonisation (see 2023 Green Finance Strategy, p. 19) which focus mainly on CCUS (see below), nuclear, Resource and Energy Efficiency (REEE) measures, fuel switching in industrial processes, and fiscal measures. The Government funding (spent and committed) is described below.

There is a very big disparity between the funding for industry - which amounts almost exclusively to the IETF (£500 million) and partly heat networks and fiscal reliefs and compensations for EIIs **- and that for domestic buildings or the energy industry and infrastructure.**

At local level, £5 million of grants were distributed through the Local Industrial Decarbonisation Plans competition.

Energy efficiency and clean heat – *almost exclusively focused on domestic and public sector buildings*
£6.6 billion of public spending in this Parliament with a commitment to provide a further £6 billion for the period 2025-2028, to help reduce final energy demand from buildings and industry by 15% by 2030, and underpinning an integrated programme to improve the energy performance of buildings, support the roll-out of energy efficient products, explore how the energy retail market can support improved energy efficiency, deliver the commitment to replace fossil fuel heating with clean heat alternatives and improve energy efficiency across all businesses and industrial processes

Buildings: of these £12.6bn, almost £6.5 billion will be allocated for domestic and public sector buildings:
£1.9 bn as co-funding and grants to the social housing sector by 2030 and £1.425bn in grant funding for low-C heat and energy efficiency retrofits for the public sector

- Nearly £2.5 billion to drive progress through to 2025, with the Public Sector Decarbonisation Scheme & the Public Sector Low Carbon Skills Fund.
- Up to £1.5 billion through Social Housing Decarbonisation Fund and Home Upgrade Grant
- £1 billion per annum until 2026 through Energy Company Obligation (ECO 4) to support low income households
- The new £1 billion Great British Insulation scheme based on proposals announced last year as ECO+, which will extend support to a wider group of households to upgrade their homes.
- £450 million for the Boiler Upgrade Scheme between 2022-2025, which will be extended until 2028

Heat pumps:
- £30 million Heat Pump Investment Accelerator competition will incentivise the UK manufacture of heat pumps to improve supply of low-carbon heat.
- £15 million funding for 2023/24 Home Decarbonisation Skills Competition
- £5 million Heat Training Grant was launched in March 2023 to support training for heat pump and heat network installers.
- Up to £60 million Heat Pump Ready innovation programme
- £20 million Green Home Finance Accelerator for home green finance products and services

Heat networks:
£338 million in the Heat Network Transformation Programme, including £288 million for Green Heat Network Fund from 2022-2025. Capital support for low carbon heat networks has been confirmed into 2028, including £220 million over 2025/6 and 2026/7

Industry:
EITF: Part of the £315 million (increased to £500m subject to business case approval) Industrial Energy Transformation Fund (IETF) to future-proof decarbonise industrial sectors

Energy sector:
EITF: Part of the £315 million (increased to £500m subject to business case approval) Industrial Energy Transformation Fund (IETF) to future-proof decarbonise industrial sectors

Offshore wind
£100 million Offshore Coordination Support Scheme launched in 2022 to support well-advanced offshore wind and interconnection projects to coordinate their transmission infrastructure
£160 million committed to kick start investment in port infrastructure projects through the launch of the Floating Offshore Wind Manufacturing Investment Scheme.

Hydrogen
£240 million Net Zero Hydrogen Fund (NZHF) at its launch in April 2022
£30 million in BEIS funding for Phase 2 to support innovation in hydrogen BECCS
£60 million Low Carbon Hydrogen Supply 2 competition awarded for contracts for 23 feasibility studies and 5 demonstration projects

Nuclear
Large nuclear:
up to £1.7 billion of committed direct government funding to enable one nuclear project to Final Investment Decision this Parliament, and aim for 2 projects to Final Investment Decision in the next. As part of this £1.7bn funding, £700 million invested to take a 50% stake in Sizewell C (in partnership with EDF) in November 2022, having provided £100 million to support project development in January 2022- Hinkley point has spent £4bn on its supply chain to ensure 60% of British content.
£1.9bn/year of support to wider nuclear industry and supply chains through Nuclear Decommissioning Authority (NDA) spend.

Business models
BEIS/DESNZ are establishing market frameworks (including through the Energy Bill), to raise the confidence of the private sector in investing. These consist of

1. Revenue models giving investors more certainty about their returns e.g.
   - Contracts for Difference (CfDs) now on an annual basis to drive rapid deployment of renewable electricity, for both established and emerging technologies, including offshore wind, onshore wind, solar, tidal, geothermal and floating offshore wind. Initial budget of £205 million, with the ability to increase it once the participation pipeline becomes more certain.
   - Business models for hydrogen, CCUS (the Industrial Carbon Capture (ICC, published in December 2022), the nuclear (Nuclear Regulated Asset Base (RAB) model), GGRs (Technology-neutral model consultations ongoing) and Power BECCS (power bioenergy with carbon capture and storage- responses to consultation on specific model due in 2023)
2. The green finance policy framework, which seeks to ensure sufficient private capital is available to finance net zero objectives
3. Targeted public investment, e.g.
   - the Advanced Fuels Fund for Sustainable Aviation Fuels (SAFs), or the UK Investment Bank (UKIB), the role of which is detailed in the 2023 Green Finance Strategy
   - significant public investment in research and innovation, with £4.2 billion in net zero research and innovation over the period from 2022-25 (Net Zero Research and Innovation Framework (2023): Delivery plan (published 2023)

Electricity storage
£33 million (out of a total £68m fund) awarded to the Longer Duration Energy Storage (LODES) programme to accelerate the commercialization of of innovative longer duration energy storage projects. Further recipients of funding to be announced early 2023.

Grid flexibility and infrastructure
Flexibility
Up to £65 million committed for the Flexibility Innovation Programme (FIP) to enable large-scale widespread electricity system flexibility. Over £17.5 million already awarded (through competition) to successful projects e.g. Interoperable Demand Side Response, Alternative Energy Markets, Vehicle-to-Everything, Inclusive Smart Solutions and a range of Data and Digitalisation programmes.

Infrastructure
Ofgem's Strategic Innovation Fund is investing £450 million in energy network innovation from 2021-2026, with the option to extend and increase as necessary.

- **Transmission**
  Ofgem's Accelerating Strategic Transmission Investment decision in December 2022 set out an accelerated regulatory approval process for £20 billion of transmission projects (which will not be subject to competition) identified in the Holistic Network Design.
- **Distribution networks**
  A regulatory settlement of > £22 billion of initial investment (by Ofgem) in the local networks was announced in November

Finance
The Government announced in the Budget that it will support the development of Investment Zones to drive local economic growth. Green business sectors are one of the five priority sectors for new Investment Zones and all Investment Zones are also required to demonstrate their contribution to national net zero and environmental targets.

Fiscal measures
- Climate Change Agreements (CCA) scheme (for energy intensive processes) extended by 2 years, new business models for future low-carbon technologies- see above)
- Energy Intensive Industries (EII) Compensation Scheme extended for a further 3 years
- the alignment of the UK ETS and Free Allocation policy to net zero is under consideration
- a carbon leakage policy is under consultation, including a Carbon Border Adjustment Mechanism (CBAM) and Mandatory Product Standards(MPS
- a clear approach to gas vs. electricity relative price 'rebalancing' by the end of 2023/4

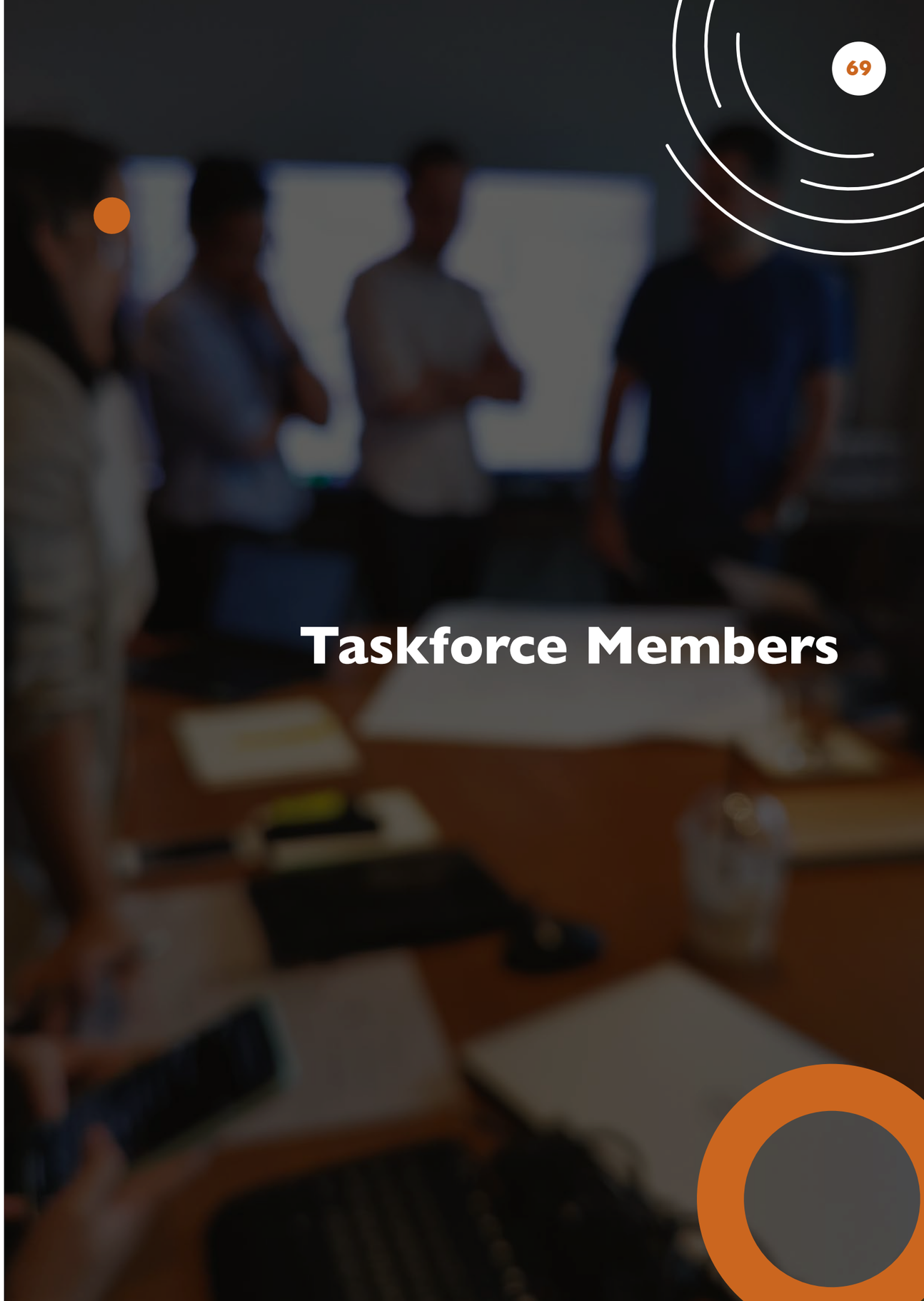
References:
Power Up Britain- energy security (March 2023)
Power Up Britain- net zero growth plan (March 2023)
2023 Green Finance Strategy (March 2023)

Scheme	Target	Primary Purpose	Eligibility Criteria
Contracts for Difference (CfD) scheme	For all non-domestic users For businesses that generate a surplus of low-carbon electricity to sell back to the Grid and for developers of RE technologies	CfDs incentivise investment in renewable energy by providing developers of projects with high upfront costs and long lifetimes with direct protection from volatile wholesale prices, and they protect consumers from paying increased support costs when electricity prices are high.	■ CfDs are awarded in each of the allocation rounds to developers of specific technologies varying from nuclear to wind, wave, anaerobic digestion, landfill and gas. ■ Developers are paid a flat (indexed) rate for the electricity they produce over a 15-year period; the difference between the 'strike price' (a price for electricity reflecting the cost of investing in a particular low carbon technology) and the 'reference price' (a measure of the average market price for electricity in the GB market). Shortfalls: ■ The scheme is too slow in reflecting the rapid technological developments of low-carbon technologies and fails to pass the low costs of renewable energy to customers.
Net Zero Innovation Portfolio (NZIP)	Funding is being made available for projects nationally via competitive application.	The Net Zero Innovation Portfolio is a £1 billion fund, to accelerate the commercialisation of low-carbon technologies, systems and business models in power, buildings, and industry.	Development of innovative technology deployment across industry, with funding dedicated towards key areas of industrial decarbonisation, including: ■ Hydrogen, CCUS, bioenergy and disruptive technologies such as artificial intelligence for energy management. ■ The Net Zero Innovation Portfolio succeeds the BEIS Energy Innovation Programme (EIP) which ran from 2015 to 2021.
UKRI Industrial Decarbonisation Challenge	Business across the six industrial cluster across the UK[28]	To directly support the facilitation of four low-carbon industrial clusters by 2030 and at least one net zero cluster by 2040, by supporting the development of low carbon technologies such as CCUS and hydrogen at scale.	The Industrial Decarbonisation Challenge is split into three workstreams: ■ Deployment of core infrastructure ■ Cluster plans (engineering and business) ■ Industrial decarbonisation research and innovation centre (demonstration of cost-effective technologies and processes) It will cut across: ■ Tees Valley ■ Scotland ■ Humber ■ North West ■ South Wales ■ Black Country
Hydrogen		Aims to generate (by 2030) enough clean electricity to power all of London for a year and to attract investment in 10 GW of low-carbon hydrogen production capacity by 2030 (mostly to power heavy industry, transport and up to 70,000 homes)	The UK's first hydrogen strategy is supported by £105m in direct funding aims to support more than 9,000 jobs and add £900m to the UK economy by 2030, and 100,000 jobs and £13bn by 2050. A shortlist of projects for due diligence and confirming further details on electrolytic hydrogen allocation rounds will be announced later in 2023. Business model: Contracts for Difference The Low Carbon Hydrogen Agreement (the business model contract between the government appointed counterparty and a low carbon hydrogen producer), will provide revenue support to hydrogen producers to overcome the operating cost gap between low carbon hydrogen and high carbon fuels. It has been designed to incentivise investment in low carbon hydrogen production and use, to achieve its 10GW production aim.

[28] *Industrial decarbonisation challenge – UKRI*

Scheme	Target	Primary Purpose	Eligibility Criteria
Biomass Feedstocks Innovation Programme	Those in breeding, planting, cultivating and harvesting [29]	To produce innovations that address some of the barriers to feedstock production, helping to scale up the supply of UK sustainable biomass. £30 million in BEIS funding for Phase 2 to support innovation in hydrogen BECCS (bioenergy with carbon capture and storage) technologies.	Competition programme split into two: ■ Phase 1: project plans for technology innovations to develop strong proposals that will deliver commercially viable innovations in biomass production. ■ Phase 2 (ongoing): enaction of phase 1 projects (constructing, operating, testing, refining and evaluating, with a clear commercialisation route for deployment).
CCUS		The first 2 CCUS clusters in the North East and North West (eight projects to progress to negotiations have been announced in April 2023) CO2 storage: a major licensing round was launched last year (2022)	A process to enable expansion of those Track-1 clusters will be launched later in 2023. The process for confirming the next clusters for deployment in Track-2 is also being launched. The Industrial Carbon Capture (ICC) business models have been designed to incentivise the deployment of carbon capture technology by industrial users who often have no viable alternative to achieve deep decarbonisation. The ICC business models comprise a capital grant (for Track-1 / Phase-2 projects) which will be funded by the £1 billion CIF, and/or ongoing revenue support which will be funded by the Industrial Decarbonisation and Hydrogen Revenue Support (IDHRS) scheme. There are two variants of the revenue support contracts: ■ the 'generic' "ICC Contract" for successful CCS projects from all eligible industrial sectors (except from waste management CCS projects), ■ The "Waste ICC Contract" which would be offered only to waste management CCS projects.
Great British Nuclear (GBN)	Nuclear plant developers and supply chain (manufacturers of components)	GBN will be responsible for driving delivery of new nuclear projects, to support ramping up nuclear capacity in the UK to up to 24GW by 2050. Supply chain: nuclear power station Hinkley Point C spent over £4.1 billion with suppliers in the Southwest to date and EDF anticipate that 64% of the construction value of the project will be spent with UK firms, with over 22,000 people nationwide currently working on the project.	£210 million awarded to Rolls-Royce SMR Ltd in November 2021 to develop further their design for one of the world's first Small Modular Reactors (SMRs) A competitive process will be launched to select the best Small Modular Reactor technologies. Business model: Nuclear Regulated Asset Base (RAB) model

[29] *Biomass Feedstocks Innovation Programme - GOV.UK (www.gov.uk)*



Taskforce members

Matthew Rhodes
Taskforce Chair

Matthew Rhodes is chair of the Taskforce. He is managing director of Camirus Limited, and has worked in manufacturing and clean energy for over 30 years. Since 2016, he has led efforts across the West Midlands to secure industrial and commercial advantages from the energy transition, initially as a board member of GBSLEP and subsequent to the creation of the Combined Authority as the private sector chair of WMCA Energy Capital. Since 2021 he has also led the Black Country Industrial Cluster Project, Repowering the Black Country.

Rossella Cardone
Director, Sustainability – JLR

Rossella was appointed to the position of Director in January 2022 to lead the Sustainability Office, with responsibility for helping Jaguar Land Rover to define the sustainability strategy, approach and targets for the company, and achieve its net zero ambition across vehicles, supply chain, and operations.

Corin Crane
WM Chambers of Commerce

Corin is the Group Chief Executive of the Coventry & Warwickshire Chamber of Commerce (CWCC) which includes Coventry and Warwickshire Chamber Training and Destination Coventry.

Corin was Director of the Leicester & Leicestershire Enterprise Partnership where he had overall responsibility for around £200m of funds to drive regeneration and help local businesses grow. Also, he chaired the European Structural Funds Committee and lead on the Area Review for Leicestershire. In 2016 Corin became the Chief Executive of the Black Country Chamber of Commerce who are secretariat for the Black Country All Party Parliamentary Group (APPG) and lead on the creation of the Black Country Business Festival which became the second biggest festival of its kind in the UK.

Before this, Corin had roles with the TUC in Yorkshire and Humberside, Advantage West Midlands Rural Regeneration, Learning and Skills Council and Telford and Wolverhampton Councils heading up Economic Development and Inward Investment teams.

Martin Dudley
Chairman – Thomas Dudley

Martin graduated from Brunel University as a manufacturing engineer in 1991. He spent a short time working at Rover Group, with whom he had been sponsored, before going to work at Thomas Dudley Limited, a family business, in 1992. Thomas Dudley Group Limited is a well-established fourth generation family business based in Dudley, West Midlands. It employs almost 500 people and makes components for the building and plumbing industry, water companies and trade OEM customers. The company turned over £50M in 2019. Within the group there are two modern iron foundries, two plastic injection moulding businesses, zinc diecasting and waterfitting manufacturing. Martin took an MBA through Wolverhampton University in 1998 and is passionate about increasing the skills both within his businesses and also the local area, and works closely with schools, colleges, the university and trade associations, most notably helping to establish the first foundry training college to be set up in the last 30 years.

Rachel Graville
Managing Director – William King

Rachel Graville is the fourth-generation managing director of William King, which operates four technically advanced facilities in West Bromwich, Walsall, Washington in the North East and in the Czech Republic, and adds value to supply chains by supply chain management, processing and just-in-time delivery of metals.

The company currently works with several high-profile customers across the automotive, domestic appliance, metal packaging and general industry sectors, with the recent acquisition of Firsteel giving it the capability to provide specialist coated metals.

Cheryl Hiles
Director – WMCA Energy Capital

Cheryl is Director of Energy Capital at the WMCA. She is driving the delivery of the West Midlands Regional Energy Strategy and energy devolution ask to Government, to ensure the West Midlands has the necessary tools, powers and resources to meet its green recovery and net zero ambitions. Cheryl pioneered the West Midlands Net Zero Pathfinder programme and is responsible for leading a variety of smart local energy system innovation initiatives. These form the evidence base that demonstrates the value of local solutions and part of a package of measures to achieve our national net zero objectives. Prior to leading Energy Capital, Cheryl was the sector director for energy and environment at Pell Frischmann design engineering consultancy, but spent the majority of her 20-year career at Regen, championing democratic, decentralised and decarbonised energy solutions.

Charlotte Horobin
Make UK

Make UK is the largest voice supporting UK manufacturing. Charlotte's role as Region Director is to engage Make UK's members and assist them in advancing as a manufacturer by providing bespoke introductions, providing industry insight, attendance at events & networking, promoting their business and ensuring their views are heard. Another key part of her role is to engage with regional stakeholders ensuring manufacturers' interests are represented to LEPs, the West Midlands Combined Authority, Midlands Engine and the Greater Cambridge Greater Peterborough Combined Authority. Charlotte is also a Trustee of the WMG Academy for Young Engineers, a Careers and Enterprise Advisor in Lincolnshire, a Board Member of the West Midlands Growth Company and is a Senior Industrial Fellow with The Advanced Services Group at Aston Business School.

Steve Morley
President – CBM

CBM and ICOSPA (International Council of Sheet Metal Press Work Associations) President Stephen Morley is an automotive expert with over 40 years' experience including Operational and Engineering Director roles. He has studied manufacturing processes across Europe, Japan and China. Steve had been a Director of the Confederation of British Metalforming (CBM) for 4 years before being appointed as President in 2018. CBM is the leading trade association for UK Manufacturers of fasteners, forgings, pressings and cold rolled products. Steve additionally works as the President of International Council of Sheet Metal Presswork Association (ICOSPA) as the UK have recently held the presidency of this global association for the last 5 years. He is also a member of the Metal Forum and UK Metals Council, lobbying Government and challenging business policy.

Pierre-Yves Pineau
Mondelez Bournville

Pierre-Yves Pineau is the Facilities Manager for Mondelez Bournville (Cadbury). With a Master's Degree in Industrial Engineering, he has developed a strong interest in environmental improvements and energy reduction. In his current role he plays a key part in developing and implementing the energy optimisation road map for the site. Pierre-Yves has a broad industrial experience in various roles and industries such as L'Oréal, AkzoNobel in France and the UK.

Tom Westley
Chairman – Westley Group

Tom is a graduate of Imperial College in Metallurgy. He worked on a copper mine in Mufulira, Zambia before joining the family foundry business in 1974. The business has grown to be a European/Global leader in the casting of corrosion resistant and heat resistant copper and nickel based alloys. Tom has been Chairman of Westley Group Ltd since 1989. He was Chairman of Castings Technology International Ltd, based in Sheffield, from 1998 until its sale to the University of Sheffield in 2013.

He is Chairman of Westley Plastics Ltd and its subsidiary Runflat International Ltd.

Tom is a Governor of Dudley College and a trustee of Dudley Academies Trust. He sits on the West Midlands Combined Authority Board and is Vice Chair of the Economic Growth Board of the WMCA. He is also a director of WMCA Growth Company Ltd and a supporter of several locally based charities.

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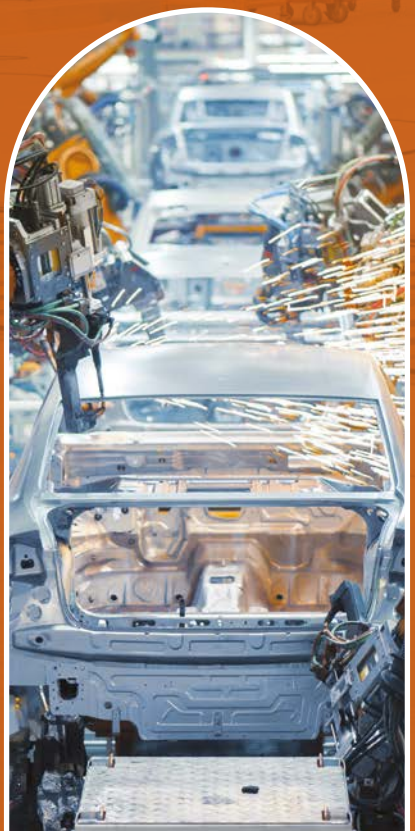

West Midlands
Industrial Energy Taskforce

www.wmindustrialenergy.co.uk