GMB

UNION

Congress 2021

CEC Special Report on Energy and the Environment

GMB Union

On your side

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CEC Special Report on Energy and the Environment

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1. Introduction

1.1 GMB is proud to be an energy union. Across the economy, our members keep the lights on and the production lines moving. Many of our members work in energy-intensive industries. All our members are energy consumers and bill-payers.

1.2 The decarbonisation of energy – as part of the transition to a net-zero emissions economy - is one of the most important policy challenges that faces the country and our members.

1.3 Building on our existing policies and campaigns, this report sets out a progressive agenda for GMB in the 2020s and onwards as we approach the legal target for reaching net-zero by 2050.

2. Background

2.1 GMB was forged in the 'scandalous, brutal, and inhuman'[i] conditions of Beckton Gas Works, when 18-hour shifts, casualisation, and victimisation lit a flame that changed the world of work forever. From those beginnings, rooted in the unforgiving late Victorian struggle for industrial freedom for all workers, the National Union of Gas Workers and General Labourers and its successor unions emerged as one of the most important forces for social and economic change in the UK's history.

Heating the retorts at Beckton Gas Works[ii]

"The retort houses are exceedingly hot, for both behind and in front of the stoker are the burning eyes of the furnaces; amidst the roaring of the heat-hungry retorts a breeze as of hell fans me. This is my job; these are my conditions."

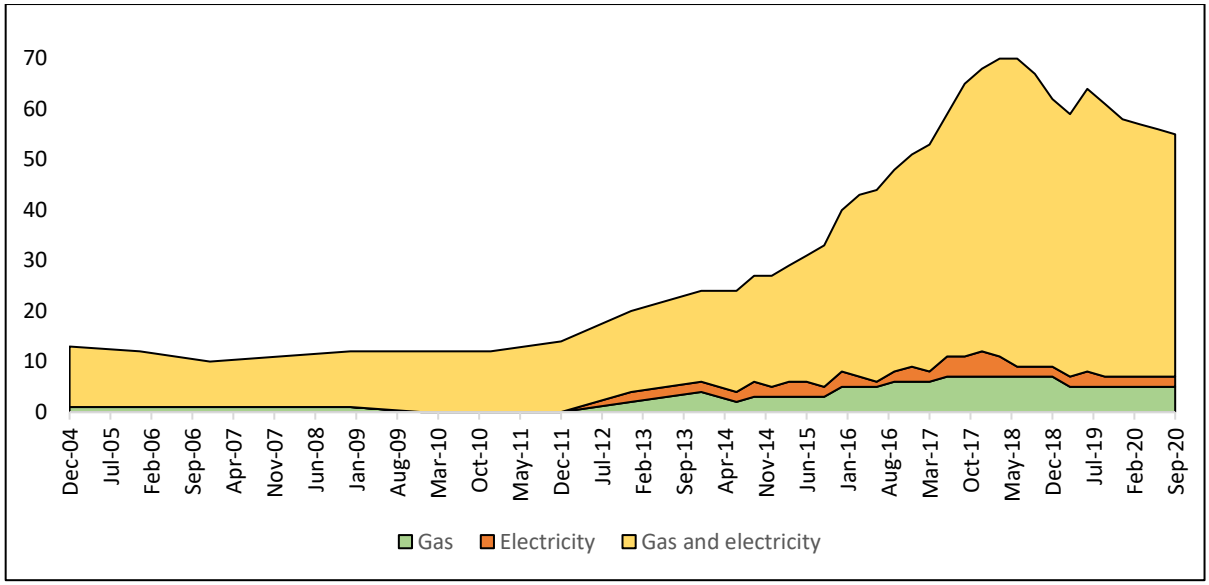
Will Thorne, describing late 19th century gas production[iii]

2.2 GMB has remained the largest energy union through the difficult years of privatisation and the Government-directed destruction of the domestic coal mining industry. We are committed to defending jobs and good quality employment in the energy industry today.

2.3 Energy jobs remain an important source of skilled and relatively well-paid employment. Average wages in the sector are 35 per cent higher than the average for all jobs.[iv] There can however be no room for complacency. Terms and conditions are under attack, including most recently and prominently at British Gas. As discussed in this report, jobs could be lost on an industrial scale if the right political decisions on decarbonisation are not made now.

2.4 Good quality employment is also at risk due to the fragmentation of the supplier market. Successive Governments have encouraged the growth of providers in the name of consumer choice. The number of consumer energy companies has grown more than threefold in the last decade, fragmenting the market and encouraging a 'race to the bottom' in employment standards.

Gas and electricity - number of consumer providers 2004 to 2020[v]



2.5 However, consumer choice is to some extent illusory: the market has grown at an unsustainable rate, and a number of high-profile suppliers have failed in recent years including Yorkshire Energy, Green Energy, and the municipally-owned Robin Hood Energy company. An estimated 1.8 million customers have been forcibly transferred to other providers since 2016 due to market failure.[vi] This 'boom and bust' cycle of unsustainable growth, which is followed by financial collapse, is an ongoing cause of distress and uncertainty for many energy workers.

2.6 The fragmented market created by privatisation is a cause of higher prices. Money leaks from the cracks created by complex contractual interfaces at every level. Pre-tax UK electricity prices are 47 per cent higher than the average for other International Energy Association countries,[vii] which reduces the funding available for investment.

2.7 Unfair pricing contributes to deep social inequalities. The poorest households spend almost seven times more, as a proportion of income, on heating and power than the richest.[viii] Fuel poverty remains a social scourge: despite some reductions, more than 3 million households (or one in five households with children) are estimated to be in fuel poverty.[ix] An estimated 3,200 excess winter deaths are associated annually with fuel poverty (this is higher than the number of deaths attributed to skin cancer or substance misuse).[x]

2.8 Successive governments have invested enormous political capital in encouraging 'switching,' but only some households are likely to switch: an estimated 11 million households remained on exploitative tariffs in 2018,[xi] including 4.3 million of the lowest income households that use prepaid meters.[xii] GMB has long argued that the Government's price cap – which was introduced following the stubborn failure of its policy of encouraging switching - has failed to strike the right balance between preventing excess profits while securing investment and protecting jobs.

2.9 Billions of pounds have leaked out the energy industry even while these pressures have grown. The traditional 'Big Six' paid a collective **£8.9 billion** in dividends alone in the five years leading up the pandemic. The most generous payments to city speculators were made by Centrica PLC, which paid **£3.1 billion** to investors between the start of 2015 and the end of 2019 – while shedding 9,750 jobs over the same period.[xiii] This is money that could, and should, have been spent on investment and lower bills instead. As an initial step, we support a Government-led inquiry into the corporate behaviour of the 'Big Six' energy companies, with the long-term goal remaining public ownership of the industry.

2.10 The energy industry faces profound changes in the years ahead. There is an imminent capacity shortfall as nuclear plants are retired. Having initially threatened to ban gas boilers in new homes from 2025, the Government has now announced that it will 'set a clear path that sees the gradual move away from fossil fuel boilers over the next fifteen years.'[xiv] The policy – now enshrined into law – of reaching 'net-zero' emissions by 2050 could have profound implications for the energy industry, energy users, and our members jobs.

2.11 Our policies, which we reiterate and reaffirm at this Congress, include:

- Energy supply is a natural monopoly. GMB supports the public ownership of energy generation and supply.

- GMB supports a balanced energy mix in which renewables, gas (including hydrogen and biogas) and nuclear all have a part to play in meeting the needs of different consumers and supporting the UK's transition to a net-zero carbon emissions economy.

- We believe that environmental subsidies should be funded out of general taxation, not through regressive charges on bills that hit the poorest the hardest.

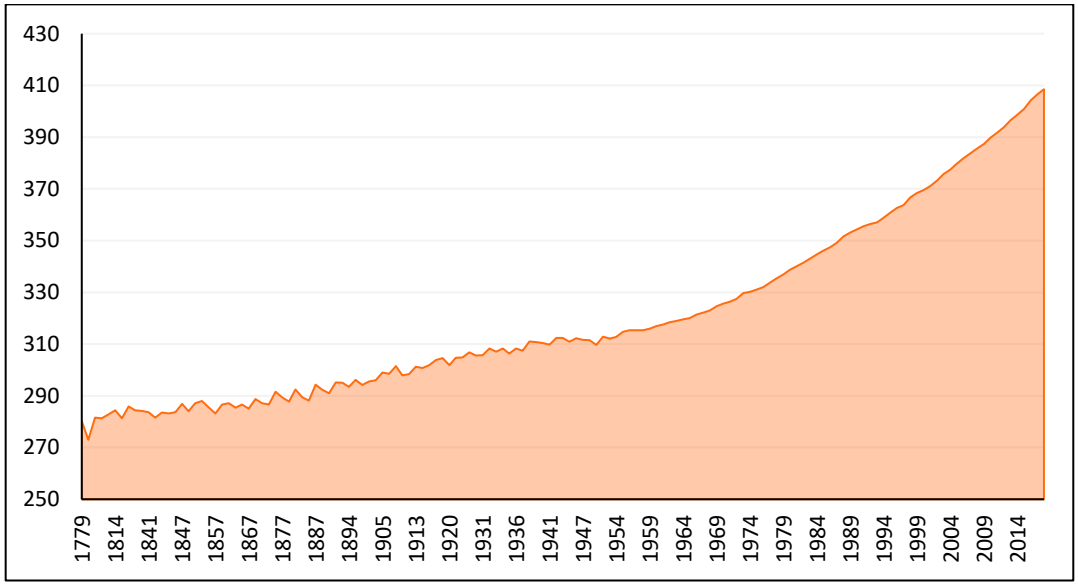
<u>The environment and energy in a time of change</u>

2.12 The future of the energy sector and environmental policies cannot be considered separately. They are inextricably linked. All man-made carbon emissions are linked to energy production or use. At a time when the Government is seeking to achieve 'net-zero' emissions for the UK by 2050 – and others seek a faster timetable – we must ground our response on our environmental principals and the industrial interests of our members. GMB is already addressing the issue through industrial agreements – including the Devonport Environmental Sustainability Agreement and the offshore Energy Services Agreement – and this report sets out a national policy agenda that builds on our existing approach and campaigns.

2.13 GMB recognises that we are in the grip of a climate crisis created by man-made global warming, and that global warming is the gravest long-term threat that faces the planet.

Global average temperatures have already risen by more than 1 degree Celsius since the pre-industrial era. The concentration of carbon dioxide in the atmosphere is far above pre-industrial levels, and for all the claims of progress, the rate has increased by 15 per cent since the Kyoto Protocols were signed in 1990. The OECD estimates that, by the end of the century, global average temperatures will be between 3 and 6 degrees Celsius higher than before the industrial age.[xv]

CO2, global atmospheric concentrations (parts per million)[xvi]



2.14 Without action to reduce emissions, the consequences will include rising sea levels, the extinction of vulnerable species, a higher frequency of natural disasters and human diseases that are linked to pollution, and the degradation of natural habitats. Across the world, the social costs of global warming will disproportionately fall on those with less. Addressing global warming is a moral and a pragmatic duty.

2.15 Despite the decision to write an ambitious target for carbon reductions into law,[xvii] the Government's policies are breaching the social contract. As this report explores, a climate crisis has been matched with a jobs crisis. Jobs in energy-intensive industries are being eroded but renewables contracts are flowing overseas. The cost of funding renewables subsidies through charges on bills falls disproportionately on low-income households. By contrast, GMB's policy of funding subsidies out of general taxation would reduce costs for 65 per cent of households (and reduce the lowest-income households' costs by £98 a year).[xviii]

2.16 Environmental and social objectives should not be in contradiction.
GMB supports the Silesia Declaration, which was published as part of the 2018 United Nations Climate Change Conference (COP 24). The Declaration stated that for the language of a 'just transition' to be meaningful, environmental policies must be developed through 'social dialogue,' as part of a process that 'creates decent work and

quality jobs.'[xix] In other words, change must be done with workers – not to them.

2.17 In August 2018, senior reps from the energy unions – GMB, Prospect, Unite, and Unison – agreed a statement on what a true just transition would look like, grounded on the principles of:[xx]

- A balanced low carbon energy mix
- Investment in skills and infrastructure
- Protecting and creating high-quality jobs and employment
- The conversation led by the workers most affected
- No community left behind

We recognise that regional just transition plans will be crucial to the success of any net-zero policy, and we endorse proposals for just transition plans that are in full and genuine consultation with trade unions on a social partnership basis.

2.18 We further believe that there are paths for all the GMB-organised industries to play their part in meeting the net-zero emissions target: from aviation to energy production and chemical manufacturing. But the window for a socially-just transition is narrowing.

2.19 We recognise that some have pushed for an earlier date for achieving net-zero. The Committee on Climate Change has warned that, on current progress and technology, it does not 'consider it credible to aim to reach net-zero emissions earlier than 2050.'[xxi] In April 2021, the Government announced that it would intend to reduce carbon emissions by 78 per cent by 2035 compared to 1990 levels.

2.20 While we want to achieve net zero as soon as is practicable and compatible with the labour movement's traditional social objectives, GMB has argued that no credible plan has been produced for protecting jobs and good quality employment under accelerated timetables, such as a target of net-zero by 2030. Without such a plan, the most ambitious targets could only be achieved through mass lay-offs and the exporting of demand (and carbon emissions) overseas. As such, we support achieving net-zero emissions by 2050, or faster if a real and credible plan for protecting good quality, unionised employment can be produced. The test for any change in our position will be whether our members in the most affected industries can be convinced of the credibility of any alternative proposals, as determined through our democratic structures.

2.21 While we support the 2050 net-zero target, it is also important to recognise its limitations. The target relates to UK territorial greenhouse gas <u>production</u>, not consumption. It would be self-defeating to close down carbon-intensive production in the UK if the effect is to export demand to other countries that have higher carbon production costs (and, in some cases, appalling human rights records).

2.22 Territorial emissions alone are a limited measure: as Dieter Helm – who led the Government's review of power systems' costs – has warned, one of the fastest ways of

ending territorial emissions would be to 'close the rest of the British car industry, and INEOS's Grangemouth petrochemical plant too.'[xxii] Climate change is a global problem that requires a co-ordinated global response, and this report sets out an agenda for how the UK can play a more active part.

2.23 Reaching net-zero will have different implications for individual industries. The reality is that some industries will always be difficult to decarbonise, and while every effort should be made to achieve carbon reductions within individual industries, it is the overall balance across the UK that counts. This report sets out an ambitious programme for investing in our natural habitat, as part of a post-Covid stimulus package, that will protect our homes from flooding, naturally capture carbon emissions, and improve working people access to natural beauty and their quality of life.

2.24 Looking to the middle of this century, we want to see a strong international effort that has brought global warming under control, with investment in the technology of tomorrow, and strong, unionised UK supply chains. This report sets out an ambitious agenda for making that possible.

3. The environmental jobs crisis

3.1 We need to slow down and reverse the warming effects on the climate caused by greenhouse gases. Pursuing an arbitrary timeline for decarbonisation, however, could have a disastrous effect on jobs. The effect would be to force contracts and jobs overseas, while our responsibilities and carbon emissions would be outsourced to other nations.

3.2 Although billions have been spent on renewable energy, the promised 'green jobs of tomorrow' have not materialised in any volume. Some economists have even argued that 'renewable energy conveniently requires less labour for operation and maintenance'[xxiii] than traditional energy sources, and that the UK should speed the transition to renewables to save on long-term labour costs. GMB rejects this cynical attempt to undermine good quality employment.

3.3 Under the current failed free-market models, the Low Carbon and Renewable Energy Economy (LCREE) has actually shrunk over recent years. ONS data shows that between 2014 and 2019 the estimated employment within the LCEE fell from 235,900 to 202,100 – a loss of 33,900 FTE jobs.[xxiv] The ONS includes the following sectors as part of the Low Carbon and Renewable Energy Economy:

Sector (UK Wide)	2014 Employment Estimate FTE	2019 Employment Estimate FTE
Offshore Wind	6,300	7,200
Onshore Wind	7,000	4,400
Solar Photovoltaic	9,800	6,800
Hydropower	1,100	1,100
Other Renewable Energy	1,200	400
Carbon Capture Storage	300	100

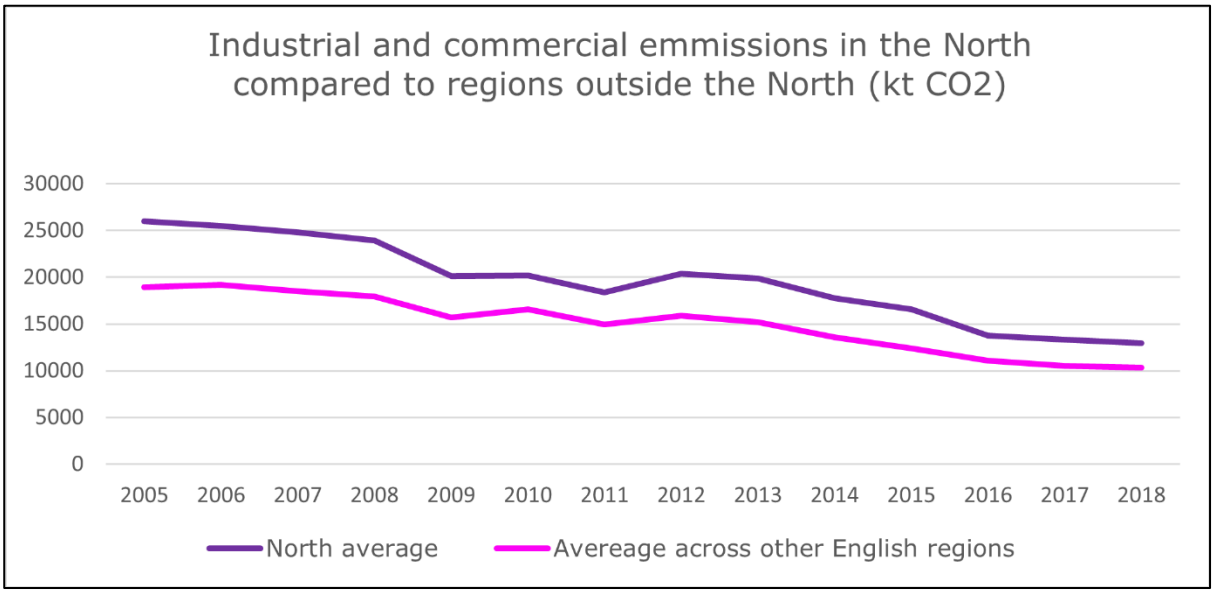
Nuclear	15,100	16,900
Renewable Heat	4,500	6,100
Renewable Combined Heat and Power	1,500	1,400
Bioenergy	11,700	8,500
Alternative Fuel	600	800
Energy Efficient Lighting	18,000	27,000
Other energy efficient products	119,200	81,300
Energy monitoring, saving, or control systems	17,600	18,400
Low carbon financial and advisory services	11,800	4,700
Low emission vehicles and infrastructure	9,300	15,900
Fuel Cells and energy storage	900	1,000

3.4 In September 2020, the Prime Minister declared that the UK can be the 'Saudi Arabia of wind power,'[xxv] and the Government's 'Ten Point Plan for a Green Industrial Revolution' states that the offshore wind sector should be supporting up to 60,000 jobs.[xxvi] In reality, the sector is estimated to support just 7,200 jobs directly, and the true figure could be as low as 5,900.

3.5 Yet, while GMB has campaigned to save fabrication jobs within the wind sector in the UK, our Westminster and devolved governments have failed to invest in our yards, and the work has been sent to the other side of the world. Communities in Fife Burntisland and in Arnish have had the indignity of campaigning for work to remain in their yards, only to look out from their coastlines to see offshore wind farms being erected that have been made elsewhere.

3.6 Historically, reductions in the UK's carbon emissions have been associated with deindustrialisation and the decline of manufacturing industries. There was a strong and statistically significant association between reductions in UK greenhouse gas emissions and the loss of 2.3 million manufacturing jobs in the years 1990 to 2013.[xxvii] Half of the UK's greenhouse gas emission reductions in 2016 were associated with the closure of the SSI Redcar steelworks.[xxviii]

3.7 Job losses tend to be concentrated in particular communities. Our manufacturing industries are some of the most fossil fuel-intensive users and they are among the sectors most at most risk from a poorly timed transition. The manufacturing base in the UK directly employs over 2 million workers with approximately 750,000 workers based in the North of England. According to IPPR analysis, industrial and commercial CO2 emissions have remained higher than the average in other English regions.[xxix]



3.8 The hard reality is that jump to net-zero within just a few years, and without a real plan for jobs, would be a social disaster reminiscent of the colliery closures in the 1980s and 1990s. Fourteen out of the fifteen industries with the highest gross emissions are organised by GMB. We cannot endorse rushed targets for these industries, nor vague promises of retraining for jobs that do not exist.

Jobs in the 15 industries with the highest UK greenhouse gas emissions, 2018[xxx]

Industry description	GHG k/tonne equivalent	Share of GHG emissions (%)	GB jobs
Products of agriculture, hunting and related services	47,677.2	8.5	196,000
Air transport services	45,909.3	8.1	75,000
Electricity production – gas	*45,713.2*	*8.1*	*29,000*
Electricity production – coal	*28,092.9*	*5.0*	
Electricity production – other	*15,015.0*	*2.7*	
Waste collection, treatment and disposal services; materials recovery services	20,132.7	3.6	130,000
Crude petroleum and natural gas	19,999.2	3.5	13,000
Manufacture of refined petroleum products	14,071.7	2.5	9,000
Freight transport by road and removal services	12,951.6	2.3	290,000
Water transport services	12,150.4	2.2	14,000
Manufacture of basic Iron & Steel	10,735.8	1.9	33,500
Manufacture of cement	7,486.3	1.3	1,250
Retail trade services, except of motor vehicles and motorcycles	7,426.5	1.3	2,771,000

Wholesale trade services, except of motor vehicles and motorcycles	7,227.4	1.3	1,159,000
Manufacture of petrochemicals	6,458.7	1.1	18,050

3.9 Instead, GMB supports the development of sustainable plans for decarbonising these sectors to the greatest extent practicable, in full consultation with the workers who are most affected by industrial change. This process must be set against a goal for net-zero emissions for the whole economy, with the UK playing its full part in supporting global reductions in emissions.

3.10 To achieve a neutral balance across the UK as a whole, we need urgent investment in proven Carbon Capture Utilisation and Storage technology, alongside a major programme for restoring the natural habitat. Over 3 billion tonnes of carbon are estimated to be stored in the UK's peatlands alone, and 80 per cent of peats are degrading and emitting more carbon than they store.[xxxi] A massive policy of restoring forest areas would create natural 'carbon sinks' to balance out those industries that cannot be fully decarbonised, improve air quality, provide an new stimulus measure, and increase the beauty of our land for working people to enjoy at times of leisure.[xxxii]

3.11 GMB supports calls for a Green New Deal that are built on the principles of environmental and social justice. We brought forward plans for a Green New Deal at TUC Congress 2019.[xxxiii] No one group has a monopoly on what the detail of what should comprise a socially just Green New Deal, and this report sets out policies that GMB believes should be part of that settlement.

3.12 Industrial transition will require new, high quality retraining. We note with caution the UK's historically poor record in delivering such schemes.[xxxiv] The Government must engage with unions and employers on the contents of retraining schemes at the earliest opportunity as part of a tripartite, social partnership approach to delivering the skills we need.

3.13 While the industrial focus of this report is on energy sectors, we support investment in the next generation of products – from electric and hybrid cars to sustainable aviation fuel – that have the potential to sustain existing employment in at-risk industries, create new jobs, and contribute to decarbonisation. We call on the Government to invest in these technologies as a matter of priority.

4. Decarbonisation – a global problem

4.1 Climate change is a global problem that requires a global solution. To avoid the catastrophic effects of global heating, countries need to co-operate to reduce greenhouse gas emissions produced within their own borders and across global supply chains.

4.2 The 2015 UN Paris Climate Agreement commits countries to significantly lower their greenhouse gas emissions in effort to limit increase in global temperatures to 1.5°C. Adherence to the Paris Agreement is the basis on which the UK is aiming for net-zero

greenhouse gas emissions by 2050.

4.3 GMB commends the international trade union movement for achieving a commitment to a just transition in the Paris Agreement which calls on countries to take 'into account the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities.'[xxxv]

4.4 On the surface, the UK has a relatively low carbon footprint. Official estimates put UK territorial greenhouse gas emissions at around 1 per cent of the global total in 2018. The UK also ranks 16th out of members of the G20 for territorial emissions with China, the United States and the European Union making up the top three.[xxxvi]

4.5 The UK has been reported to be reaching 'halfway to net-zero' as the shift in our power generation from using coal to gas and renewables has driven a 44 per cent reduction in total estimated territorial emissions[xxxvii] between 1990 and 2019.[xxxviii]

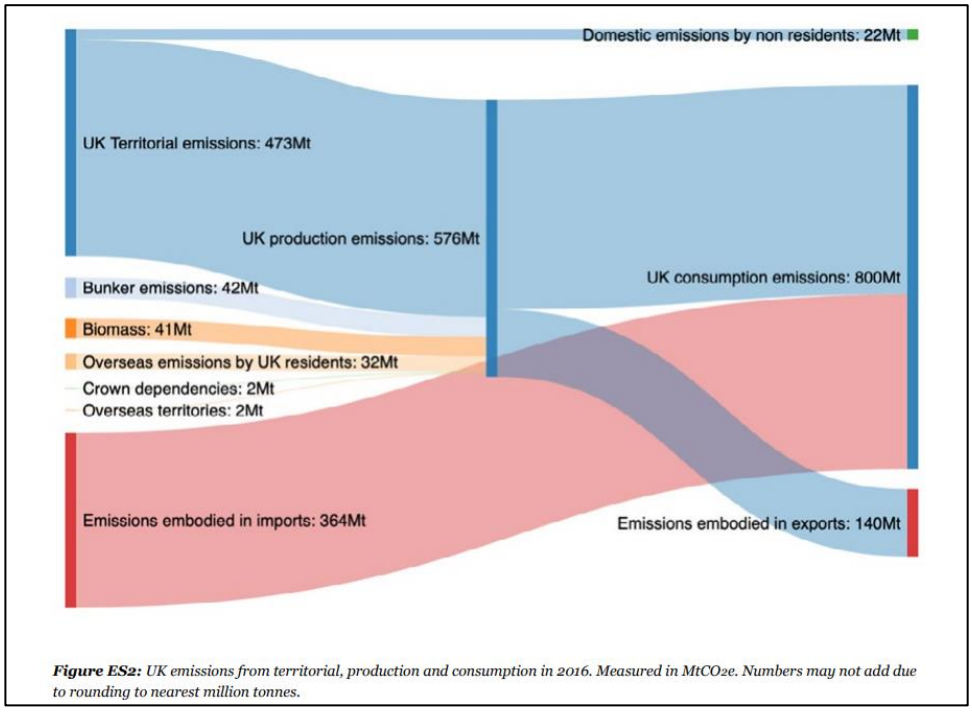


Figure ES2: *UK emissions from territorial, production and consumption in 2016. Measured in MtCO2e. Numbers may not add due to rounding to nearest million tonnes.*

Breakdown of UK Emissions in 2016 in Metric Tonnes of Carbon Dioxide Equivalent (MtC02e). Source: WWF, 2020

4.6 However, as can be seen above, this only tells half the story. Our total carbon footprint has only fallen by 15 per cent from 1990 to 2016 as emissions released overseas to satisfy UK consumption of goods and services have risen to nearly half of our footprint. These are not counted within the UK's emissions reduction targets under the Paris Agreement.[xxxix]

4.7 Until recent public pressure, the UK also offset its emissions by supporting new fossil fuel projects overseas through export finance, aid and trade promotion - with £2 billion spent in 2018 alone.[xl] The UK also continues to import fuel from overseas to fill a substantial portion of our energy supply, as much as 35 per cent of total supply in

2019.[xli] Both are also not counted in the UK's emission reduction targets.

4.8 Transporting fossil fuels thousands of miles overseas to supply our energy needs while failing to create jobs in the UK is not good environmentally, ethically, or for energy security. Our energy supply will continue to be reliant on relations with other countries with poor human rights records, and those situated in areas where rising international tensions put our energy supply at risk.[xlii]

4.9 GMB restates its support for the UK to move to an energy supply model based on domestic production and consumption. We need investment in our own low-carbon energy sources, utilising the full potential of the UK supply chain and bring our energy utilities and infrastructure back into public ownership.

4.10 If the UK's path to net-zero taken in isolation, we risk increasing emissions worldwide at the expense of decent jobs and public support for decarbonisation at home. The UK should work multilaterally with others to learn lessons from each other's paths to decarbonisation.

4.11 We need to learn the lessons from nations that created jobs through an active industrial strategy, such as the Obama administration's programme of tax credits for onshore manufacturers which improved the proportion of the USA's wind turbine equipment that was manufactured domestically from 25 per cent to 72 per cent.[xliii]

4.12 Global warming is a trade union issue. GMB supports our sister unions across the world in demanding a real just transition. Decarbonisation which is not led by those most affected, is not backed up by investment, and does not retain and create good quality unionised jobs is not a just solution, nor is it one that will work.

4.13 GMB supports calls from the International Trade Union Confederation (ITUC) for all world leaders to maintain their ambition at the COP26, due to be hosted by the UK later this year, ensuring a just transition is placed at the centre of decisions that are made.[xliv]

4.14 Polluters should pay the cost of decarbonisation. Between 1990 and 2015 the consumption activities of the wealthiest 1 per cent of the population worldwide were responsible for more than twice as much of the cumulative carbon emissions as the three billion people who make up the poorer half of the world.[xlv] Just 100 companies were responsible for over 70 per cent of global industrial greenhouse gas emissions from 1988 to 2015.[xlvi]

4.15 GMB remains at the forefront of calls for corporate accountability and tax justice following the 2008 financial crisis. These are climate issues, and calls for greater transparency over the use of tax havens 'by companies involved in activities that have harmed the world's oceans and the Amazon rainforest' are increasing.[xlvii] The three tax havens most responsible for the world tax abuse risks are in British Overseas Territories.[xlviii]

4.16 Where the UK until recently used aid, development and export finance to support overseas fossil fuel projects it should now use these institutions to assist developing countries in decarbonising through a just transition. This would follow Article 9 of the Paris Agreement, which calls for 'developed country Parties to provide financial resources to assist developing country Parties with respect to both mitigation and adaptation in continuation of their existing obligations under the Convention.'[xlix]

4.17 In March 2021 the European Parliament endorsed using a Carbon Border Adjustment Mechanisms, also known as a carbon border tax, to ensure that goods imported from outside Europe, such as steel, do not have an unfair competitive advantage because they are manufactured in countries with higher emissions.[l] The Biden Administration in the United States has also listed carbon border levies to be considered as part of its trade agenda.[li]

4.18 A border tax or tariff placed on high-carbon imported goods could create a more level-playing field for global emission reduction, increasing the incentive for less ambitious countries to make progress while reducing the incentive for unscrupulous employers to offshore industry and jobs to avoid regulation and offset emissions through 'carbon leakage'.[lii]

4.19 The implications for UK industry of a carbon tariff should be carefully considered. Care would also need to be taken to ensure least developed countries who are contributing the least to global emissions should not be unfairly affected. In principle, however, GMB believes that a carbon imports tariff could reduce global emissions and prevent the undercutting of UK manufacturing by competitors with lower environmental and labour standards.

4.20 The market, and politicians who are unresponsive to the needs of working people, should not be left to decide how we decarbonise the global economy. The trade union movement should explore how carbon border adjustments could work within our commitments to decarbonising through a just transition, building on the principles for fair carbon pricing outlined by the ITUC's Just Transition Centre.[liii]

5. The future of the gas industry

5.1 Natural gas is a crucial part of our energy mix - from domestic heating to energy production and industrial processes. It has played a transformative role in making the air cleaner in our homes, cities, and industries.

5.2 Gas has reduced the need for coal fuelled power stations. Natural gas has helped us transition to a world with fewer polluting power sources. Compared to coal, natural gas reduces carbon emissions by an estimated 50 per cent, and home heating emissions by 33 per cent.[liv] The installation of modern, efficient gas boiler systems has further contributed to a ten per cent reduction in residential emissions on a temperature-adjusted basis over the last decade.[lv]

5.3 Our members have made their industry safe, well paid, and highly skilled: fighting for the future by making sure that the industry has maintained best-in-class apprenticeships. It is our responsibility to preserve these highly skilled jobs in a context where there will be increasing pressure to reduce the use of natural gas.

5.4 The UK Government's December 2020 Energy White Paper set out an aim to 'transition completely away from traditional natural gas boilers for heating homes on the gas grid,' with an expectation that by the 'mid-2030s… all newly installed heating systems to be low-carbon or to be appliances that we are confident can be converted to a clean fuel supply.' The Energy White Paper also states that the Government will consult on whether it is appropriate to *end gas grid* connections.[lvi]

5.5 These policies – if enacted - will directly affect our members who are boiler fitters and service and repair engineers, as well as our engineers who work in the grid, and could fundamentally change industry skills and knowledge requirements. Our customer service agent members could also see wholesale changes to their working lives. We had already seen the break-up of National Grid, with the sale of the gas distribution business to Cadent, in the last decade.

5.6 85 per cent of homes are connected to the gas grid. Gas is our fail-safe form of energy, and our members in the distribution and domestic supply and service sector have been essential workers throughout the pandemic.

5.7 The natural gas that the UK can extract is deteriorating in its quality and it is less capable of being used as feedstock for our chemical industries. GMB has raised concerns with our reliance on imports of Liquified Natural Gas, and natural gas imports from nations including Qatar and Russia, where our purchases fuel autocratic regimes. We have called for the UK to be more self-sufficient when it comes to our own gas supply. However, the reality is that the types of gas that we use will need to change.

The future of gas

5.8 GMB believes that a gradual blending of green gasses (biomethane, synthetic natural gas/bioSNG, and hydrogen) offers a sustainable option that would minimise disruption for consumers and make best use of the existing gas workforce and distribution network. Both products can be safely blended into the natural gas supply (including hydrogen blends of up to 20 per cent) without a change to existing appliances.[lvii]

5.9 Hydrogen does not burn any carbon during use - its only by-product is water. The Department for Business, Energy & Industrial Strategy (BEIS) believes that hydrogen could play a 'vital role' in meeting our carbon reduction targets by 2050 as well as creating up to 8,000 jobs by 2030, and 100,000 jobs by 2050.[lviii]

5.10 Key gas network companies such as Cadent seem to have higher hopes, believing that 75,000 jobs can be created by their HyNet project alone in the North West, which will

supply local industries in the region such as glass and steel manufacturing.[lix]

5.11 As part of the Treasury's Build Back Better policy[lx] it was announced that £12 billion of UK Government investment, as well as a target of raising three times this much from private investment by 2030 to go to key technologies including hydrogen. The 'plan for growth' policy has called for:

'Working with industry, aiming to generate 5GW of low carbon hydrogen production and capacity by 2030 for industry, transport, power and homes; and aiming to develop the first town heated entirely by hydrogen by the end of the decade.'

5.12 The Government's Hy4Heat programme is trialling two semi-detached houses that are powered entirely by hydrogen.[lxi] This project, worth £250,000, represents half the budget that the Prime Minister has set aside for hydrogen technology development, with the other half going to new hydrogen production facilities.

5.13 However, the scale of the investment announced so far pales in comparison to other nations. The EU has placed hydrogen at the heart of the region's 'green recovery' announcing a target of 40GW of electrolyser capacity by 2030 with France and Germany investing 7bn and 9bn euros respectively, alongside other EU nations such as Spain, Italy, and The Netherlands.[lxii] Our EU based sister trades union organisations have also called for the sustainability of the gas sector with hydrogen as a key component.[lxiii] Hydrogen could represent a sustainable future, but without further investment there is a real risk that the UK will once again be left behind.

5.14 GMB has argued in consultation responses that biogas, synthetic natural gas, and hydrogen represents a sustainable future for the gas workforce and the transmission network.[lxiv] By contrast, the alternative technology of heat pumps is vastly more expensive at the point of installation, and wholesale take-up would dramatically increase demand on the grid. As the Committee on Climate Change has acknowledged, 'there are not enough qualified heat pump installers'[lxv] to deliver a mass conversion programme.

5.15 The UK's 280,000 km gas grid supports more than 24 million homes. Finding ways to ensure that homes are not disrupted by changing their heating systems through hydrogen conversion – if the technology and cost is viable – would see massive benefits for consumer acceptance while also contributing to net-zero. As discussed in the chapter on renewables, there is also a real opportunity to build strong, exporting supply chains in the UK too. Investment in hydrogen also opens the door for the sustainable powering of transport services through fuel cell technology, particular for modes for which electrification may not be suitable (such as heavier vehicles and some rail lines).

5.16 In preparation for a full transfer to hydrogen, the UK can draw on its experience of arguably its only true 'just transition': the conversion from town gas (which was 50 per cent hydrogen) to natural gas in the 1960s and 1970s, with Government, industry, and union support. Estimates produced for BEIS suggest that a similar conversion

programme today could provide work for 100,000 people and be completed in four years.[lxvi]

GMB – the union for gas workers

5.17 GMB and our members are essential to the future of gas, just as we have been essential to its past and present. The sector owes a huge amount of success and prosperity to the unionised workforce who have powered our homes and industries for over a century.

5.18 That is why the most recent attack on terms and conditions at British Gas has been particularly despicable. We are seeing a race to the bottom in the gas sector right before our eyes that is the culmination of the corporate greed and fragmentation that privatisation has unleashed in the energy sector. We express our solidarity with all our members who took industrial action, including those who did not feel able to sign the new contracts. GMB's present and future role will be paramount in fighting back all attacks on our members' terms and conditions.

5.19 Looking to the future structure of the industry, there can be a sustainable future for gas if the right decisions to investment in skills and green gas production are made now. Securing political support for continued use of the gas distribution network and a planned transition to green gases must be a top priority for the union in the years ahead.

6. Offshore oil and gas

6.1 The offshore oil and gas industry in the UK is now extracting the remaining natural resources from a mature basin in the North Sea. Before the Covid-19 pandemic it was estimated that around 30,600 people were employed directly in offshore oil and gas, with 121,000 employed in the wider supply chain.[lxvii]

6.2 The UK Government has repeatedly restated its intention for North Sea oil and gas fields to remain an important source of energy supply in the future and serve a key role in helping the UK meet net-zero by 2050.[lxviii] However, the experience of our members in offshore oil and gas demonstrates that both these aims are at risk of not being met if the future of the industry and the wider UK supply chain is not secured.

6.3 The industry's highly skilled workforce and supply chain has repeatedly suffered from 'boom-bust' cycles in the market price of oil and gas and major companies pulling the plug when things get tough. This has led to employment in the sector falling by 35 per cent between 2013 and 2019.[lxix]

6.4 In 2020, while the Covid-19 pandemic brought about a global health crisis, offshore workers faced the biggest industrial crisis in the sector to date as employers served notice to terminate the longstanding collective agreement which has protected their terms and conditions for decades and ensured stable industrial relations.

6.5 GMB believes our members in offshore should never be made to pay for successive crises facing the industry they work in and the union has worked hard to find a new way forward for the industry.

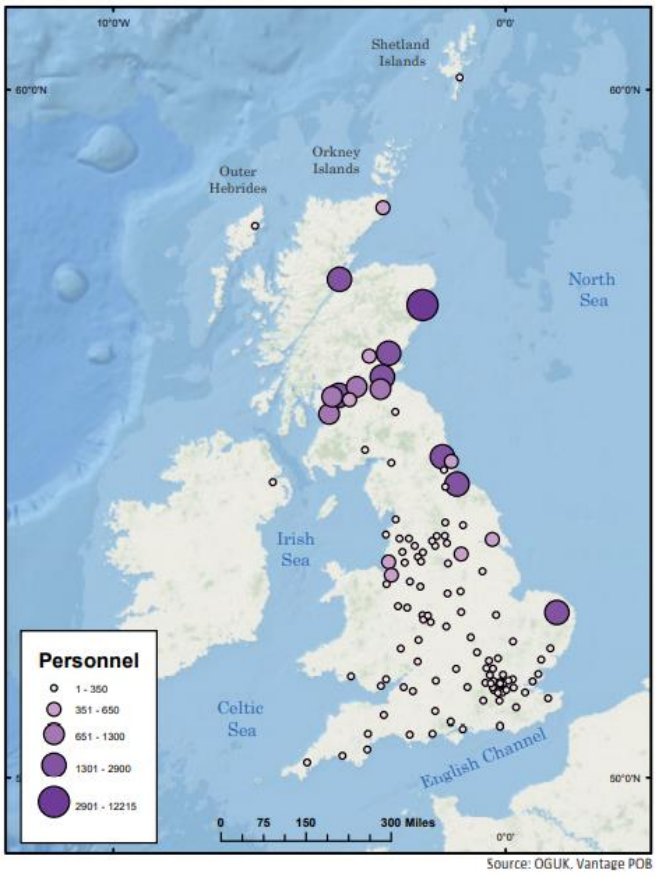
6.6 The new Energy Services Agreement (ESA) signed by offshore unions and contracting companies in 2021 is a welcome starting point for this new way forward. GMB will use the agreement to push other companies not currently in the agreement to join it so that more workers are protected across the sector and the 'race to the bottom' culture in the industry is made a thing of the past.

6.7 It is welcome that the ESA agreement explicitly commits to supporting the retention and development of skilled workers as part of a 'just transition' and to support industry initiatives to decarbonise the sector as part of achieving the UK's net-zero target.[lxx]

6.8 Any energy transition in offshore oil and gas will have a huge impact on jobs and livelihoods. We do not need to look further than the economic fallout of Covid-19 to remind us of the consequences of getting it wrong. In Scotland, from March to August 2020, the two highest increases in claims for unemployment-related benefits were in central and north east areas where many offshore workers are based.[lxxi] Other base areas for offshore workers such as in East Anglia also saw large month-on-month increases.[lxxii]

6.9 There is no justice in a transition from skilled work to the unemployment lines and a bad transition done to workers and communities reliant on the offshore oil and gas sector rather than with them will only reduce public consent for decarbonisation.

Residential locations of offshore workers



6.10 A just transition in offshore should have the existing oil and gas workforce and infrastructure are at its heart. Any energy transition in offshore should secure work in the UK, including in UK yards, and should protect operational jobs in the long term. Workers affected and their unions should be treated as equals in the process, with a say on the key decisions taken and the ability to contribute to solutions.

6.11 Any transition in offshore oil and gas ultimately requires investment and a proper industrial strategy from Government. The UK Government published the North Sea Transition Deal in March 2021, but the proof will be in what investment comes from it if the Government is genuinely serious about making decarbonisation happen in offshore.

6.12 GMB believes that North Sea Oil and Gas will remain an important and secure source of the UK's energy supply. It will play a crucial role in decarbonising our energy supply in the short to medium term while as part of a balanced energy mix, and in ultimately achieving the energy transition to renewables that is needed.

7. Nuclear

7.1 GMB represents thousands of nuclear workers, primarily in construction, decommissioning, and the wider supply chain. We are a signatory to the 'best in class' Hinkley Point C industrial agreement.

7.2 GMB supports civil nuclear power as an important component of a balanced energy mix. Nuclear is an important source of 'firm,' dependable energy. Until there is a breakthrough in large-scale, economically viable and reliable storage technology, wind and solar alone cannot replace a sensible mix of renewables and low-carbon sources, including nuclear.

7.3 The UK opened the world's first civil nuclear plant in 1956, and the nuclear 'baseload' has consistently met around a fifth of the UK's energy needs in recent years (this dependable supply is particularly important during periods when renewable production is unreliable).[lxxiii]

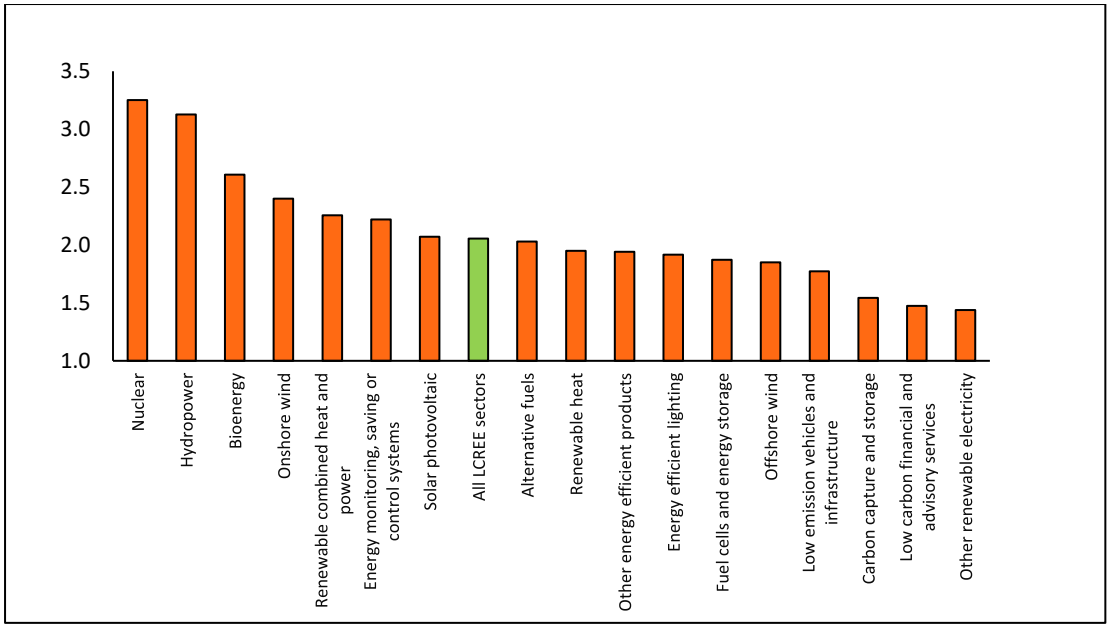
7.4 Nuclear produces no carbon emissions during production. While some have drawn attention to the energy consumed during fuel extraction, refining, and disposal, the reality is that all energy production methods (including renewables) contain such 'embedded' carbon costs. A robust comparison of whole 'life-cycle' emissions has found that the total carbon costs of nuclear are competitive with wind power and lower than solar power. As a result, investment in nuclear 'does not impede the transformation towards climate-friendly power supply.'[lxxiv]

7.5 While there can be no room for complacency, the high union density rates in nuclear have contributed to a strong culture of health and safety. The UK has not recorded a major nuclear safety incident since the 1957 Windscale fire. Nuclear produces no harmful particulates which damage lungs and cause cancer, which means that nuclear power is one of the safest forms of energy production for human health.[lxxv]

7.6 Nuclear is an important source of well-paid, high-skilled and unionised employment. The nuclear sector employs at least 59,500 people in the UK directly and through its supply chain.[lxxvi] The median full-time wage for occupations relating to the processing of nuclear fuel was £55,193 in 2020,[lxxvii] and areas containing nuclear sites have some of the highest overall union densities in the country (the highest density rate is in Copeland, reflecting in part the strong organisation of decommissioning workers and the associated supply chain).[lxxviii]

7.7 Investment in nuclear also represents one of the most effective means of supporting the wider economy. According to the ONS, each nuclear job supports a further **2.3 jobs** in the wider economy – this 'multiplier effect' is the greatest of any part of the low carbon and renewable energy economy (LCREE), and it is significantly higher than investment in wind power can deliver due to nuclear's strong domestic supply chain.

ONS estimates of LCREE employment multipliers, 2018[lxxix]



7.8 Jobs in the nuclear industry are well-paid, highly skilled, and unionised. Nuclear provides the sort of high-quality employment that the economic recovery should be built on. However, the UK faces an imminent energy production gap as most existing nuclear power stations are retired. Without new nuclear capacity, the UK will increase its dependence on fossil fuels and energy imports.

The current operational UK nuclear fleet[lxxx]

Station name	Type	Installed Capacity (MW)	First power	Expected shutdown	Nation/region
Hunterston B	AGR	1,020	1976	2021	Scotland
Hinkley Point B	AGR	1,061	1976	2023	South West
Hartlepool	AGR	1,207	1983	2024	North East
Heysham 1	AGR	1,179	1983	2024	North West
Dungeness B	AGR	1,120	1983	2028	South East
Heysham 2	AGR	1,254	1988	2030	North West
Torness	AGR	1,250	1988	2030	Scotland
Sizewell B	PWR	1,223	1995	2035	East England
Total		9,314			

7.9 The decarbonisation of some sectors – such as transport and, to some extent, heating – is likely to be achieved through electrification. Demand for electricity is therefore expected to rise significantly in the years ahead and nuclear has an important role to play in meeting that challenge. According to the National Grid, installed capacity of up to 16 GW could be required by 2050 (an increase of around 70 per cent on current capacity).[lxxxi] Internal Government analysis has reportedly found that the equivalent of twelve new Hinkley Point C projects will be required if the 2050 net-zero target is to be met.[lxxxii]

7.10 Nuclear will be an essential part of the path to decarbonisation as long as renewable supply remains unreliable and intermittent. Where countries have moved prematurely away from nuclear, they have actually *increased* their dependence on fossil fuels as coal and imported natural gas in order to scale up production at times when demand is high and renewable supply is low. A number of communities have been bulldozed to make way for new coal mines following the German Government's 2011 decision to accelerate its phase-out of nuclear power.

The dark side of the Energiewende – the Church of Saint Lambertus, Immerath, Germany, is demolished in 2018 to make way for a new open cast coal mine

7.11 As a signatory to the Hinkley Point C 'best in class' industrial agreement, GMB has worked to protect good employment standards on the project. GMB, through the Women in Construction project, has led on the need to use the project to improve gender representation in the construction industry.[lxxxiii]

7.12 Looking to the future, the UK has an important opportunity to develop an exporting manufacturing industry for Small Modular Reactors (SMRs), and the next generation of Advanced Nuclear Reactor designs (which could allow a more flexible approach to production and for power supply to be scaled up or down in response to demand). There are developed proposals to use excess heat from Sizewell C to produce hydrogen on a mass scale, which could supply homes and help protect employment in the gas sector. GMB calls on the Government to provide more support to help bring these proposals to fruition and secure new manufacturing orders in the UK.

7.13 Unfortunately, the nuclear sector has been beset by uncertainty following an inconsistent Government approach to funding and unnecessary, politically motivated reviews of the Hinkley Point C project. Of the eight sites identified in the 2011 National Planning Statement on Nuclear, only two – Hinkley Point C, and Sizewell C – only two are currently being progressed. If the sector does not rebound then thousands of jobs will be lost in construction, operations, and the supply chain.

7.14 GMB supports the following action on nuclear – and we call on the Government and the Labour Party to back the following steps:

- An urgent decision to proceed with Sizewell C, along with Government action to unlock the stalled proposals to build new nuclear power stations at Wylfa Newydd and Bradwell B.

- Investment in new nuclear technologies, including Small Modular Reactors and Advanced Nuclear Reactor designs, and industrial-scale hydrogen production.

- A new National Planning Statement for Nuclear to identify the sites for new builds to replace the 2011 policy that is due to expire in 2025.

- Public ownership and direct funding to guarantee terms and conditions that at least match those set out in the relevant national agreements, and to reduce the costs to taxpayers.

- Reforming the Nuclear Decommissioning Agency into a Nuclear Development agency with responsibility for delivering Small Modular Reactors and community regeneration.

'If the Government is serious about levelling up the regions and meeting net-zero then it needs to support Sizewell C and the nuclear supply chain. There are few infrastructure projects of this scale that are ready to go and which can provide an immediate Post COVID-19 boost for jobs locally and nationally, including up to a thousand apprenticeships for young talent.'

Joint GMB, Unite, and Prospect statement on Sizewell C

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8. Renewables

8.1 GMB welcomes the principles of investment in energy generation and a just transition to a low carbon economy, but so far taxpayers' spending on renewable energy has failed to deliver the jobs that were promised.

8.2 As described earlier in this report, a shift from conventional energy sources to renewables entails a transition from jobs in operations to employment in manufacturing and repairs. These jobs could be secured in the UK: but in practice, while politicians have promised to deliver a 'green jobs revolution' for years, successive governments have failed to match investment in renewables production with a meaningful industrial strategy for securing employment in the UK.

8.3 The figures are stark. A record **£4.8 billion** was spent on renewable wind subsidies in 2019 but the sector employed just an estimated 11,600 people (and the ONS estimates that the true number could be as low as 8,600). A total of **£19.1 billion** was spent on central government renewable wind subsidies across the six year period but the number of people estimated to be employed by the sector actually fell during that time.

UK subsidies and employment in offshore and onshore renewable wind, 2014 to 2019[lxxxiv]

	2014	2015	2016	2017	2018	2019
BEIS subsidies (£ billions)	1.8	2.3	2.4	3.6	4.1	4.8
Employment (FTE)	13,300	10,600	13,600	11,800	11,600	11,600

8.4 Even though Scotland has the greatest potential for offshore wind development in Europe, the STUC has described a catalogue of false dawns for the Scottish 'green jobs revolution' that seems to always be round the corner.[lxxxv] These broken promises have been repeated in Westminster. In 2014, Vince Cable as BEIS Secretary stated that the offshore wind industry could support 30,000 jobs in the supply chain by 2020.[lxxxvi] In reality, only 6,100 jobs were estimated to be indirectly supported by offshore wind in 2018 across the UK (the latest year for which figures are available).[lxxxvii]

GMB leading the battle for BiFab, Edinburgh, November 2017[lxxxviii]

8.5 A different approach is possible, and the potential benefits for domestic industry are huge. The Moray East and Neart na Gaoithe projects are estimated to require between 212,700 and 319,500 metric tonnes of steel between them. [lxxxix] Although the industry does not collect figures on the UK steel content of offshore wind, orders are primarily sourced from foundries and yards in Spain, the United Arab Emirates, and Indonesia – where average wages are as low as £2.80 an hour.[xc] The finished products are

transported half way across the world at enormous carbon costs.

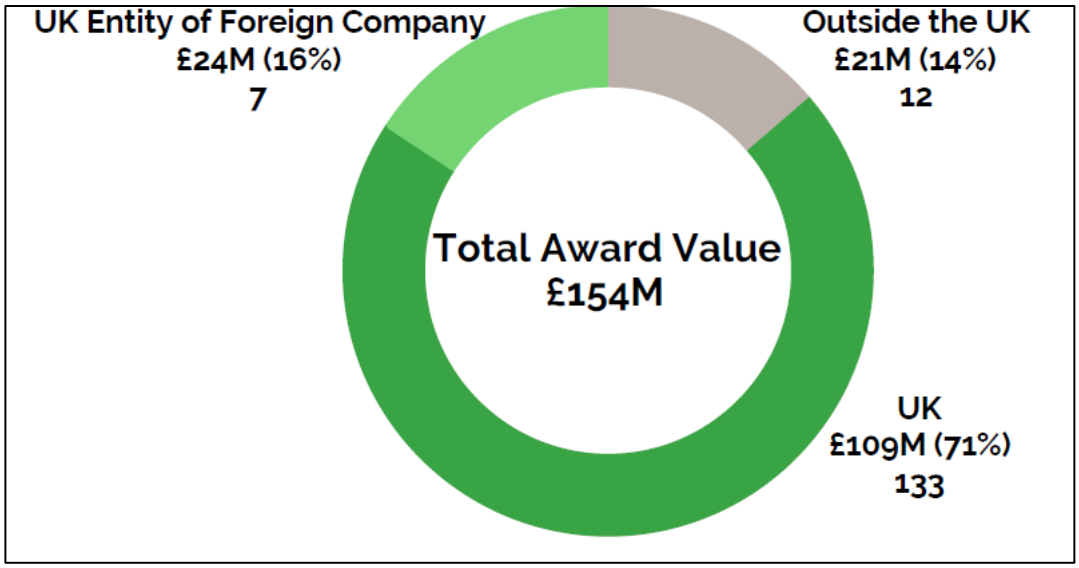
8.6 Instead, investment in offshore wind has led to offshored jobs, as parts of the steel industry and historic fabrication yards have lain empty, while private developers utilise globalised supply chains. As a consequence, multi-billion pound orders that could be fulfilled in the UK have been sent overseas.

8.7 The 2020 Offshore Wind Sector deal set a target that 60 per cent of lifetime content by value should be delivered in the UK. However, just 29 per cent of capital expenditure was reported to be retained in the UK, according to the latest (2017) figures published by developers.[xci] This ratio includes construction costs and the share of spending on components in the UK is likely to be far lower.

8.8 While the Government recently extended the use of subsidy mechanisms to solar power, the supply chain for solar panels is deeply implicated in systematic human rights abuses. Half the world's polysilicon – and essential raw material - is produced in Xinjiang, where the solar panel supply chain has been repeatedly linked with forced labour and the Chinese state's ethnic cleansing of the Uyghur people.[xcii] There are no effective safeguards to prevent these tainted products from being subsidised by UK taxpayers.

8.9 In contrast to the poor record of private developers, there is evidence that the direct procurement of renewables is more likely to deliver investment in the UK. Although the amounts were relatively small, 86 per cent of orders for renewable power placed directly by public bodies are retained in the UK.

UK public bodies' direct procurement of renewables, 2015 to 2020 (Tussell research for GMB)[xciii]



8.10 The Special Report to Congress 2021 on Public Spending and Procurement sets out an ambitious agenda for reforming international procurement rules so that the UK Government can guarantee that renewables orders will be retained in the UK

8.11 The UK has a historic opportunity to develop renewables in a way that supports jobs and helps to secure a viable future for the gas industry. The production of green hydrogen – utilising wind power – offers the prospect of a truly net-zero energy source which could be integrated into the gas distribution network, and for which the only waste product is water.

8.12 Green hydrogen production is already commercially competitive in niche industrial applications, and it is projected that the technology will be commercially viable at scale within a decade on current cost trajectories.[xciv] Coupled with the UK's natural wind resources, and with active Government support, this nascent industry could grow into a strong exporting manufacturing, fabrication and installation sector.

8.13 GMB supports the development of renewable power as part of a balanced energy mix, but the current system is costing taxpayers billions and failing to deliver the 'green jobs of the future' that were promised. Without a fundamental change in approach, there is a real danger that the green agenda will become permanently associated with job losses, deindustrialisation, and the overseas exploitation of workers.

8.14 We call for a fresh approach:

- Following the delay in Contracts for Difference auctions during the coronavirus outbreak, a moratorium should be extended on new subsidy awards until a robust plan can be delivered for securing jobs in the UK.

- Public investment for capital improvements should be provided so that fabrication yards and other essential UK industries can produce renewables components at a greater scale.

- Private developers should be held to account, and Ministers must direct an independent audit of true rates the UK content in subsidised offshore development to date.

- The auctioning of subsidies to private developers is not working. Central, devolved and local governments should develop direct public procurement models instead, with robust requirements around employment conditions, and union recognition.

- An urgent, large scale stimulus package should be developed to develop green hydrogen manufacturing in the UK to exploit the UK's wind resources, and produce a truly zero-carbon fuel that will help secure a viable future for the gas industry.

9. Vision for 2050

9.1 The 2050 target could be met in two very different ways. The first is a continuation of current trends. The UK will continue to invest in non-fossil fuel energy generation that is fulfilled through overseas supply chains. The loss of skilled jobs will contribute to political disengagement, and support for environmental policies will becoming split on social lines.

9.2 Without a new generation of nuclear power, the intermittent nature of renewable production will require continued fossil fuel use when supply is not matched with demand. This will place more pressure on jobs in hard-to-decarbonise industries.

9.3 The second scenario for achieving net-zero is the one under which environmental objectives are allied with social aims. It will take a government with an active industrial strategy to achieve it, but by 2050 – or sooner, if the facts change and our members can support alternative plans – we want to see:

- An energy mix of renewables balanced by a new generation of advanced nuclear reactor designs and Small Modular Reactors, with both industries supported by strong, exporting, UK-based supply chains.

- Hard-to-decarbonise industries that have reduced emissions to the greatest extent practicable in close consultation with unions.

- Hydrogen and other green gases as the default heating solution, fuelled by an upgraded gas distribution network, produced to the greatest extent possible through green electrolysis, and serviced by a skilled, experienced, and unionised workforce.

- Carbon Capture Utilisation and Storage complemented with a restored natural habitat across much of the nation, with a massive programme of investment in reforestation and the restoration of peatlands.

- A government that links consumer spending at home to emissions reductions abroad – through policies such as a carbon imports tariff – while regaining our standing as an leader in international development by shouldering our share of the costs of global warming and decarbonisation for the world's least advantaged nations.

- A public sector supply and distribution model to end the systematic extraction of profits across and invest in infrastructure and lower bills, while making good employment standards and union rights a condition of public spending on energy.

- Net-zero emissions across the economy as a whole and progressing to a carbon deficit by the end of the century to mark the UK's contribution to limiting temperature increases to the Paris Accords goal of 1.5^0C.

10. Conclusion

10.1 This Special Report sets out GMB's commitment to tackling global warming while also pursuing a real plan for creating and protecting jobs.

10.2 It has built upon the GMB energy campaign 'Switched On' which called on us to:

- Promote the importance of a genuinely balanced energy mix now and in the future.
- Provide evidence about the value of our energy sectors throughout the UK.
- Inform and lead public and political opinion.
- Highlight the risks and consequences to workers and consumers from unmanaged decarbonisation.
- Champion and defend high quality, well paid unionised jobs in all energy sectors.

10.3 This report sets out new policy and addresses the policy concerns of our members inside and outside of the energy sector, and those who work in heavy industry reliant on fossil fuels. It has not shied away from confronting the realities of either climate devastation or the shortcomings of the Government's energy policies.

10.4 We are living through one of the consequential periods of history. The outbreak of COVID-19 has torn apart any remaining illusion that our society is fair and inclusive. It has shown us which jobs and industries are essential, and the industries and sectors that have suffered the worst of the effects of lockdown. We are at a pivotal point to make fundamental changes to how rebuild our economy and our society to make it fairer.

10.5 Most of all, GMB will remain at the heart of the energy sector and all industries reliant on the future of energy. Workers need trade unions more than ever to fight the encroaching degradation of terms and conditions. Corporate greed and bandit capitalism has no place in such a crucial time. This report pragmatically lays out our demands for our members and for the future of how we power our society and leave no member behind.

10.6 We support the principles of a just transition and a Green New Deal, but there needs to be an honest conversation within the labour and the environmental movements about what those terms mean. We will not hesitate to speak up against proposals – however ambitious or well intentioned – that are not in our members industrial interests. Our members cannot live off slogans, and there is no justice in a transition from skilled work

to the unemployment lines.

10.7 This report sets out a pragmatic set of priorities for decarbonising energy and contributing to the net-zero goal. We face environmental and social challenges of historic magnitudes, and we must all prove equal to the task ahead. GMB stands ready to play its full part.

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The documented poor human rights records of each of the main countries supplying imports of Oil and Liquified Natural Gas to the UK are provided by Amnesty International via the links below:

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