JUNE 2023

NET ZERO POLICY TRACKER: TURNING NET ZERO AMBITIONS INTO REALITY

INTRODUCTION

The Net Zero Strategy (NZS), published in October 2021, was the first blueprint from any major economy on how it planned to reach net zero emissions. It was developed on the basis of a clear recognition of the benefits that net zero transition can bring to the UK economy through improved productivity, growth, innovation and export opportunities.

Since then, the landscape has shifted dramatically. The invasion of Ukraine has precipitated a significant downturn in the global economy as demand for resources has far outstripped supply. The resultant cost-of-living crisis has seen inflation soar across major economies just as they look to recover from the shock of the COVID-19 pandemic, with growth slowing across the board. In the UK, net zero commitments have come under increased scrutiny from an increasingly vocal minority looking to delay climate action in the name of economic wellbeing.

The economic situation in which Government is now operating is drastically different to that in which the Net Zero Strategy was first published. The UK economy is performing poorly, with little to no growth and a recession only narrowly avoided at the start of 2023. The International Monetary Fund (IMF) has forecast that the UK will see the worst economic performance of any G20 country in 2023, with the economy forecast to shrink by 0.3%.¹ However, there is a growing consensus that there is a route to economic growth for the UK: a

meaningful, comprehensive framework of ambitious climate policies. During her time as Prime Minister, Liz Truss MP commissioned former Energy Minister Chris Skidmore MP to undertake an independent review of net zero from the viewpoint of economic growth. His review was clear on the economic benefits of climate action, describing it as "the economic growth opportunity of the twenty-first century".²

It is in this context that the UK announced a series of measures on its 'Energy Security Day' in March 2023. Following a 2022 judicial review forcing Government to outline exactly how its net zero policies will achieve emissions targets, Government took this opportunity to publish an update to its Net Zero Strategy, plans to improve energy security, a Net Zero Growth Plan, an update to its Green Finance Strategy, a response to Chris Skidmore's Independent Review, a response to the Climate Change Committee's 2022 Progress Report to Parliament, and a raft of other decarbonisation measures across the economy, including several consultations.

Government's array of green measures has been announced against a backdrop of significantly accelerated climate policy across major economies. In the USA, President Biden's Inflation Reduction Act represents a landmark moment in the global decarbonisation journey, dedicating around \$370 million to green growth industries over the next



This policy briefing is one of a series published by Aldersgate Group, an alliance of major businesses, academic institutions and civil society organisations that drives action for a competitive and environmentally sustainable economy.

^{1:} The Guardian (April 2023) UK economy forecast to shrink by 0.3% this year, says IMF (Date Accessed: 6 June 2023)

^{2:} Chris Skidmore MP (September 2022) Mission Zero – Independent Review of Net Zero

decade. The move is likely to significantly enhance the USA's domestic decarbonisation, attract significant inward investment, onshore numerous industries and manufacturing processes, and stimulate economic growth. The EU has responded with a comprehensive industrial plan of its own – the Green Deal Industrial Plan and a Net Zero Industry Act. In short, governments across the world are realising the economic potential net zero offers, and are moving to claim that prize at pace. To remain economically competitive, maintain its leadership status and deliver the emissions reductions required, the UK Government's response must be comprehensive and cover the whole economy.

Publishing a detailed pathway to net zero endorsed from the top of government sends a positive signal that the UK aims to participate in the 'race to green'. However, signalling is not enough. Sector-by-sector pathways, regulation, investment and detailed public policy measures are all required to cut emissions and provide long-term certainty to businesses and investors, which will ultimately accelerate the mobilisation of private finance, lower risk and cut the cost of investment.

Furthermore, implementing a cross-cutting framework that underpins sectoral transitions is equally important, which is why including measures for accelerating skills development, mobilising innovation funding and using the UK Infrastructure Bank to crowd in private investment is a fundamental part of any Net Zero Strategy.

In the following of government's original Net Zero Strategy, Aldersgate Group published a Net Zero Tracker, identifying the policy gaps left by that document. With the policy landscape in a very different place, we have once again assessed government's progress across the wide-ranging policies it has announced since then, considering what must come next in terms of policy and spending decisions as the UK seeks to reach net zero, grow its economy and compete in a narrowing global market.

A good diagnosis but not enough prognosis

The package of measures announced by the UK Government includes 44 documents running to 2,840 pages. Foremost, the package contains a Carbon Budget Delivery Plan which demonstrates that the UK is currently not on track to deliver on its Nationally Determined Contribution (NDC) by 2030 – only meeting

92% of the emissions promised under its NDC, rising to 97% in 2037. In another of its documents, Powering Up Britain, the Government states that there is a" judgement to be made whether the policies identified at this stage are sufficient" to meet the Climate Change Committee's Sixth Carbon Budget which outlines the UK's permitted emissions between 2033 and 2037.

While the announcements represent a major step forward and a reassuring diagnosis of the policy challenges facing the UK, taken together they do not go far enough: further policy action will be needed at pace to meet the emissions reductions required by the UK's own net zero targets, its NDC and the Sixth Carbon Budget. While the package does acknowledge the opportunities afforded by the net zero transition, highlighting the job creation and innovation potential of several UK sectors, it also acknowledges that costs need to be met, policy certainty provided and a reassuring investment environment created. The previous Net Zero Strategy put forward a set of principles designed to determine how these challenges will be met:

- Working with the grain of consumer choice
- Ensuring the biggest polluters pay the most for the transition through fair carbon pricing
- Ensuring the most vulnerable are protected through measures like energy bill discounts
- Working with businesses to deliver deep cost reductions for low carbon technologies

With other countries moving to meet these challenges with comprehensive, long-term policy certainty and radical thinking in the form of subsidies in the USA, state aid relaxation and other industrial policy measures in the EU, questions remain over whether the UK's package will be able to deliver on these fronts with its 'business as usual' approach, promising a response to international policy developments later in 2023. Many policy areas are committed to consultation, with little detail on implementation. The package arrived with positive framing from the very top of Government, but the UK needs to rapidly address several core challenges if it is to hit its net zero target and maximise the economic benefits of the transition.

Getting to net zero requires ambitious and co-ordinated action across multiple parts of the economy. On that count, the new announcements make positive progress, with policy measures and some investment announced for a range of sectors including heat pumps, energy efficiency, carbon capture, hydrogen, zero emission vehicles and floating offshore wind. The clear winners in this sense are:

Carbon capture and storage (CCS). The
Government's strategy to phase out fossil fuels,
despite its disappointing decision to approve
new oil and gas exploration at Rosebank in the
North Sea, rests largely on the deployment of
technology to capture and store carbon dioxide in
geological formations under the North Sea. The
announcements have shortlisted eight projects
to move ahead in its funding scheme for CCS,
expecting to see £20bn of investment available
over 20 years.

Hydrogen and nuclear. The package included 20 new hydrogen projects which, between them, will receive £240m to help the development of hydrogen which Government sees as central to the UK's low-carbon future. This comes despite warnings from several voices that it may not be viable as a source for home heating. Great British Nuclear will also be established to accelerate the development of small modular reactors (SMRs) as Government aims to see nuclear generate a quarter of the UK's electricity by 2050. This follows the announcement last year that Government would invest £700m in EDF's Sizewell C nuclear plant in Suffolk.

Electric Vehicles. Under a Zero Emissions Vehicles (ZEV) mandate announced as one of the package's most significant measures, 22% of cars and 10% of vans sold by UK car manufacturers must be electric. Around £800m in capital funding has been made available for electric vehicles, while government also announced measures to upgrade the UK's EV charging infrastructure.

It is encouraging to see Government setting out a clear intention to address the planning delays that have so badly hampered the rollout of power grid infrastructure with a consultation on the National Policy Statements for energy, gas, and renewable infrastructure alongside a consultation on the new Energy Strategy and Policy Statement. What is essential now is the pace of delivery across planning, grid upgrades and connections, with

the UK already falling behind in the race for clean energy investment, risking a loss of £62 billion of energy investment between now and 2030.³ In the last year alone, the UK has become a less attractive place to invest, with a 10% drop in investment in the renewables sector. Comparatively, the US has seen a 24% growth, and Germany 17%.4

The rapid roll-out of new transmission lines is absolutely essential to connect the significant pipelines of renewable projects due to be built this decade, and to help major industrial sectors such as steel and cement to receive the large amounts of clean electricity they need to decarbonise their operations.

Meanwhile, Government has not made any progress on onshore wind, showing no sign of lifting the effective ban on onshore wind farms in England, despite its *centrality* to decarbonisation efforts and ability to begin powering the grid far sooner than other forms of generation such as nuclear reactors. The announcements also contained little detail on the grid connection issues facing the UK's ageing electricity network. New sources of generation often have to wait several years for the grid connections they need, in part owing to the difficulties of attaining planning permission or due to a lack of grid capacity.

With power decarbonisation and energy independence at the centre of Government's package of announcements, the need to undertake sweeping industrial electrification also received some noteworthy attention, with some policies that could form part of an industrial strategy, as opposed to being purely market-led. Funding commitments to build a UK manufacturing base in heat pumps and floating offshore wind power are a recognition that an economically successful transition to net zero requires simultaneous action on supply chain growth as well as technological advancement.

^{3:} EnergyUK (Feb 2023) UK falling behind in race for clean energy investment

^{4:} The Guardian (April 2023) UK investment in clean energy transition falls 10%, bucking global trend (Date Accessed: 16 June)



MUCH WORK REMAINS TO BE DONE

For all the good narrative and breadth of announcements, there is still a great deal of work to be done to match the environmental ambition called for in the IPCC's repeated warnings or the economic ambition demonstrated by other major economies. The challenge facing the UK in the wake of these announcements is threefold: a policy challenge, an institutional challenge, and an investment challenge. Aldersgate's Net Zero Tracker assesses where government progress has been made across key policy areas relevant to climate and nature, identifying where more work needs to be done to address these challenges.

Plugging policy gaps

Several sectors of the economy – homes, surface transport, heavy industry to name just a few – do not have anything like the full suite of policies needed to attract private investment in low carbon technologies at the pace, scale and affordability required.

Establishing the institutional framework required for economic transformation

The Skidmore Review was clear in its recommendation that any government requires a Net Zero Delivery Body to assure the whole-of-government thinking required to achieve what will be the major economic transformation of the coming century. This must be remedied soon; it is difficult to see how a major economy can be decarbonised in fewer than three decades without an independent body co-ordinating and overseeing the timely delivery of key policy measures across Whitehall.

Keeping up with the competition, not dropping out of the race

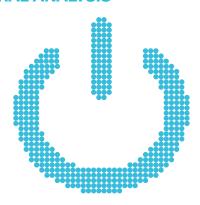
With the USA committing around \$369bn to clean technology subsidies in its Inflation Reduction Act, a moment representing a huge modal shift in policy thinking, and the EU following suit with a comprehensive industrial strategy in its Green Deal Industrial Plan, the UK faces a historic investment challenge. Rhetoric and target setting are not enough to meet this challenge - investment is already moving away from the UK, and Government must not just claim leadership; it must also deliver leadership. To remain at the forefront of the development and commercialisation of low carbon technologies and position itself as an attractive destination for private investment, the UK Government will need to make both public investment commitments and provide a stable, comprehensive policy and regulatory environment to lure investors currently looking elsewhere. These should be focussed on technologies and sectors which are critically important to the future of the UK economy and where market failures current act as barriers to investment.

What next?

Government's Energy Security Day announcements propose a set of policy and spending commitments across a range of sectors, with indicative pathways up to 2037. Whilst some of them have been announced before, there is a selection of new commitments. Below we summarise the key announcements made against each sector and consider the next steps for implementation, the policy gaps that remain, and how to address them effectively. This tool will be updated as government's thinking evolves, keeping a track of UK policy as it progresses towards our net zero goals.



SECTORAL ANALYSIS



POWER

SECTOR SUMMARY

The power sector has seen much higher rates of decarbonisation relative to other sectors of the UK economy, highlighted by Government's stated ambition to deliver a fully decarbonised electricity grid (subject to security of supply) by 2035.

Significant political attention has been focussed on the UK's energy security after the Russian invasion of Ukraine provoked a global energy crisis dramatically affecting the cost of gas. Since that time, we have seen an Energy Security Strategy, an Energy Prices Act, the implementation of an Energy Generator Levy and, on Energy Security Day, a new energy strategy, Powering Up Britain.

At present:

- 13% of 2021 UK greenhouse gas emissions were from electricity generation, representing 54 million tonnes of carbon dioxide equivalent (MtCO₂e).⁵
- A 40%-60% increase in demand for electricity is expected by 2035 according to the 2021 Net Zero Strategy.⁶
- £280bn-£400bn is the estimated cost of decarbonising the power sector according to the 2021 Net Zero Strategy.⁷
- Between 1990–2021, the UK saw a 73% reduction in emissions from the power sector.

While the UK has hitherto been a global leader in renewable energy, with our offshore wind sector amongst the most advanced in the world, there are currently significant risks around investment in the required infrastructure to meet our 2035 target. There is also an urgency to address major policy gaps around planning, grid infrastructure and supply chains, transmission and interconnection capacity, crossborder electricity contracting, and restoring participation in the day-ahead electricity markets which are essential for reducing wholesale prices. The UK must act at pace to fill these gaps, or risk missing out on investment and, more importantly, failing to deliver zero-carbon power by 2035.

Key commitments from Energy Security Day

- testablish a new Government/industry solar taskforce, develop a solar delivery roadmap, and assess low-cost finance from retail lenders for homes and small business premises.
- Publish a **Biomass Strategy** in 2023 and a semiconductor strategy as soon as possible.
- Publish an action plan in 2023 in response to the Electricity Networks Commissioner's recommendations on halving development times for transmission network projects.
- Commit to implementing the planning reforms
 signalled via the National Planning Policy Framework and the energy National Policy Statements (NPS).
- Establish **Great British Nuclear** to deliver a new nuclear programme and a new competition round to establish new small modular reactor technologies.
- The launch of a **Floating Offshore Wind**Manufacturing Investment Scheme, providing £160m to spur investment in port infrastructure projects.
- A shortlist of projects for the first electrolytic
 hydrogen production allocation round, with the intention to launch a second round in Q4 2023.
 A hydrogen production delivery roadmap will be published by the end of 2023.
- The announcement of successful applications of the first competition window for Strands 1 and 2 of the **Net Zero Hydrogen Fund,** with the intention to launch a second competition window in the spring.

^{5:} National Audit Office (March 2023) Decarbonising the power sector

^{6:} Ibid

^{7:} Department for Business, Energy & Industrial Strategy (October 2021) Net Zero Strategy: Build Back Greener



Announcement of the *Track-1 negotiation* project list of **carbon capture projects**, the expansion of the *Track-1* clusters, and the launch of *Track-2* of the cluster sequencing process to establish two new CCUS clusters. A sectoral plan for CCUS will be published in 2023.

A commitment to **outlining an approach to rebalancing the price of gas and electricity** by the end of 2023/24, with significant progress made to affect relative prices by the end of 2024.

Remaining policy gaps

Remove the barriers preventing the consenting and construction of onshore wind projects in the UK.

Doubling UK onshore wind capacity to 30GW by 2030 would reduce consumer bills by £16.3bn over this decade, generate £45bn of economic activity and create 27,000 full-time jobs. Government should set a clear target for onshore wind capacity alongside a detailed roadmap for how and when the technology will be rolled out.

Ensure through the Biomass Strategy that biomass

emissions are included in carbon accounts. Prioritise

sectors without alternative fuel switching options.

the use of waste biomass and direct its applications to

is sustainably sourced and the whole lifecycle

management rules implemented requiring developers to meet key milestones throughout their connection journey or make way for projects that are further back in the queue that are ready to proceed.

The National Planning Policy Framework and
National Policy Statements for Energy should be
updated so that renewable projects and low carbon
infrastructure are treated as Critical National
Priorities (CNP) that can be fast-tracked through
the planning and consenting process.

Develop the regulatory **RIIO Framework** to unlock anticipatory investment in network capacity and reconsider amending the remit of Ofgem to focus on emissions reductions and long-term costs, allowing transmission network operators to make spending decisions based on future savings and emissions reductions.

Remove barriers to UK participation in the day-ahead electricity markets with neighbouring countries.

Rethink the **Electricity Generator Levy** (EGL) by including an investment allowance for renewable generation consistent with the treatment of oil and gas extraction.

Consultations

Consult on establishing a **framework for community**benefits associated with transmission network build

Consult in 2023 on the need and potential design options for market intervention to support hydrogen power

Government will consult on options for a new approach to consumer protection in energy markets from April 2024, and the future of the price cap on default tariffs.

Publish five revised energy National Policy Statements covering renewables, oil and gas pipelines, electricity networks and gas generation, and an overarching Energy Statement for consultation.

Further detail needed on implementation

Urgently **finalise National Policy Statements** to allow for quicker deployment of renewables capacity.

Urgently bring forward meaningful suggestions concerning the rebalancing of gas and electricity prices, with detail around which policy costs will move from electricity to gas bills. Detail must also be brought forward for industrial as well as domestic consumers.

Finalise the hydrogen business model to accelerate the expansion of UK green hydrogen production capacity and clarify how the remainder of the Net Zero Hydrogen Fund will be spent. Setting a robust hydrogen standard (with a very high bar for blue hydrogen) to give confidence to investors and users will be essential, and tightening this over time as the feedstock decarbonises and technology options become more efficient will be key. Using CfDs and government matchmaking, Government should set a clear timeline for when low carbon hydrogen will be available.

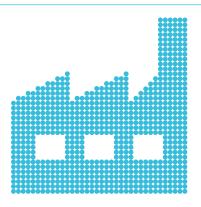
^{8:} ReNews.Biz (October 2021) RenewableUK publishes onshore wind plan (Date Accessed: 6 June)

^{9:} Climate Change Committee (March 2023) Delivering a reliable decarbonised power system



- Reform the **Capital Allowance Regime** to provide enhanced incentives for low carbon investment.
- Reform and expand the Contracts for Difference regime, increasing the budget for future rounds (from AR6) and increasing the strike price of new CfDs to reflect inflation and increased labour and material costs for developers. Pursuing voluntary CfDs would also boost investor confidence, provide net benefits to consumers, and allow for the decoupling of electricity prices for existing low carbon generation from marginal prices set by gas. This will be essential to prevent fossil fuels which, whilst generating around 40% of electricity, set the price of electricity from all sources 84% of the time in the UK.
- Work with the LCCC and the FSO to establish a market for long-term, zero carbon tradeable electricity contracts by the mid-2020s.
- Government should bring forward its decision on the role of hydrogen in home heating from 2026 to the end of 2023, and prioritise the £240m Net Zero Hydrogen Fund. Deployment of the remaining bulk of the Net Zero Hydrogen Fund (£202m) should be prioritised to accelerate the growth of the sector.





INDUSTRY

SECTOR SUMMARY

The heavy industrial sector has been the focus of much discussion and attention since the launch of the Inflation Reduction Act (IRA) by President Biden's administration in the US. The EU has responded with a Green Deal Industrial Plan, promising a Net Zero Industry Act later in 2023. The UK has committed to a full response to IRA at the 2023 Autumn Statement; it will be vital that this is long-term and uses all the policy tools at our disposal to cast the sectoral net wide and commit to much-needed supply side reform across sectors. The IRA commits a great deal of attention and funding (\$369 in subsidies over a decade) to reshoring supply chains and ensuring that manufacturing takes place in the US, incentivising significant investment.

At present:

It is estimated that industry is currently responsible for producing 16% of UK emissions, and it will need to cut emissions by two thirds by 2035 in order to achieve its net zero target.



The volume of steel available for recycling will treble in the next 30-40 years.

Cement and lime contribute around 12% of UK industrial emissions. 12

Chemicals contribute around 16% of UK industry's direct emissions. 13

10: Climate Change Committee (December 2020) Sixth Carbon Budget Manufacturing and construction sector summary (Date Accessed: *20 June*)

11: University of Cambridge (April 2016) A bright future for UK steel

12: Climate Change Committee (December 2020) Sixth Carbon Budget Manufacturing and construction sector summary (Date Accessed: 20 June)

13: *ibid*



The Sixth Carbon Budget indicates that UK industrial CO₂ emissions could be halved by 2050 through measures that already exist, including resource efficiency, material substitution and electrification. The remainder can be abated through hydrogen, CCS, biofuels and other nascent technologies.¹⁴

Clarity is required around connecting industries located off-cluster to the necessary low carbon infrastructure needed to enable them to decarbonise cost-effectively. Simultaneously, securing affordable and low carbon fuel switching options is crucial to the future of industries such as steel, cement, and glass. This is more acute than in 2021, with significant international developments on policies concerning carbon leakage (Carbon Border Adjustment Mechanisms, Product Standards and carbon pricing) moving apace, making 2023 an existentially important moment for the future of heavy industry in the UK. With electricity prices continuing to soar, the UK Government must ensure that these industries are supported as they attempt to decarbonise, with policy to address onshore supply chains and financial support to address the significant operational costs of transitioning to low carbon manufacturing. Crucially, heavy industry must be supported in accessing the vast amounts of costly low-carbon electricity required to shift operations to a low carbon footing.

Finally, ambitious timelines for running technology trials, particularly for novel production techniques such as the use of hydrogen Direct Reduced Iron (DRI) in steelmaking, will be key in enabling industry to learn by doing and to deploy tested technologies well ahead of 2050.

Key commitments from Energy Security Day



Extend the **Industrial Energy Transformation Fund**, increasing total grant funding available by £185m to £500m, with applications open from early 2024–April 2025.

Publish the full government response to the **UK ETS**Development consultation and plan to set out a long-term pathway for the UK ETS later this year.

Explore eco-labelling for the embodied emissions
 of industrial products with a current consultation on
 how labelling could support demand for low carbon
 products.

^{14:} Climate Change Committee (December 2020) Sixth Carbon Budget: The UK's path to Net Zero



Consultations and Calls for Evidence



A carbon leakage consultation has been published alongside the strategy.



Launch a call for evidence on Industrial Electrification in 2023.



Replace 50TWh of fossil fuels per year by 2035 to support industrial fuel switching, alongside a consultation on how to overcome the barriers to fuel switching to electricity.



Publish a consultation to review the current Batteries Regulations in the second half of 2023.



Begin work on a Non-Road Mobile Machinery (NRMM) strategy in 2023. A Call for Evidence on NRMM decarbonisation options will be launched in autumn 2023.



Launch a consultation on hydrogen production and industrial carbon capture business models.

Further detail needed on implementation



Set clear targets for ore-based steelmaking to reach net zero by 2035 and confirm trials for low-carbon production methods such as hydrogen DRI steelmaking.



Provide clarity on how the UK ETS will align with net zero, including through a gradual reduction in the number of free allocations and interim competitiveness support through the introduction of Carbon Border Adjustments.



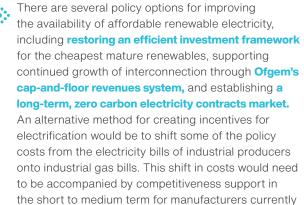
Simplify access to funding through resource and energy efficiency policies, especially for manufacturers in dispersed sites, and allowing applications on a rolling basis.

Remaining policy gaps



Create incentives for electrification by increasing the availability of affordable renewable electricity and shifting the burden of policy and network costs, given that industrial electricity prices are between 25%-44% above the EU average.15

15: Ofgem (July 2021) Research into GB electricity prices for Energy Intensive Industries



Provide certainty of supply and a clear timeline for when low carbon hydrogen, waste biomass, and carbon capture, utilisation, and storage (CCUS) will be available, using Contracts for Difference (CfDs) and government matchmaking. Policymakers should also use the UK Hydrogen Strategy as a starting point to develop standards that define low carbon hydrogen.

reliant on gas as a fuel and feedstock that cannot

easily or rapidly switch, including in the form of

exemptions from these gas costs.



Develop a clear roadmap for decarbonising dispersed sites, working with local authorities and local enterprise partnerships to ensure these locations are over time connected to CCS infrastructure and hydrogen production sites.



Consider the case for targeting electricity from the currently limited volume of a CfD-derived renewables pool to include steel production, as an integral part of a transition support package.



Explore options to enhance the Power Purchase Agreement (PPA) market, including mitigating the risk of off-taker payment default, for example by developing standardised, tradeable PPA contracts, or offering state guarantees.



Review the UK Emissions Trading System to chart a path towards linkage with the EU ETS. Alongside this, a CBAM must take full account of the climate ambition and robust carbon pricing regimes in the UK and EU so as not to place unnecessary barriers on the trade of low carbon electricity'.



Implement mandatory product standards aimed at creating demand for low carbon industrial goods and materials, outlining clear timelines for their introduction and applying them throughout the supply chain to both intermediate and finished products. The ambition of mandatory standards should increase over time to encourage innovation and decarbonisation.



- To support this, an ambitious **Green Public Procurement Strategy** would provide a strong market signal to industry and help kick-start the market for low-carbon products. In public and private procurement contracts, implement requirements for a higher percentage of goods procured to be low carbon in order to drive demand for low carbon goods and incentivise the UK's heavy industries to pivot to low carbon production.
- Put forward tangible proposals for a Carbon Border

 Adjustment Mechanism (CBAM) to prevent high
 carbon imports from gaining a growing market share
 at the expense of low carbon goods produced by UK
 firms.
- Build on the Industrial Decarbonisation and Net Zero
 Strategies to deliver a clear policy framework for industrial decarbonisation in response to the IRA and GDIP that attracts investment in UK industry and incentivises the onshoring of manufacturing process for green technologies. This must include competitiveness support for heavy industries where there are differences in input costs between the UK and other countries linked to faster climate progress, demand- and supply-side signals.
- To support the greater adoption of best practices across industry, HM Treasury should hypothecate revenue from the sale of UK Emissions Trading Scheme (ETS) emissions allowances to fund low carbon production methods. By using the revenue raised by the sale of emissions allowances in the UK ETS to facilitate decarbonisation in a sector (for example by investing in grid development, fuel switching and electrification, or to directly cover operational expenditure (OpEx) spending), the UK Government can increase the pace and cost-effectiveness of industrial decarbonisation and improve competitiveness.





TRANSPORT

SECTOR SUMMARY

The 2021 Transport Decarbonisation Plan set out a plan for cutting emissions across all modes of transport and encouraging greater uptake of active travel options, but we have since seen a significant stagnation in policy delivery since then.

Surface transport alone accounts for 23% of the UK's emissions, before beginning to factor in those from shipping and aviation. Factors surface transport, the UK Government has focussed some of its attention on the decarbonisation of private vehicles, with increasingly strong uptake of electric vehicles. However, it is yet to set out a clear vision of how to best reduce traffic growth which will best reduce the emissions burden of the sector.

The IRA has focussed significant attention on the investment potential for electric vehicles – offering tax credits of up to \$7,500 for the purchase of an EV made in North America. This has immediately led to a major boom in America's EV sector, with Ford cutting 3,800 jobs across Europe, including 1,300 in the UK, and opening a new mega campus and two battery plants in the US alongside an investment of \$11.4bn. 18,19 This has demonstrated the attractiveness of ensuring a strong manufacturing base for electric vehicles and the materials required to make them. With the UK automotive sector facing challenges from leaving the European Union, there is an opportunity to breathe new life into the sector with the global boom in EVs.

16: Climate Change Committee (December 2020) Sixth Carbon Budget Surface Transport sector summary (Date Accessed: *20 June*) Central to success in this space is the delivery of electric vehicle charge points, which should be treated as a national infrastructure priority, led by central Government to ensure a fair delivery across the UK, coordinated by local authorities.

Key commitments from Energy Security Day





Launch the **Rapid Charging Fund** to support the upgrade of electricity capacity on the strategic road network, enabling the roll-out of ultra- rapid electric vehicle charge points.

Aim to complete the review of the **National Networks**National Policy Statement during 2023, taking account of the Government's legal net zero target.

Consultations

Publishing a final consultation on an ambitious

Zero Emission Vehicle mandate, requiring an increasing percentage of new car and van sales to be zero emissions. The ZEV mandate will be implemented in 2024.

Consult on the future regulatory framework to deliver commitments to phase out the sale of new non-zero emission HGVs and support uptake in the interim period.

Further detail needed on implementation

Bring forward a **Transport Bill** as laid out in the 2022 Queen's Speech, to provide clarity on a new class of "Low-speed Zero Emission" vehicles, including clear regulation on the use of e-scooters and other forms of micro mobility.

Look to meet e shortfall in finances that Active Travel England has described, which would enable them to equitably meet their targets across the UK.

Prepare a **public communications campaign** to inspire behaviour amongst those less likely to use public transport, and encourage more to see shared mobility as a preferable alternative to private mobility.

^{17:} Department for Transport (May 2022) Quick off the spark: electric vehicle sales continue to soar in green revolution

^{18:} Ford (27 September 2021) Ford To Lead America's Shift To Electric Vehicles With New Mega Campus In Tennessee And Twin Battery Plants In Kentucky (Date Accessed: 20 June)

^{19:} The BBC (17 February 2023) Ford to cut one in five jobs in the UK (Date Accessed: 20 June)





Publication of the Government's **Low Carbon Fuels Strategy,** to provide businesses with clarity on investment decisions for heavier goods transport.

Remaining policy gaps / key next steps

- Develop a successor to the electric vehicle Plug-in
 Car Grant to ensure the continued uptake of zero-emission vehicles, and to enable the creation of a stronger second hand market in which the public can have confidence.
- Ensure a level playing field for those who do not have access to off-street parking and charging near their residence by creating price parity between VAT charged at home and at public charge points.
- Bring forward a modernised form of UK transport taxes that will help to shape a more sustainable future.
- Utilising the planned refresh to the **National Planning**Policy Framework to encourage a more holistic approach to transport and neighbourhoods.
- Develop a Rapid Charging Fund for HGVs and
 Coaches to ensure en-route provision.





HEAT AND BUILDINGS

SECTOR SUMMARY

The dual cost-of-living and energy crises brought about by Russia's invasion of Ukraine have highlighted the urgent need for improved efficiency in the UK's homes and buildings. Energy efficiency retrofits have been identified as key tools to deliver several of the UK Government's strategic goals: bolstering energy security, lowering household energy bills, reducing the need for government to lower its carbon emissions: energy use in homes accounts for 14% of total UK emission.²⁰

However, the current energy efficiency market is nascent and not operating at the scale required to address the UK's energy demand challenges or its net zero goals. Concurrently, the UK has some of the least efficient homes in Europe, with the average bill gap between an EPC C and above and an EPC D or below home standing at £614 each year based on the £3,000 Energy Price Guarantee level.21 UK homes are currently losing heat up three times faster than European neighbours, but households could save a combined £8.1bn per year at current prices if every home of EPC D or below was upgraded to EPC C, reducing UK energy use by $15\%.^{22}$

Swift, strategic and stable intervention from Government in the form of a clear, long-term public policy framework that incorporates multiple mechanisms for driving change is urgently needed to accelerate the growth of the energy efficiency retrofit market.

20: Climate Change Committee (2019) UK housing: Fit for the future?

21: Kingfisher (March 2023) Over 65s bearing brunt of higher energy bills due to energy inefficiency of their homes (Date Accessed: 20 June)

22: *Ibid*

Key commitments from Energy Security Day

- Published plans for a new Energy Company
 Obligation scheme the Great British Insulation
 Scheme which will support over 300,000
 households to improve their energy efficiency.
- Confirmation that the **Boiler Upgrade Scheme** will be extended until 2028, and Government will enhance its current marketing campaign to increase consumer uptake.
- Capital support to be extended to 2028 to facilitate the continued growth of **low carbon heat networks**, including £220 million for the Heat Network Transformation Programme over 2025/6 and 2026/7.
- Enhance the Government's **consumer energy advice** service by launching a digital eligibility checker for Government funding and a series of pilots for inperson consumer advice across five regional Net Zero hubs in England.
- Launch a digital energy advice service for small
 businesses this year to give impartial, trusted advice on improving non-domestic energy efficiency.
- Introduce a regulatory framework for heat networks and begin the implementation of heat network zoning by 2025.
- Confirmed funding of £15 million for the 2023/24

 Home Decarbonisation Skills Competition alongside recent confirmation of a new £5 million Heat Training Grant for heat pump and heat network skills.
- Develop evidence on the feasibility, costs, and benefits of converting **gas networks to hydrogen** to have hydrogen heating capacity by 2026 with continued assessment of new evidence.
- £30 million will be provided through the **Heat Pump**Investment Accelerator, leveraging up to £270
 million of private investment into manufacturing and associated supply chains.

Consultations

Commitment to consulting on a minimum energy efficiency standard for the social rental sector within six months of the Social Housing Regulation Bill receiving Royal Assent.

Government plans to consult by the end of the year on how to improve the **energy efficiency of owner-occupied homes.**



- Publish a full technical consultation for **the**Future Homes Standard and Future Building
 Standard in 2023.
- Overhaul the building physics model underpinning
 EPCs for housing and heating to better support net zero, with a consultation on this new model scheduled for later in 2023.

Further detail needed on implementation

- Clarity on how and over what time **the UK**Infrastructure Bank (UKIB) will support the
 development of financial products to mobilise green
 finance for home improvements.
- Engage consumers to facilitate the transition to low carbon forms of heating and set up a reliable system of certification for technologies unfamiliar to consumers, such as heat pumps and hybrid systems.
- Invest in **skills** and build on the recommendations of the Green Jobs Taskforce to address skills gaps in the sector and ensure the workforce is equipped with suitable knowledge to recommend, service and maintain low carbon heating systems.

Remaining policy gaps / key next steps

- Government should legislate for all properties to be Minimum Energy Performance Certificate (EPC) EPC C by 2035. This should be introduced with sufficient lead times and with appropriate funding support for the most vulnerable households. Furthermore, Government should publish the result of its consultation on introducing a new policy framework for performance-based energy ratings to overhaul the EPC system in line with industry concerns, disclosing the details of the metric which will be used to determine operational energy efficiency.
- HM Treasury should pair EPC regulation with targeted fiscal incentives, including VAT reductions on energy efficiency products, and reforming or offering rebates on Stamp Duty for properties of a better efficiency rating or incentives for households undergoing improvement. This should be applied to both domestic and commercial buildings.
- Government should establish an Energy Advice
 Service that provides information about bespoke
 energy efficiency measures for each property resident
 and owner, based on their unique circumstances.

- DESNZ and DfE should utilise the recommendations of the Green Jobs Taskforce and the knowledge of the Green Jobs Delivery Group to create and urgently publish an Energy Efficiency Installation Strategy, outlining a plan for upskilling the necessary tradespeople to install energy efficiency measures across the country.
- Government should introduce a new version of the
 Building Research Establishment's Home Quality
 Mark or the Each Home Counts Quality Mark, which
 applies to older homes rather than just new buildings.
- For those unable to pay, Government should ensure that existing **public funding schemes** such as the Public Sector Decarbonisation Scheme (2020), Boiler Upgrade Scheme (2022), and Energy Company Obligation (ECO) 4 (2022) are expanded over time.
- The (UKIB) should offer innovative products, such as 0% loans, to incentivise households to install energy efficiency measures.
- The Bank of England should offer a **Green Term**Funding Scheme.
- The Financial Conduct Authority and the Prudential Regulatory Authority should work with lenders to promote green mortgages for the purchase of higher EPC rating homes and reduce interest rates for homeowners that install energy efficiency measures.
- Regulate building design to reduce embodied and operational emissions, in line with the Part Z campaign, with the introduction of a minimum whole lifecycle carbon standard and upfront embedded carbon targets that are strengthened over time with differentiatedtargets by function and use. Government could build upon the guidance produced by the Royal Institute of Chartered Surveyors (RICS) on whole life carbon assessment for the built environment.
- Legislate for compulsory collection and reporting of tenant's building energy use to deliver Net Zero outcomes
- Publish the Government's response to the 2021 consultation on **performance based policy framework for large commercial buildings.** This should confirm a timeframe for phasing in mandatory energy ratings across all sectors, beginning with commercial offices.
- Government should make permanent zero-rated VAT on solar and energy efficiency installations.





NATURE AND CIRCULAR ECONOMY

SECTOR SUMMARY

As the UK looks to meet its net zero and wider climate ambitions, it is clear that the natural environment will have a crucial role to play - although it is often not sufficiently recognised. Chris Skidmore MP's Mission Zero review called for the embedding of nature and habitat restoration throughout the transition, as well as the need to stimulate more efficient and circular use.

This came alongside findings from the Climate Change Committee, which highlighted in its latest adaptation monitoring framework that the UK is falling significantly behind in planning for the impact of climate change despite experiences in recent years of extreme weather impacts. The report makes clear that "wider policy priorities, including net zero and nature recovery, will fail if adaptation to climate change is not incorporated from the start" and that we now face a make-or-break moment in adapting to climate change.²³

Consequently, accelerating progress on natural capital and adapting to climate change will be essential to ensure that we are able to decarbonise across the economy while simultaneously tackling the second major crisis facing us: biodiversity loss.

Nature

The last year has seen significant milestones on nature – with legally binding long-term environmental targets published and the appearance of the first Environmental Improvement Plan setting out the UK Government's plans for the next five years. At the heart of the proposals is an apex target requiring Government to halt the decline in biodiversity by 2030 – by improving the quality of the UK's environment, improving the use of its resources, and improving adaptation.

23: Climate Change Committee (2023) CCC Adaptation Monitoring Framework

Circular economy

Despite the clear environmental, competitiveness and economic resilience benefits, UK policy development on circular economy has lacked ambition, scope, pace and detail. Although the 2018 Resources and Waste Strategy built a positive overarching vision, the policy area appears to have received limited buy-in from other government departments beyond the Department for Environment, Food and Rural Affairs (Defra). That said, even within Defra, policy commitments have been piecemeal and subject to repeated delays, with a statutory long-term target on resource productivity missing from the statutory long-term targets published by the end of 2022.

Key commitments

Nature



The UK Government will publish its next National Adaptation Programme (NAP3), which the CCC has urged Government to make "much more ambitious than its predecessors and lead to a long overdue shift in focus forwards the delivery of effective adaptation".²⁴

Set out how farmers will be supported to understand their emission sources through **carbon audits** by 2024.

Circular Economy

Publish consultation responses on **consistency** in household and business recycling in England, introducing a Deposit Return Scheme for drink containers from October 2025 and implementing packaging Extended Producer Responsibility from 2024.

Publish Government's response to the consultation on a revised **Waste Prevention Programme for England** alongside the new programme 'Maximising Resources, Minimising Waste'.

24: *ibid*



Remaining policy gaps

Nature

- Set clear **interim targets for adaptation measures** so that there is clear trajectory of Government's progress on building resilience to the impact of climate change.
- Build on the findings of The Economics of
 Biodiversity: The Dasgupta Review, to set forward
 practical next steps to build a more well-rounded
 understanding of economic growth and recognises
 the economic importance of nature.
- Provide further information on how Local Nature

 Recovery Strategies will work alongside other
 evolving initiatives, such as biodiversity net gain,
 planning reform and environmental land management
 schemes (ELMs).
- Ensure that **ELMs are sufficiently resourced** to drive a significant shift in agricultural practices to deliver environmental improvements. Particularly in relation to the Local Nature Recovery (LNR) and the Landscape Recovery schemes (LR).
- Clearly set out how nature restoration and decarbonisation will be integrated throughout the whole planning process, including recommendations set out in the Heat and Buildings section above.
- Clarity on how the **Net Zero Systems Tool** can be used to gain better understanding of dependencies and trade-offs within the land use system, as well as knock-on impacts in other areas.
- Assess opportunities to introduce mandatory

 TNFD reporting for financial institutions and large companies, to align with current requirements for TCFD.

Circular Economy

- Urgently implement the policy proposals first set out in the Resources and Waste Strategy of 2018, by prioritising the development of mandatory eco-design standards and lifecycle assessments, with the aim of capturing a rapidly growing range of priority products/ sectors.
- Introduce **fiscal mechanisms** to reflect the whole lifecycle economic and environmental benefits of using secondary materials, for example adjusting VAT rates on repair services and the regeneration of the housing stock.
- Develop criteria for the £290 billion a year spent by
 the UK on public procurement to drive demand for products and services with higher resource efficiency standards.
- Use tax incentives, such as reduced business rates on waste materials sold in the UK market, to incentivise waste management and sorting companies to supply valuable scrap and waste materials to UK industry rather than the export market. This is particularly important where materials are recovered at a high rate (such as scrap steel), but not retained in the UK market.
- Building on the Green Jobs Taskforce, the
 Government should adopt a comprehensive low
 carbon skills strategy to equip our workforce with the
 skills they will need in a more circular economy.
- Provide public finance to support the development of critical infrastructure and facilities for recycling, repair, remanufacturing and reuse.





FINANCE AND THE ECONOMY

SECTOR SUMMARY

The publication of the Government's update to its Green Finance Strategy provides significant detail on plans to embed sustainability and climate change into the decision making of businesses and financial institutions. The UK is a global leader in green finance, with London ranked as the top financial centre above Amsterdam, New York, Singapore, and others.²⁵

As the world's leading exporter of financial services, green finance offers the UK significant potential for sustainable growth.²⁶ Low-carbon financial services could generate an export opportunity of up to £7.5 billion per year in 2030, increasing to £17 billion by 2050.²⁷

Steering private investment into emerging green markets and sectors of the economy will create jobs and level up the UK economy. The Climate Change Committee (CCC) estimates that low carbon investment must scale to £50 billion each year from 2030 to deliver Net Zero.28 The bulk of this finance will come primarily from the private sector. When published, the 2019 Green Finance Strategy focused on two central aims: aligning private sector financial flows with net zero and strengthening the competitiveness of the UK financial services sector. The recent update takes stock of current progress and sets out how the financial sector can further support energy security, climate, and environmental goals.

Key commitments from Energy Security Day

Government has published the **Nature Markets**Framework which sets out its approach to supporting and accelerating growth in nature markets.

- 25: Z/Yen (2022) The Global Green Finance Index 10
- 26: The City UK (2023) Key facts about the UK as an international financial centre 2022
- 27: Social Market Foundation (2022) Financial services and net zero: Seizing the opportunity
- 28: Climate Change Committee (2020) Sixth Carbon Budget

- Published the recommendations around the role
 of regulators and regulations through the Patrick
 Vallance-led review of how the UK can better regulate
 emerging technologies to ensure growth.
- Provided further details on the assessment and endorsement process of the International Sustainability Standards Board (ISSB). The Government will set up a framework to assess these standards for their suitability for adoption in the UK as soon as the final standards are published, expected June 2023. There will be two advisory committees to support its decision making and aims to make an endorsement decision within 12 months of the final standards being published.
- The Government will launch a **Transition Finance**Market Review, an industry-led market review into how the UK can enhance its position and become the best place in the world for raising transition capital.
- There will be an update to net zero investment roadmaps across economic sectors in 2023 and will publish a roadmap to guide nature positive investment in key sectors by 2024
- A commitment to relaunch the Green Finance

 Education Charter which will expand to encompass more professional bodies and include a broader range of topics such as biodiversity loss, transitioning planning, and nature-based finance.
- The Financial Conduct Authority, Financial Reporting Council, and The Pensions Regulator will review whether the stewardship code is creating a market for effective stewardship and the need for any further regulation.
- The Government has commissioned two pieces of external research to **scope investment tracking methodologies** and evaluate available data sources.

 This will help the Government better track private investment into the net zero economy. A pilot of the UK Landscape of Climate Finance research will conclude in summer 2023.
- Government expects to invest approximately

 £4.2 billion in net zero R&I between 2022–25.

 Key areas identified are transport, power, industry and low carbon hydrogen, heat and buildings, natural resources/waste/F-Gases, whole systems, and CCUS/GGRs.



Consultations



A commitment to consult on the introduction of requirements for the UK's largest companies to disclose their transition plans, if they have them.

A commitment to delivering the UK Green Taxonomy, with a consultation expected in autumn 2023. The Government also proposed that nuclear be included, set out that it will explore the appropriateness of a 'transition taxonomy,' and indicated that companies would be expected to report voluntarily against the taxonomy for a period of at least two reporting years, after which the Government would explore mandatory disclosures.

Launched a consultation on regulating ESG rating providers.

A commitment to launch a call for evidence on scope 3 greenhouse gas emissions reporting, expected in Q3 this year. The Government will also update the Environmental Reporting Guidelines, which provides voluntary guidance for UK organisations.

Further detail needed on implementation

Publish a timeline detailing when the SDR will be put in place for businesses and investment products, when businesses will be required to publish net zero transition plans, and when businesses will be required to disclose alignment of activities against the new UK Green Taxonomy.

Ensure interoperability between the UK SDR and UK Green Taxonomy and equivalents in the EU - including the EU's Sustainable Finance Disclosure Regulation (SFDR) and the EU Taxonomy - and internationally, to ensure that businesses operating in several jurisdictions are not subject to multiple reporting requirements that may be incompatible.

Ensure the Green Gilt is scaled up to meet to demand, which was 10:1 for the first issuance round.

Provide further details on when it will become mandatory for businesses and financial institutions to publish transition plans to meet net zero, including the scope of businesses included and a clear timeline.

Remaining policy gaps



 Develop the role of the UK Infrastructure Bank to play a role similar to that of the KfW in Germany, with a clear mandate to support investment in complex low carbon and environmental projects and in regions severely impacted by the COVID-19 crisis.



Improve the risk profile for green investment through the introduction of a 'brown penalising factor' as part of the capital weighting requirements.





The Government should make material scope 3 emissions reporting mandatory - but allow for the use of proxy data (such as through the National Renewable Energy Laboratory) to calculate emissions.

The Government and regulators should prioritise interoperability on disclosures between new UK regulation and European and global regulatory initiatives. It may be desirable for the UK to develop more ambitious approaches on environmental sustainability which go beyond European and global standards, so long as these are scientifically justifiable and retain a degree of interoperability with these existing standards.

The PRA must address the link between capital allocation and causes of climate change, considering changes to capital requirements to more accurately reflect the risks associated with investing in assets which are incompatible with a 1.5°C pathway and risk becoming stranded.

Financial regulators should be given the mandate and responsibility for overseeing implementation of net zero transition plans, in addition to overseeing the creation of these plans.



- The Government must use public finance tools such as (UKIB) and the green gilt to de-risk climate-related investments and crowd-in private finance to the infrastructure, technologies and markets needed to accelerate the low carbon transition.
- When the Government begins tracking private financial flows into low carbon solutions, the UK Green Taxonomy should be used as a benchmark.





SKILLS

SECTOR SUMMARY

Embedded across the economy and crucial to the delivery of the UK's net zero target is the issue of skills. Ensuring skills and knowledge supply to meet the demand from employers and support the growth of new sectors will be fundamental. The UK Government has recognised the importance of this agenda through the work of the Green Jobs Taskforce and the commitment in the Powering Up Britain publication to publish a Net Zero and Nature Workforce Action Plan. Delivering on the commitment to secure 2 million green jobs by 2030 will require robust action on a number of fronts – including in the education and further education sectors to secure the pipeline of future talent, in industry to support those already in work, and in providing an enabling policy environment where industry and educational providers can have certainty and develop the resources and make investments needed.

To secure actions in all those areas, it will be essential that Government urgently progresses with its skills policy development and set out a clear low carbon skills strategy that bring together these different strands and respond to the recommendations made by the Green Jobs Delivery Group.

Key commitments from Energy Security Day

Publish a joint Government-industry **Net Zero and**Nature Workforce Action Plan in the first half of
2024, representing the culmination of several sectoral
assessments in the coming 12 months.

From spring this year, the Department for Energy
Security and Net Zero (DESNZ) will **publish the**Green Jobs Delivery Group's biannual updates from the co-chairs.

Further detail needed on implementation



Support the development of **sectoral skills plans** across the economy, building on the work of the Green Jobs Delivery Group.



Respond **directly to outstanding recommendations** made by the Green Jobs Taskforce in its final report from 2021.

Remaining policy gaps



Government should develop a national low carbon skills strategy that embeds sustainability and net zero delivery across the whole education system, including apprenticeship programmes, higher education and lifelong learning.



Government should **update apprenticeship standards** to integrate climate and sustainability and give businesses the flexibility they need to teach their workforce skills that go beyond their current organisation's remit. Shorter term qualifications should be introduced alongside apprenticeships to provide the skills of the future for those enrolling in further education courses, as per the Lifetime Skills Guarantee.



Business and national government should ensure better access to private finance by **further developing the role of (UKIB).** This bank should channel institutional capital and private savings to direct low carbon and skills investment towards parts of the country in most urgent need of economic regeneration.



Simplify and expand the Apprenticeships Levy and amend the Lifetime Skills Guarantee to allow participation from people that already have a Level 3 qualification, and remove restrictions that limit participation to Level 3 or below.



Government should explore how it can **better collect data on green jobs and skills** both locally and nationally.

The Aldersgate Group is an alliance of major businesses, academic institutions, professional institutes, and civil society organisations driving action for a sustainable and competitive economy. Our corporate members, who have a collective turnover in excess of £550bn, believe that ambitious and stable low carbon and environmental policies make clear economic sense for the UK.

