

Leading the Way:

How government can
accelerate UK climate
action across the
economy

The University of Cambridge Institute for Sustainability Leadership

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Authors and acknowledgements

This briefing was prepared by Harry Greenfield and Beth Barker, with support from Beverley Cornaby, Eliot Whittington, Jenifer Elmslie and Isabelle Cross.

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Executive summary

Strong leadership supported by a clear, long-term implementation plan are crucial for the UK to meet its net zero target while growing its economy. Government and business have led the way at various points in recent years. Despite this progress, focus needs to move urgently from developing the right goals to delivering emissions reductions, turning ambition into action.

The UK Corporate Leaders Group (CLG UK) recognises the important progress the UK has already made towards meeting its net zero targets and its ambition to maintain its position as a world leader on climate action. Most notably, the UK committing the 2008 Climate Change Act and net zero by 2050 target into law has elevated it as a global leader, and alongside holding the COP26 Presidency, enabled business climate ambition and action.

However, to keep the UK on track to achieving its net zero targets and a competitive economy based on green growth, cross-sectoral and cross-government leadership is needed. Addressing the following cross-cutting levers could unlock action across the economy:

- **Governance:** Identifying and communicating the roles and responsibilities of different actors in the public and private sectors.
- **Public and business engagement:** Sustained engagement with business and the public on the details of delivery.
- **Fair funding and affordability:** Ensuring the costs of the net zero transition are fairly shared between households, businesses and government.
- **Skills and jobs:** Delivering the skills and jobs needed for net zero and ensuring a just transition.
- **Finance and investment:** Ensuring the right investment levels to deliver net zero.
- **Innovation:** Creating the enabling conditions for innovation and ensuring results are mainstreamed into the economy.
- **Infrastructure:** Ensuring that infrastructure needs are anticipated, investment unlocked, and barriers to net zero infrastructure removed.

Challenges exist in each of these areas and while specific needs differ according to sector or business, a co-ordinated approach to each one is needed. The scale of the necessary transition across society and the economy will not be achieved with a piecemeal approach. As businesses with leading climate targets, members of CLG UK are already looking beyond their own individual businesses or sectors to what is needed at a cross-sectoral and cross-governmental level to implement their own plans and support national progress.

Taking this holistic view presents opportunities to remove barriers and put in place the enabling policy environment needed to drive action on cutting emissions. A cross-cutting approach reveals beneficial synergies enabling the transformative actions necessary to address the needs of people, climate and nature simultaneously.

To lead the way, CLG UK proposes the following priority cross-cutting actions should be implemented by government by the end of 2023:

1. **Governance:** Establish an Office for Net Zero to drive delivery and monitor progress across government.¹
2. **Public and business engagement:** Commission the Office for National Statistics (ONS) or UK Research and Innovation (UKRI) to lead an engagement exercise with business to define their data needs to measure emissions through their supply chains, leading to greater transparency of action.²
3. **Fair funding and affordability:** Develop a Net Zero Fiscal Reform Strategy that addresses the fiscal impact of net zero policies and uses the tax system to drive the transition of the economy to net zero.
4. **Skills and jobs:** Develop a Net Zero Skills Action Plan setting out what skills and jobs will be required, at what stage in the transition, and how these needs will be met.³
5. **Finance and investment:** Support ambitious and best practice climate-related disclosures and provide the enabling data and regulatory environment to empower financiers and business to make better informed decisions about capital allocation.
6. **Innovation:** Clearly set out priorities for technology and innovation in order to send a signal to the market.
7. **Infrastructure:** Undertake wide-ranging planning reform on the local and national level, including the introduction of a net zero test and a review of bottlenecks in the system.

Introduction

Strong leadership supported by a clear, long-term implementation plan are crucial for the UK to meet its net zero target while growing its economy. Government and business have led the way at various points over the last few years, with COP26 acting as a signal for businesses to take the lead with the number of corporates setting climate commitments increasing exponentially. To accelerate further business action and support them in implementing their commitments, government needs to take the lead with a longer-term plan, identifying and removing barriers to action.

CLG UK recognises the important progress the UK has already made towards meeting its net zero targets and its ambition to maintain its position as a world leader on climate action. The UK's position as a global leader has been reaffirmed in various ways, including committing the 2008 Climate Change Act to legislation and enshrining the net zero by 2050 target in law.⁴ These sit alongside sector-specific policies such as the commitment to end the sale of new petrol and diesel vehicles by 2030, the support to develop a world-leading offshore wind sector, and government commitments to mobilise investment in the green economy through the Ten Point Plan for a Green Industrial Revolution in 2019.⁵ These and other commitments are starting to bear fruit and offer reassurance to the private sector and business that the government is committed to the transformation needed to achieve net zero.

However, while progress continues to be made on various fronts, **much more cross-sectoral and cross-government leadership is needed to achieve the net zero target and a competitive economy based on green growth.** Above all, the focus needs to move from developing the right goals to delivering emission reductions, and from strategies that set out good ambitions to providing the detail and the follow-through needed for action. Moving to implementation may reveal areas where policies and plans need to be adjusted, **with a focus on turning ambition into action.**

In planning for the net zero transition, there is an opportunity to take a step back and look at what other benefits can be delivered from these changes. Climate change is one symptom of a wider breakdown in the way the economy values the natural environment. We are also seeing rising social pressures, which the current cost of living crisis makes both more acute and harder to ignore. The measures needed to address climate change can bring wider benefits such as greater resilience; more efficient use of natural resources; reducing waste and pollution; and the recovery of nature. Realising this opportunity will require identifying from the outset the additional positive benefits that can come from the deep transformations required by the net zero transition.

UK businesses with ambitious climate strategies, including CLG UK members, continue to demonstrate progress in reducing emissions in their own businesses and sectors. This policy briefing includes several examples of this. But the scale of the transition to net zero requires going beyond the actions of individual businesses or sectors – there are too many interdependencies and potential trade-offs for a siloed approach.

Businesses, especially members of CLG UK, are aware that it is only by looking beyond their own sectors that the UK can achieve the scale of transition needed. Each business and sector has a role to play in its own decarbonisation, but true business climate leadership means being outward-looking. This means creating partnerships, including public–private ones, across the economy and motivating customers, supply chains and policymakers to increase ambition and action on net zero.

Government needs to lead the way, providing real political leadership and making climate a central factor in all its activities. Taking a cross-cutting approach will be key to this. **Leadership and co-ordination should cut across government departments to future-proof UK climate policy and the UK economy.** As *Mission Zero*, the recent Net Zero Review, led by Chris Skidmore MP, makes clear in its final report, **there are economic opportunities for the UK from the transition to net zero, but these opportunities will only be realised with a concerted effort now.**⁶

A cross-sectoral and cross-government approach to implementing net zero

Background and context setting

In 2021, CLG UK published [Bridging the Gap: UK business and policy leadership for net zero](#),⁷ setting out where action was needed to meet the UK's net zero by 2050 target. Building on this, in this briefing, CLG UK sets out where progress is still needed. It draws on feedback from CLG UK members on the actions that businesses have been taking and analysis of government progress on decarbonisation and achieving net zero.

The seven cross-cutting enablers

Each sector of the economy will need to focus on its own decarbonisation targets, and government policy must support these efforts. However, despite the variations between sectors, there are a number of cross-cutting enabling actions that will support decarbonisation across the economy. This includes both actions that apply to all businesses regardless of sector, and cross-government activity, where multiple departments need to work together.

In their 2022 annual progress report to parliament, the Climate Change Committee (CCC) identified several cross-cutting areas and corresponding policy recommendations that are needed to achieve net zero (see Figure 1).⁸ The CCC recognises that these cross-cutting issues represent important enablers of net zero, and failure to address them could hold back efforts made at the sectoral level. Taking these as the starting point, this CLG UK briefing outlines why each of these cross-cutting issues is so important to business. A cross-cutting approach can identify synergies and co-benefits and encourage the spread of best practice between sectors. In the following chapters, we identify which of the CCC recommendations resonate most with UK business leaders and highlight business's priorities for government leadership in these areas.

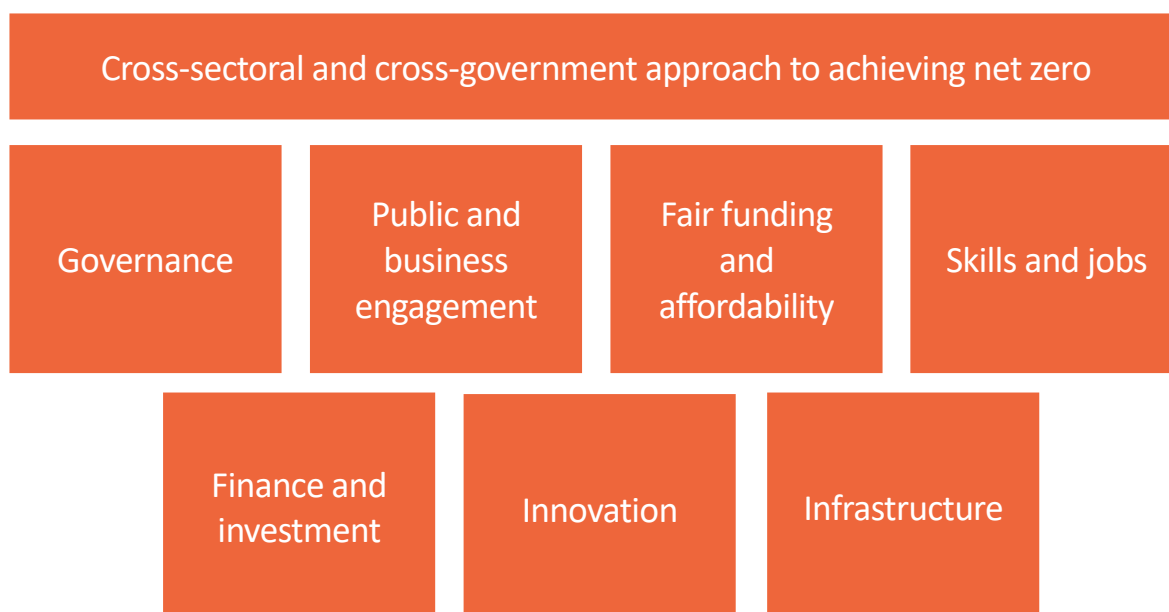


Figure 1: Cross-cutting enablers for climate action

Linking adaptation to mitigation efforts

Efforts needed to mitigate climate change will take place in a world that is already warming. This will make reducing emissions harder, and without adaptation there is a risk that the net zero target will not be met. Each business has a responsibility to make climate resilience a strategic priority and many are making progress on this front. Government also has a role in showing leadership, particularly when climate change poses a risk to critical infrastructure, as identified in a recent report by the Joint Committee on the National Security Strategy (JCNSS).⁹

The scale of the transition to net zero will require transformation of the whole economy – this is an opportunity to build in climate resilience and adaptation at the same time. The cross-cutting issues discussed in this report offer opportunities to address climate adaptation and resilience at the same time as reducing emissions. Improvements to governance, public and business engagement, ensuring the workforce has the necessary skills and investing in innovation and infrastructure will all be required to ensure our society and economy can adapt to the impacts of climate change.

Building on the Net Zero Review recommendations

The recent independent review by Chris Skidmore MP, *Mission Zero*,¹⁰ set out nearly 130 recommendations to government. It was written in the context of demonstrating how delivering net zero can contribute to economic growth in the UK. As such, by drawing on the outcomes of discussions with CLG UK members, this briefing supports and amplifies a number of these recommendations from that review which resonate strongly with UK businesses. It also highlights the challenges CLG UK members feel are still present, the likely impact of these on business and where the opportunities are to support business. It concludes with a series of key recommendations for immediate action by government in 2023.



Photo credit: Jamie Street

1. Governance

Reaching net zero is a huge task with roles for all parts of government, society and the economy. Success will depend on identifying and communicating the roles and responsibilities of different actors in the public and private sector. This should be coupled with co-ordination, leadership and oversight from central government to drive net zero forward.

Challenges

The UK faces the following business-relevant challenges in implementing its net zero goals:

- Inconsistent decision-making from government on net zero implementation leads to an uncertain decision-making environment for businesses and consumers, without the long-term signals needed.
- Lack of clarity about the requirements to meet net zero means key actors are uncertain about their role or unable to focus on delivery.
- Important contributions to net zero fall through the gaps, with no one taking responsibility.
- Effort is not focused efficiently due to a lack of a supporting long-term, strategic framework.
- Lack of monitoring and oversight means policies and strategies fail to keep pace with changing circumstances.
- Siloed thinking, within and outside of government, leads to decisions which are incompatible with (or unnecessarily impede) net zero.

Impact on business

Mission Zero highlighted the importance of government in setting out the Net Zero Strategy and providing the “certainty, clarity, continuity, and consistency” needed to drive green growth.¹¹ **Better governance would result in more policy stability and greater transparency around the pathway to net zero.** This will give businesses, investors and consumers the confidence to make decisions and investments.

Businesses have expressed concern that, despite headline commitments to net zero, some government policies prevent progress in delivery, or represent missed opportunities where more could be done. **Government should make sure that net zero is embedded and actions joined up between and across its departments and activities.** This will require efforts to engage and educate civil servants in how net zero is relevant to different areas of government and build internal frameworks to allow climate mitigation and adaptation to be integrated into decision-making.

The UK Net Zero Strategy states that 30 per cent of the emissions reductions needed to deliver the Strategy rely on local authority involvement, while 82 per cent of emissions are within local authorities’ scope of influence.¹² Despite a high level of climate ambition within local government, businesses and communities, this is not accompanied by a shared understanding of where local effort is best placed. Gathering data and sharing best practice across local government would help. Co-ordination between national and local government is a problem, as is the lack of capacity within local government, especially to drive investment in low carbon infrastructure. **Greater clarity on devolved power would enable business to act and invest locally in alignment with local government net zero and adaptation strategy.**

Opportunities

The UK government should:

- establish an Office for Net Zero to drive delivery and monitor progress across government
- establish a net zero test to ensure all government policy is compatible with emissions targets
- set out how the Net Zero Strategy will be delivered, defining the roles and responsibilities of different actors on different scales and how action will be co-ordinated
- establish better mechanisms to ensure central and local government and the devolved administrations work together to deliver and enable net zero.

2. Public and business engagement

Achieving net zero will only be possible through businesses taking ambitious action to cut emissions and through consumer behaviour change. Government-led implementation requires more sustained engagement with business and the public on the details of delivery.

Challenges

The UK faces the following business-relevant challenges in implementing its net zero goals:

- A lack of engagement leads to low buy-in for net zero policies and actions among business and the public.
- Business implementation is constrained to the most engaged businesses, limiting the scale and pace of the transition, as well as storing up future transition risks for businesses that fail to engage early.
- Businesses fail to move from ambition to action due to uncertainty over what to do or barriers to delivery.
- Lack of public engagement leads to insufficient attention paid to the role of changing consumer demand, individual behaviour change and individual investment for achieving net zero.

Impact on business

Government-led **business engagement** is vital for creating buy-in for net zero policies and implementation across the economy. Businesses that have not yet engaged, or that take opposing actions, such as lobbying against climate policies, can create barriers for those businesses taking action, including making it challenging for them to reduce emissions from within their value chains. The interconnectivity of business activities means that all businesses rely on co-operation along their value chains to tackle emissions reductions, whether in their own operations (scope 1 and 2 emissions) or by their suppliers or customers (scope 3 emissions), alongside tackling wider issues including adaptation and nature restoration. Government-led business engagement can help spread good practice and gain insights into where barriers exist and how to work with businesses to remove them. Transparency on this topic will also support wider societal trust in business as it will make it harder to make unsubstantiated environmental claims.

There are a huge range of actions and supporting policies needed to achieve net zero. Businesses need a long line of sight of upcoming policy interventions and obligations, as well as the opportunity to help shape policy and regulation to make it most effective. A major implication of limited or poor engagement is a widespread lack of clarity on what is expected from businesses or what support is available to them, especially where this entails dramatic changes to business models or operations. Relying on voluntary action risks leaving some businesses or sectors behind or exposing them to unsustainable pressures from future requirements to rapidly decarbonise to meet climate targets. Good engagement with businesses will ensure they have the time and support needed to make the necessary changes for the net zero transition.

Particular focus should be given to supporting small and medium enterprises (SMEs) to support them with their net zero transition. SMEs account for almost one-third of all UK emissions and around half of total UK business emissions.¹³ Many larger businesses have begun engaging with SMEs along their value chains, but this is revealing the complexity and barriers involved, particularly around securing the necessary investment required to get to net zero.¹⁴ The CCC recommends a strategy and a package of measures for government on engaging with SMEs on decarbonisation, and CLG UK has been calling for a business engagement programme for SMEs since 2021.¹⁵ CLG UK members have said that government engagement with a wider range of UK businesses would ensure that all are able to actively play their part.

Government-led **public engagement** can support and enable action by business. Increasingly, the barrier to widespread adoption of low carbon technologies is less about cost than a lack of awareness and demand from consumers. Awareness raising about low carbon choices and actions people can take, for example in refurbishing buildings, installing heat pumps or changing their lighting sources, can help to build and sustain new markets, skills and innovations by businesses. There are positive feedback loops as the spread of social norms helps build public acceptability.¹⁶ Consumer activity has a significant role to play in the transition, with around 60 per cent of emissions abatement by 2035 relying on consumer choices.¹⁷

Public engagement can also help secure buy-in for net zero policies, which may be at risk if public support wanes. Some elements of the transition to net zero will require difficult decisions that need significant behaviour change (such as ultra-low emission zones or decreased aviation use). Public consultation and engagement can lead to more inclusive policies, increase social acceptance for these policy decisions and avoid the rushed introduction of policies that could then appear draconian or restrictive. This public support is essential for businesses that require consistent government messaging around net zero to take long-term action themselves.

For both businesses and households, engagement offers the opportunity to set out in clear terms what the transition to a net zero future looks like and secure consensus for it. Engagement based around a clear plan and strategy can provide a structure, mission and direction.

Opportunities

The UK government should:

- commission ONS or UKRI to lead an engagement exercise with business to define their data needs to measure emissions through their supply chains, leading to greater transparency of action.
- empower local government to engage with businesses at a place-based level
- implement the CCC's recommendation for government to set out a public engagement strategy for net zero, which includes deliberative processes to engage citizens in debate on the best policies to deliver net zero, and public information campaigns to raise awareness and help the public prepare for upcoming changes
- implement the Behavioural Insights Team's recommendation for a government-led system of ecolabels across key product sectors to help raise awareness for green choices¹⁸
- create a new public platform for 'Net Zero Data', using public reporting on progress in meeting net zero to enable both greater public communication and scrutiny of government and business progress.



Photo credit: Sincerely Media

3. Fair funding and affordability

Funding the net zero transition must mean costs are fairly shared between households, businesses and government. The way costs are spread will have an impact on the speed and acceptability of the transition, with implications for government revenues, household income and businesses.

Challenges

The UK faces the following business-relevant challenges in implementing its net zero goals:

- The cost of achieving net zero falls unexpectedly, or unfairly, on certain groups or sectors, undermining support for net zero.
- The up-front costs of decarbonisation discourage change and prevent long-term benefits from being realised.
- The net zero transition reduces receipts to the Exchequer with an impact on public finances and broader government objectives.

Impact on business

The immediate cost of living and energy crises have brought the issue of affordability to the fore, with increasing concern raised in some quarters about the costs of achieving net zero and who will bear them. Ultimately, costs will be passed on to consumers and households, whether in the form of lower carbon goods and services, or investment such as retrofitting privately owned housing stock. If delivering net zero is perceived to be unaffordable, this could slow down adoption of important measures among households, even if acting now is a better economic decision in the long term. An inability to afford up-front costs disadvantages sections of society and limits the scope and pace of the transition to net zero.

Designing a policy response that considers the relative impacts on all parts of society can address concerns over affordability and mitigate worst impacts. Government has a role to play, both in modelling the costs to different sections of society and in directing public spending and policy to protect the least well-off households. Businesses are keen to engage with government to ensure a just transition, which cuts across both costs and affordability, but also jobs and skills, investment and public engagement. Policy that ensures a fair distribution of costs risks can help maintain the public mandate for the transition to net zero and ensure the work businesses are already undertaking to decarbonise the economy is not negated.

Reforming fiscal incentives to deliver net zero

The tax system can and should be optimised to help incentivise net zero. Investments in energy efficiency, by both households and businesses, will offer economic benefits in the long term. Fiscal reforms can ensure that these up-front costs are more affordable, for example introducing reduced or zero-rated VAT for consumers of low energy products and re-instating the 'enhanced capital allowances'¹⁹ for business investment. This will avoid a situation where only the biggest businesses and most well-off consumers can afford to make these changes. Fiscal reforms also need to remove subsidies for environmentally harmful activities, including those for fossil fuels, to ensure there are no unintended incentives for environmentally damaging activities.

Government also needs to be clearer about how the tax system will recoup some of the lost revenue resulting from the transition of the economy to net zero, including from the loss of Fuel Duty and Vehicle Excise Duty. To avoid pressures on public finances, this aspect of net zero should be encompassed within any reform of the tax system. Taxation of high-emitting goods and services should be considered, as well as addressing how low carbon equivalents will be taxed in the future, as they become the norm across the economy.

Opportunities

The UK government should:

- develop a Net Zero Fiscal Reform Strategy that addresses the fiscal impact of net zero policies and ensures the tax system is used to drive the transition of the economy to net zero, and that government subsidies are not encouraging environmentally harmful activities

- model the financial impact of policies on households and put in place mitigating measures to protect the poorest households.



Photo credit: myenergi

4. Skills and jobs

The transition to net zero will require new skills and create new jobs, as well as implying a move away from carbon-intensive jobs. This transition will need to be well managed to ensure a lack of skilled workers does not delay net zero, while also ensuring a just transition that minimises negative impacts on the existing workforce.

Challenges

The UK faces the following business-relevant challenges in implementing its net zero goals:

- A lack of skilled workers in the right place at the right time can slow down key elements of decarbonisation and hampers the growth of related industries.
- Green job creation is focused on countries other than the UK (either as a symptom or cause of a loss of UK competitiveness).
- The impacts of decarbonisation on the labour force risk a public backlash against net zero.
- There is a damaging time lag between identifying labour needs and delivery of a trained workforce.
- There is difficulty allocating responsibilities between local authorities, training providers and businesses.

Impact on business

Decarbonising the economy will mean a different mix of jobs and skills than we have now. This offers opportunities for better quality green jobs and could contribute to the government's levelling up agenda. The Energy Innovation Needs Assessment commissioned by government estimated that up to 500,000 new jobs could be created in decarbonisation by 2050.²⁰ But a lack of the right skills could also present barriers to climate transition if plans are not put in place early enough. Government incentives, investment or policy support for a transition to new technologies will hit a bottleneck if the right actions are not taken to ensure we have the skilled workers needed to deliver the transition. Problems, including higher costs, will arise if the transition merely sees skilled workers move from high to low carbon sectors, without an overall increase in the skilled workforce pool.

The Green Jobs Taskforce, established in 2020, identified many challenges in delivering the skills and jobs needed for the transition to net zero.²¹ Despite recommendations to government, businesses lack confidence that progress is being made, especially given the long lead time needed to ensure the right skills are available in the right place at the right time. Government needs to sustain funding for skills training beyond the Spending Review cycle timelines, especially in sectors where it hopes to spur market growth (such as heat pumps). This will give business confidence that jobs will continue to exist in these sectors over the long term.

Identifying the skills needed and ensuring the workforce is able to deliver is an important task. While the market will deliver some of the skills needed, the time needed to train workers in new skills means that horizon scanning and investment in training now will be needed. There needs to be a balance between preparing for the jobs of the future and avoiding training workers for jobs that may not materialise. Clearer signals from government about its priorities, close engagement between business and government, and publication of data about the workforce are the keys to successfully navigating this pathway.

Opportunities

The UK government should:

- develop a Net Zero Skills Action Plan setting out what skills and jobs will be required, at what stage in the transition, and how these needs will be met
- build the evidence base about the current labour market and sectors at risk from the transition
- fully implement the recommendations of the UK Green Jobs Taskforce and continue to use this forum to engage with employers on labour needs for net zero, as recommended in *Mission Zero*
- empower local planning authorities to make decisions to support the need for upskilling at the local level.

5. Finance and investment

The cost of net zero will be largely met by the private sector and there are examples of where this is already happening. However, systemic issues need to be addressed to ensure investment flows to the right places.

Challenges

The UK faces the following business-relevant challenges in implementing its net zero goals:

- Lack of investment slows down the transition to net zero or makes it more expensive to deliver.
- UK competitiveness decreases as investment in the green economy is drawn towards countries with more attractive investment environments.
- The City of London risks failing to innovate sufficiently to keep up with new investment trends, driven by the energy transition and wider changes.

Impact on business

The Net Zero Strategy estimated that we need additional investment of £50–60 billion per year in the late 2020s and 2030s to reach net zero.²² Access to capital will be vital to achieving net zero by 2050, as will incentives for businesses to invest in their own decarbonisation.

At the same time, *Mission Zero* makes clear that we are now in a global race to take advantage of the new net zero economy.²³ Other countries are not standing still, with the US, via the Inflation Reduction Act²⁴ and the EU, with its Green Deal Industrial Plan²⁵ mobilising investment in clean energy and green technologies. The UK risks falling behind and losing out on direct investment that is attracted elsewhere. Some CLG UK members are already seeing investment decisions that are being affected by these global factors.

For many businesses, the landscape can be confusing, especially when it comes to the range of government funding available, with a lack of join-up between the local and national levels. Businesses and investors also point out the mismatch between investor demand for net zero-aligned projects and investible propositions that suit their criteria, with particular barriers facing small-scale projects, which are not large enough to access large-scale institutional investment. A government strategy for funding the net zero transition, setting out the investment needs and how these will be met, would give the signals needed to financial institutions and other investors. This would help to de-risk private investment and create the enabling environment for businesses to invest more confidently.

As well as financing net zero, the UK has an opportunity to use the status of the City of London as a global financial centre to ensure the finance that flows through it is more sustainable and aligned with global climate and nature goals. Greening financial flows, as well as limiting investment in high-emitting sectors, will also indirectly encourage investment to flow into lower carbon alternatives. This will also mean measuring and mitigating climate-related financial risks (both physical and transitional) to redirect capital to resilient, net zero-aligned assets. While Task Force on Climate-related Financial Disclosures (TCFD)²⁶ reporting requirements are a positive step toward this redirection of capital at scale, collaboration with the financial sector to determine optimal transition pathways to net zero remains essential.

Opportunities

The UK government should:

- release an updated Green Finance Strategy setting out an overall strategy for how total capital costs of net zero will be met by public and private funding sources, including prioritisation of where public funds will be deployed for the transition
- support ambitious and best practice climate-related disclosures and provide the enabling data and regulatory environment to empower financiers and business to make better informed decisions about capital allocation.

6. Innovation

Achieving net zero is dependent on innovation. Innovation is not only limited to the invention of technologies, but also covers the complementary changes in processes, practices, institutions and culture which together form innovation systems. Creating the enabling conditions for innovation systems to scale, outcompete incumbent high-emission systems and diffuse into society is a prerequisite for achieving climate targets.

Challenges

The UK faces the following business-relevant challenges in implementing its net zero goals:

- Lack of investment and funding for low carbon innovation means that research and development is slow and not being scaled up at the pace required.
- Policy barriers do not create the enabling conditions for the scale-up and delivery of innovation.
- There is limited demand for innovative materials and products.
- Innovation taking place outside the UK makes the transition to net zero more expensive due to competition, and forfeits an opportunity for the UK to become an exporter of low carbon technology and innovation.

Impact on business

The pathway to net zero relies on new innovative technologies and practices being developed and rolled out across the economy. This is both a necessity for achieving climate targets and an opportunity for the UK to reap economic benefits from doing so. Innovation depends on a large range of enabling conditions, including financial intervention, regulation, cultural change and the availability of skills, which vary depending on the development stage. Tipping points can be reached when the enabling conditions allow innovation systems to outcompete incumbents.²⁷

There is a strong role for government-led funding during the early stages of innovation, which often takes place in small businesses and universities where access to private investment is limited. While some technologies, for example, renewable energy, are ready to be scaled, much of the innovation on net zero remains at low technology readiness levels. Businesses have identified a current gap in investment between technologies in their infancies and those in maturity.²⁸ As innovation moves through readiness levels to maturity, the role of government policy can provide an important signal to leverage further private investment.

A key barrier at this level of innovation is the differing skills and approaches between innovators and private investors. This is where the former may not have the commercial skills to successfully gain investment and the latter may not have the knowledge to assess the associated risk and opportunity. This is a particular problem in the case of innovation to support net zero, where short timelines require skills to be improved rapidly to enable the development and scale-up of innovation.

Once innovations are commercially viable there are many other barriers that prevent them becoming competitive and disrupting incumbent systems. Clear signals, if they are backed up by policy and the right incentives, can help create market certainty for investors and businesses to commit their business models to. For instance, in the government's Ten Point Plan, the announcement of a 600,000-unit installation target for heat pumps by 2028²⁹ provided a market signal for business to work towards. However, at present there is no clear proposed market mechanism for incentivising the installation of heat pumps, and progress on meeting this target has been slow. To support progress, government can also help stimulate market demand through public procurement for low carbon goods and services. For example, adopting innovative technologies such as installing connected LED lighting across all government buildings could drive demand and send strong signals to business.

Green innovation has huge potential for driving economic growth in the UK and creating jobs. In particular, our lead in offshore wind, financial services and technology research and development offers significant potential for leadership in net zero that allows the UK to retain its competitive advantage and reap the economic rewards. However, as other countries become increasingly ambitious, the UK government should consider how large-scale government funding can support strategic sectors, send strong signals to investors and provide long-term certainty for business to avoid being left behind in the international race to net zero.

Opportunities

The UK government should:

- clearly set out priorities for technology and innovation in order to send a signal to the market
- review funding of research and development for net zero, including government support, tax credits and enabling regulations
- review regulation across sectors that may be blocking net zero innovation development and scale-up, for instance by hindering the expansion of ancillary sectors that create enabling conditions for widespread diffusion of low carbon technologies and practices
- review which technologies provide the UK with greatest strategic advantage in terms of their current and potential decarbonising capabilities and economic growth between now and 2050. This information should be used to shape the government's research and development (R&D) prioritisation of the Net Zero Innovation Portfolio
- ensure the Department for Science, Innovation and Technology has a strong seat at the Cabinet table and does not become siloed from the key government departments working on net zero.



Photo credit: Nicholas Doherty

7. Infrastructure

Decarbonising the economy will require new and upgraded infrastructure that is resilient. A long-term, strategic approach will ensure that infrastructure needs are anticipated, investment unlocked, and barriers to net zero infrastructure removed.

Challenges

The UK faces the following business-relevant challenges in implementing its net zero goals:

- Lack of appropriate modern infrastructure causes bottlenecks to decarbonisation.
- Competition for land-use and regulation is inhibiting the rapid build-out of net zero infrastructure.
- Infrastructure may be damaged or closed due to climate impacts if adaptation and resilience are not built in.

Impact on business

The *Mission Zero* report described infrastructure as “the key that will unlock net zero”.³⁰ Historically, the UK has seen high levels of investment in low carbon infrastructure, driven by its stable market frameworks and robust, well-understood investment mechanisms, which share cross-party political support. But the scale and pace of the transition needed mean that complacency is not an option.

Large-scale infrastructure projects in the UK tend to be delivered slowly, creating challenges for businesses planning operations around the delivery of these projects. Given the short timeline to 2050, any large-scale infrastructure projects being planned or implemented now must be fully aligned with net zero. Regulators should be aware that 2050 is the latest date at which we can reach net zero, not a target delivery date. Climate adaptation should be considered simultaneously when planning infrastructure, ensuring upgrades to existing infrastructure and new developments are resilient to future climate shocks to avoid costly impacts on business and people.

Infrastructure transformation is extremely capital intensive. Government must be strategic about how to use limited public resources while leveraging private investment for infrastructure. Ensuring that UK infrastructure projects remain an attractive place to invest will be critical for decarbonisation. Moreover, public funding should be distributed across different sectors and geographies to ensure the benefits are spread across society and the economy.

Infrastructure change on the scale required for net zero will disrupt businesses and people’s lives. Government-led business and public engagement, as well as meaningful consultation, will help secure buy-in for individual infrastructure projects and the strategic approach the country takes.

Net zero infrastructure can use more land, as with renewable energy compared to fossil fuel power stations. Given competing land uses in the UK, including for food, housing and nature-based solutions, the government will need to mediate to ensure land is available for net zero infrastructure. A strategic approach to land use, in the form of a land use framework, would help create certainty for business and other land users.

Planning regulation can hamper infrastructure development, putting key 2050 delivery targets at risk. Planning reform and process streamlining on a local and national level is essential to enable the swift scale-up of key infrastructure such as renewable energy generation. Regulators, including Ofwat and Ofgem, can also inhibit strategic, anticipatory investment in resilient, net zero infrastructure that slows down the pace of delivery and risks targets being met, which is in the interest of keeping consumer prices low in the long term. Any regulation that delays investment and development puts the UK’s net zero target at risk and may lead to greater costs in the future.³¹

A final consideration is the embodied carbon in new and upgraded infrastructure. Businesses implementing their net zero strategies want to minimise the carbon emissions in the infrastructure they build through the use of low carbon materials and products. However, low carbon materials and products can be more expensive than incumbent options and in many cases the supply may still be limited. Government policy, for example low carbon product

standards and public procurement, can help create a level playing field and drive demand. Upgrades and retrofits of existing infrastructure also play an important role, and are often overlooked in favour of new infrastructure, for example when decisions over investment in infrastructure are made.

Opportunities

The UK government should:

- undertake wide-ranging planning reform on the local and national level, including the introduction of a net zero test and a review of bottlenecks in the system³²
- ensure all investments by the UK Infrastructure Bank are compatible with net zero
- revise UK planning policy to reflect the importance of energy network expansion and renewable energy generation³³
- promote the use of PAS 2080, the global standard for reducing carbon in buildings and infrastructure
- expand service regulators' remit to incorporate the net zero target and climate adaptation
- publish a land use framework that sets out how the UK can manage competing demand for land from infrastructure, farming, housing, energy, nature and other uses.



Photo credit: Andrey Metelev

Implementing net zero: priorities for action

The scale of the transition to net zero demands new approaches to policymaking and governance. Ensuring the coherence of different policies, communicating them in a clear and timely manner to stakeholders, and taking a holistic, long-term and systems-based approach will enable government to anticipate and remove barriers and bottlenecks to the transition for business. It will also make it more likely that the opportunities of the transition to net zero can be fully realised, ensuring that a future net zero UK is also one of economic growth, good jobs, a thriving natural environment and strong communities.

A great deal of evidence and consensus exists for what needs to be done to reach net zero across different sectors of the economy. The UK government has made ambitious commitments, with policies, plans and strategies already in place in many areas, but these are not always being delivered.

To support business on the transition to net zero and in implementing their own net zero plans, the UK government needs to act immediately to implement the opportunities set out within this report. Realising these opportunities will enable the net zero transition to take place smoothly and at the scale and pace required. The UK government is well placed to continue to show international leadership on climate action, by demonstrating how to move from the strong ambition to action.

All the opportunities for the government to lead through taking a cross-cutting approach are summarised in the Annex. **To lead the way, CLG UK proposes the following priority cross-cutting actions should be implemented by government by the end of 2023:**

1. **Governance:** Establish an Office for Net Zero to drive delivery and monitor progress across government.
2. **Public and business engagement:** Commission ONS or UKRI to lead an engagement exercise with business to define their data needs to measure emissions through their supply chains, leading to greater transparency of action.
3. **Fair funding and affordability:** Develop a Net Zero Fiscal Reform Strategy that addresses the fiscal impact of net zero policies and ensures the tax system is used to drive the transition of the economy to net zero, and that government subsidies are not encouraging environmentally harmful activities.
4. **Skills and jobs:** Develop a Net Zero Skills Action Plan setting out what skills and jobs will be required, at what stage in the transition, and how these needs will be met.
5. **Finance and investment:** Release an updated Green Finance Strategy setting out an overall strategy for how total capital costs of net zero will be met by public and private funding sources, including prioritisation of public funds for the transition.
6. **Innovation:** Clearly set out priorities for technology and innovation in order to send a signal to the market.
7. **Infrastructure:** Undertake wide-ranging planning reform on the local and national level, including the introduction of a net zero test and a review of bottlenecks in the system.

The UK's net zero by 2050 target has support from across business and society, and many government strategies are in place to help achieve the goal. However, the wider political and economic context creates additional pressure, both to increase the pace of delivery and to navigate a pathway that avoids the risks and capitalises on available opportunities. A relentless focus on delivering the actions that will achieve net zero and a resilient society is now required. The opportunities outlined in this briefing would enable this focus and ensure momentum is not lost at this critical time.

Annex: Summary of opportunities

Theme	Opportunity
Governance	Establish an Office for Net Zero to drive delivery and monitor progress across government.
	Establish a net zero test to ensure all government policy is compatible with emissions targets.
	Set out how the Net Zero Strategy will be delivered, defining the roles and responsibilities of different actors on different scales and how action will be co-ordinated.
	Establish better mechanisms to ensure central and local government and the devolved administrations work together to deliver and enable net zero.
Public and business engagement	Commission ONS or UKRI to lead an engagement exercise with business to define their data needs to measure emissions through their supply chains, leading to greater transparency of action.
	Empower local government to engage with businesses at a place-based level.
	Implement the CCC's recommendation for government to set out a public engagement strategy for net zero, which includes deliberative processes to engage citizens in debate on the best policies to deliver net zero, and public information campaigns to raise awareness and help the public prepare for upcoming changes.
	Implement the Behavioural Insights Team's recommendation for a government-led system of ecolabels across key product sectors to help raise awareness for green choices. ³⁴
	Create a new public platform for 'Net Zero Data', using public reporting on progress in meeting net zero to enable both greater public communication and scrutiny of government and business progress.
Fair funding and affordability	Develop a Net Zero Fiscal Reform Strategy that addresses the fiscal impact of net zero policies and ensures the tax system is used to drive the transition of the economy to net zero, and that government subsidies are not encouraging environmentally harmful activities.
	Model the financial impact of policies on households and put in place mitigating measures to protect the poorest households.
Skills and jobs	Develop a Net Zero Skills Action Plan setting out what skills and jobs will be required, at what stage in the transition, and how these needs will be met.
	Build the evidence base of the current labour market and sectors at risk from transition.
	Fully implement the recommendations of the UK Green Jobs Taskforce and continue to use this forum to engage with employers on labour needs for net zero, as recommended in <i>Mission Zero</i> .
	Empower local planning authorities to make decisions to support the need for upskilling at the local level.
Finance and investment	Release an updated Green Finance Strategy setting out an overall strategy for how total capital costs of net zero will be met by public and private funding sources, including prioritisation of public funds for the transition.
	Support ambitious and best practice climate-related disclosures and provide the enabling data and regulatory environment to empower financiers and business to make better informed decisions about capital allocation.
	Clearly set out priorities for technology and innovation in order to send a signal to the market.

Innovation	Review funding of research and development for net zero, including government support, tax credits and enabling regulations.
	Review regulation across sectors that may be blocking net zero innovation development and scale-up, for instance by hindering the expansion of ancillary sectors that create enabling conditions for widespread diffusion of low carbon technologies and practices.
	Review which technologies provide the UK with greatest strategic advantage in terms of their current and potential decarbonising capabilities and economic growth between now and 2050. This information should be used to shape the government's R&D prioritisation of the Net Zero Innovation Portfolio.
	Ensure the Department for Science, Innovation and Technology has a strong seat at the Cabinet table and does not become siloed from the key government departments working on net zero.
Infrastructure	Undertake wide-ranging planning reform on the local and national level, including the introduction of a net zero test and a review of bottlenecks in the system.
	Ensure all investments by the UK Infrastructure Bank are compatible with net zero.
	Revise UK planning policy to reflect the importance of energy network expansion and renewable energy generation.
	Promote the use of PAS 2080, the global standard for reducing carbon in buildings and infrastructure.
	Expand service regulators' remit to incorporate the net zero target and climate adaptation.
	Publish a land use framework which sets out how the UK can manage competing demand for land from infrastructure, farming, housing, energy, nature and other uses.

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