

IMPERIAL
Grantham Institute



Evidence submission

The Seventh Carbon Budget inquiry

2026

Contents

WHO WE ARE	ERROR! BOOKMARK NOT DEFINED.
EXECUTIVE SUMMARY	4
INTRODUCTION	ERROR! BOOKMARK NOT DEFINED.
1. CCC'S ASSUMPTIONS BEHIND THE BUDGET	ERROR! BOOKMARK NOT DEFINED.
2. TECHNOLOGY CHOICES	6
3. COSTS, POLICY CHOICES AND ECONOMIC IMPLICATIONS	7
4. BEHAVIOURAL CHANGE	10
5. PUBLIC ENGAGEMENT	11
REFERENCES	13

Who we are

The Grantham Institute

The Grantham Institute sits at the heart of Imperial College London's work on climate change and the environment. We drive forward discovery, convert innovations into applications, train future leaders and communicate academic knowledge to businesses, industry, and policymakers to help shape their decisions.

Imperial Policy Forum

The Imperial Policy Forum uses the latest evidence from Imperial's world-leading academics to inform the policy conversations that really matter. Our work draws on the skills, expertise and resources of different parts of the College and its wider networks. We support researchers to better engage with policymakers and cross the divide between academia and policy. We support policymakers through bespoke briefings, workshops and events to understand the latest evidence in key areas, supporting evidence-based decision-making.

This response has been developed by:

- Cait Hewitt, Grantham Institute, Imperial College London
- Rosie Allen, Imperial Policy Forum, Imperial College London
- Dr Ajay Gambhir, Visiting Researcher at the Grantham Institute, Imperial College London
- Dr Neil Jennings, Partnership Development Manager, the Grantham Institute, Imperial College London
- Dr Rodrigo Ledesma-Amaro, Professor of Engineering Biology at Imperial College London
- Dr Mirabelle Muûls, Associate Professor in Economics at the Imperial College Business School, a co-Director of the School of Convergence Science – Sustainability, Imperial College London
- Dr Gbemi Oluleye, Associate Professor at the Grantham Institute, the Centre for Environmental Policy, and a member of the Sargent Centre for Process Systems Engineering, Imperial College London
- Dr Nilay Shah, Professor of Process Systems Engineering at the Department of Chemical Engineering, a co-Director of the School of Convergence Science – Sustainability, Imperial College London
- Dr Emily Theokritoff, Research Associate in Climate Damage Attribution at the Grantham Institute, Imperial College London
- Dr Paolo Vineis, Professor of Environmental Epidemiology at Imperial College London

Executive summary

We welcome the Climate Change Committee (CCC)'s recommendations on the 7th carbon budget. Our submission assesses key assumptions, technology choices, and economic implications and finds the CCC's approach to be reasonable and well-evidenced. We consider the 0.2% GDP whole-economy cost estimate to be realistic, with the primary challenge being upfront financing rather than affordability. The transition presents substantial economic opportunities through reduced fossil fuel dependence, new industrial competitiveness in low-carbon sectors, and significant health co-benefits from improved air quality.

We support the CCC's emphasis on electrification of surface transport and buildings and note that the proposed dietary shifts align with existing consumer trends rather than requiring imposed changes. The inclusion of international aviation and shipping emissions in the budget is essential. The transition presents substantial economic opportunities, particularly in sectors where the UK is well-positioned for long-term competitiveness, such as offshore wind and carbon capture technologies.

Given that future decarbonisation increasingly requires active public participation in decisions around diet, travel and heating, effective engagement will be essential to realising the full potential of the transition. The benefits of meeting the 7th carbon budget, including avoided climate damages and significant health improvements from reduced air pollution, substantially exceed the investment costs. Additional support for energy efficiency measures and accelerated deployment of carbon removal technologies could further insure against potential shortfalls whilst maximising co-benefits for fuel poverty, housing quality and energy security.

Introduction

The Climate Change Committee (CCC) is an independent expert body advising the UK government on how to reach the legislated climate target of net zero by 2050 by way of 5 yearly carbon budgets.

So far, all carbon budgets have been met, and UK emissions have halved since 1990. The Climate Change Act and the cross-party political momentum behind it helped to drive early action on the development of some key technologies such as offshore wind energy. UK innovation as well as the emergence of economies of scale have helped to reduce the necessary investment in some of these technologies over time. Much of this change, particularly the rapid decarbonisation of electricity supply, has happened behind the scenes, with little public awareness or engagement.

The role of the public in delivering a net zero UK is now, however, becoming increasingly important, as decarbonisation will include us collectively and individually making choices around travel, food, and home heating. It is therefore a good time for MPs to become more engaged with the decisions relating to carbon budgets and how these are relevant for their constituents. We welcome the role

of this inquiry in facilitating MP engagement with the CCC's recommendations for the 7th carbon budget, and the opportunity to contribute by way of academic expertise on the topics being considered.

1. CCC's assumptions behind budget

1.1 Renewable energy cost assumptions

The UK has already made good progress in transitioning away from fossil fuels and, alongside tackling climate change, there are good reasons to continue with this transition. Electricity prices are impacted particularly heavily by volatile fossil fuel prices in the UK, including compared with other European countries, and the OBR finds that continued dependence on gas could expose the UK to significant costs in the future. Ending our dependence on fossil gas is therefore imperative, with renewables, including wind power, being a crucial technology to support a decarbonised energy system and long-term energy security.

The assumptions made by the CCC in their 7th carbon budget cost projections about the extent to which the costs of renewable energy will fall in future have been called into question. Energy cost predictions are bound to come with some uncertainties and these need to be allowed for the UK's climate strategy. Furthermore, it should be noted that:

- There are currently cost increases across many sectors, resulting from factors including inflationary pressures, alongside supply chain bottlenecks. These apply to new fossil fuel production as well as to the renewables sector in the UK and elsewhere.
- Part of the recent rise in offshore wind prices relates to increases in the cost of capital. As policy uncertainty would exacerbate risk perception to investors and increase costs, it is important for decision-makers to give clear signals to the market to reflect the undeniable importance of renewables investment for the longer term and help to limit the cost of capital going forward.
- Scaling measures such as energy efficiency and flexibility would also ensure energy demand can be met with a smaller power system, helping to limit overall delivery costs.
- Policy measures (such as rebalancing the cost of electricity compared to gas by removing levies and other policy costs from electricity bills, as proposed by the CCC) can help manage costs faced by consumers, especially in the near term, while ensuring effective delivery of a power system that not only supports action against climate change but also promotes energy security and limits consumer exposure to volatile fossil fuel prices.

1.2 Aviation

Emissions from international aviation and shipping have always been assumed to count towards the 2050 target but they were not formally included in carbon budgets until the 6th carbon budget. It

remains necessary for the government to amend the Climate Change Act to ensure the inclusion of these emissions in future carbon budgets. They should, as in CCC's recommendations, be included in the 7th carbon budget to ensure that all sectors of the economy continue to contribute towards delivery of the economy-wide net zero target.

Aviation will, the CCC anticipates, become the joint highest emitting sector in the UK by 2040, together with agriculture, even if significant demand constraint in aviation is delivered by way of policy action. Demand for flights is assumed in CCC's modelling to increase by only 2% between 2025 and 2035, after which it is hoped that new technologies will start to deliver emissions reductions.

We consider this approach to be reasonable and well-evidenced. While alternative fuels and technologies may reach the market in future, at present no low-carbon flights are available to consumers. Ministers have described their hopes that 'Sustainable Aviation Fuels' will prove to be game-changing, but research from Imperial academics has found, in contrast, that the scale-up of SAF is likely to be both slow and expensive due to fundamental resource constraints.

The government has indicated that it does not support a policy of demand management. It will need therefore to show how an alternative trajectory (with higher growth in the aviation sector) can be compatible with the overall level of the 7th carbon budget, while ensuring consistency with the UK delivering net zero emissions by 2050.

2. Technology choices

This section contains contributed amended text from Dr Ajay Gambhir

Surface transport and buildings will contribute around half of the emissions reductions in the 7th carbon budget, primarily through electrification (according to the CCC's Balanced Pathway). Even though the CCC notes that the 1.5 million heat pump installations required by 2035 represents a rate of increase in line with other countries, it is still a daunting target. A resilient strategy to meet the carbon budget should therefore consider ways to achieve even more rapid electrification of surface transport than indicated, given the momentum already being seen with battery electric vehicles, fast tracking the move away from fossil fuel vehicles, including plug in hybrids¹.

In addition, even more support for energy efficiency and behavioural choices could help insure the 7th carbon budget against a shortfall on buildings decarbonisation. This would require a step-change in support for walking, cycling, public transport and plant-based dietary choices, as well as building insulation – in the latter case by highlighting the multiple co-benefits in terms of fuel poverty, protection from heat and cold extremes, and security of supply.

3. Costs, policy choices and economic implications

The CCC's approach to estimating the whole-economy cost of delivering net zero in the UK focuses on an appraisal of the investment required minus any cost savings arising from the required emissions mitigation. Their most recent estimate for this is of a whole-economy cost of 0.2% GDP between 2025 and 2050, significantly lower than in the CCC's previous appraisal. Investments are more weighted towards the earlier part of that period, and savings from more efficient low-carbon technologies are expected to begin to outweigh investment costs during the 7th carbon budget period (2038 to 2042) and continue to grow towards 2050. Other considerations that lie outside the scope of the CCC's whole-economy cost appraisal include the value of co-benefits of climate action (such as reduced air pollution), and the avoided costs of loss and damage, both in the UK and elsewhere in the world.

Our comments below touch on both whether the CCC's estimate of whole economy costs is reasonable, and what other economic considerations are worth bearing in mind in relation to cost of climate action.

3.1 Economics benefits of climate action

This section contains contributed amended text from Professor Nilay Shah, Associate Professor Gbemi Oluleye, and Associate Professor Mirabelle Muûls.

The 7th carbon budget's pathway presents substantial economic opportunities beyond avoided climate damages. The transition outlined will reduce UK dependence on imported fossil fuels, lessening exposure to price volatilities and geopolitical instability whilst providing more predictable electricity costs for all end users. The transition will also deliver reduced primary energy consumption through electrification of transport and heating, where end-use technologies offer far greater efficiency, ultimately resulting in operational cost savings. Alongside this, the transition will deliver significant reductions in air pollution (see 'Health co-benefits of climate action' below), leading to fewer hospital admissions for respiratory disease and improved quality of life.

The transition to net zero is already catalysing significant economic transformation, with global demand for low-carbon goods and services representing a structural shift worth more than \$8 trillion by 2030ⁱⁱ. Rather than imposing costs, this transformation is creating one of the world's fastest-growing economic markets across multiple sectors. The renewable energy market exemplifies this momentum, valued at \$1.39 trillion in 2024 and projected to reach \$3.6 trillion by 2030, whilst electric vehicles and green hydrogen markets show even more dramatic growth trajectories.¹

¹ Market growth projections (compound annual growth rates): renewable energy \$1.39 trillion to \$3.6 trillion (17.2% CAGR); electric vehicles \$500 billion to \$1.89 trillion (13.8% CAGR); green hydrogen \$5.3 billion to \$78 billion (39.8% CAGR). These figures represent annual market values by 2030.

By 2042, cumulative economic gains from increased competitiveness, innovation, and reduced fossil fuel market volatility are expected to far exceed upfront mitigation costs, positioning the UK to benefit substantially from specialisation in low-carbon goods and services. This transition requires significant investment now, but the long-term returns through new industries, stable energy prices and export opportunities will more than pay back these costs, with early movers like the UK capturing the greatest benefits.

3.2 Cost realism and financing challenges

The CCC's estimate of 0.2% of GDP (net) represents a reasonable assessment. The primary challenge lies not in absolute costs but in the transition from an operational expenditure-heavy system reliant on fossil fuels to a capital-intensive system requiring substantial upfront investments in assets, infrastructure and end-use technologies. These investments will deliver significantly lower operational costs over time, making the challenge primarily one of upfront financing rather than affordability. In effect, the UK is switching from paying high running costs forever to making strategic investments that will pay for themselves through operational savings in the future.

3.3 Industrial decarbonisation as an opportunity

The 7th carbon budget demonstrates improvement in its approach to industrial decarbonisation, reflecting more granular sectoral modelling that differentiates feasible mitigation options. The budget pragmatically targets electrification where technically viable, presents carbon capture and storage (CCS) for process emissions that cannot be reduced by other means, and recognises hydrogen's role in sectors that are difficult to electrify. This specificity provides industry with greater confidence in achievable pathways and sequencing.

Crucially, the Budget advice frames industrial decarbonisation as an opportunity to modernise domestic production, rather than promoting deindustrialisation of the UK. Many UK industries currently face competitiveness challenges which are unrelated to climate policy, resulting from long term underinvestment, competition from countries with lower labour costs or production standards, and, more recently, trade tensions; the net zero transition has simply made these more visible.

Well-designed market mechanisms, including the UK Emissions Trading Scheme (ETS), Contracts for Difference, and the Clean Heat Market Mechanism, can attract private investment and drive cost reduction at scale. The recycling of ETS revenues back into industry could help firms manage decarbonisation costs whilst retaining international competitiveness.

Opportunities exist to shift the industrial base toward low-carbon production of current and future products, boosting the value added, and productivity through advanced manufacturing and products that rely more on intellectual property, including non-petrochemical based production of chemicals, for example.

3.4 Industrial strategy focused on long-term competitiveness

Rather than supporting uncompetitive businesses through unprecedented subsidies in response to tariff concerns, focus should shift to effective industrial strategy supporting industries where the UK is well-positioned for long-term competitiveness. Ensuring adequate access to finance is critical, as evidence shows that financial constraints that prevent firms from investing in cleaner technologies can keep emissions 15% higher than they would otherwise be.ⁱⁱⁱ The transition offers opportunities for technology leadership in emerging areas including long-duration energy storage, synthetic fuels and carbon capture, alongside development of new employment opportunities across the supply chain. The early establishment of the 7th carbon budget will provide the long-term certainty needed to underpin this strategic approach, giving both public and private investors the clarity required to commit capital to these emerging sectors.

Analysis from the Grantham Research Institute at LSE^{iv} sets out a case for shifting investment from fossil fuel development in the North Sea towards sectors where the UK can have competitive advantage in a net zero future, including offshore wind, carbon capture, usage and storage (CCUS) and tidal stream energy.

3.5 Electricity costs and strategic infrastructure

Care must be taken during the transition to avoid further fixed levies being borne by consumers. Strategic national infrastructure and assets may need alternative financing mechanisms, particularly important in a renewable and nuclear-based system where resource cost contributions to short-run marginal cost are low. We risk making cheap renewable electricity expensive for households if we continue adding infrastructure costs to energy bills.

3.6 Loss and damage costs

This section contains contributed amended text from Dr Emily Theokritoff

Loss and damage costs from extreme weather events and slow-onset events are already widespread at +1.3°C of global warming and will continue to increase with further warming. The costs of climate change remain hard to quantify accurately whether at global, national or local levels^v. Depending on the method employed, estimates of the global economic impacts from climate change widely vary (between 3% and 60% under RCP8.5 in 2100).

In the UK, many climate risks are heavily moderated by cool temperatures. Nevertheless even in the UK, under current policies², the total cost of climate change loss and damage has been projected to increase significantly, as a result of impacts on: droughts and flooding; agriculture; livestock and fisheries ecosystems; energy supply and demand; health and labour productivity and other effects. Analysis from the Grantham Research Institute at LSE estimates that weighing up the costs and

² SSP3-7.0, 3.2 °C by 2100

benefits of the net zero transition results in a positive net impact on the UK's economy (equal to 4.1% of GDP). Transitioning from a 'current policies' scenario to a 'high mitigation' scenario is found to reduce climate change losses by 1.1% of GDP by 2050 and 5% of GDP by end of century. Combined, these estimates suggest a total benefit to the UK economy from moving to current policies to a high mitigation scenario of 9.1% of GDP by 2100.

Beyond looking at aggregated economic costs, the rapidly developing field of event impact attribution now also allows scientists to calculate how much worse climate change is making the impacts of extreme weather events. For example, by assessing how much climate change has increased the intensity of a specific heatwave and combining this temperature change with epidemiological models, we can now estimate how many additional deaths were caused by climate change during a given heatwave event. A study published by the Grantham Institute at Imperial College London found that, out of the estimated 458 heat-related deaths that occurred in London during the summer 2025, 315 of these can be attributed to anthropogenic climate change (69%)^{vi}.

3.7 Health co-benefits of climate action

Action to tackle climate change can bring a range of benefits that go beyond just reducing greenhouse gas emissions. These include making homes more affordable to heat, improving energy security, improving air quality and health, and reducing inequality.

The CCC undertook a review of co-impacts for the 7th carbon budget and estimated that the co-impacts they were able to quantify would provide £2.4–£8.2 billion per year in net benefit by 2050, largely due to positive health effects, especially to outdoor air quality.

Research at Imperial College London has sought to estimate what additional health benefits would arise from following the CCC's recommended emissions pathway as set out in the sixth carbon budget when compared to a 'business as usual' baseline. The study found^{vii} that following the Balanced Net Zero Pathway resulted in fewer cases of stroke, lung cancer, heart attacks, chronic obstructive pulmonary disease (COPD), and childhood asthma, as well as reduced mortality over the period from now till 2060.

Attributing costs to these impacts showed that at a societal level the 'breakeven time' for some investments, such as heat pumps, could be brought forward significantly. The financial benefits would be likely to be even higher, the researchers found, if it were possible to include measurements for improvements in indoor air pollution (particularly for switching from gas to electric cooking) and for reduced damp and mould in homes resulting from better insulation.

4. Behavioural change

Behaviour change is a key component of delivering the 7th carbon budget and the CCC is right to consider demand reduction in high-carbon activities in its modelling. The Centre for Climate And Social Transformations (cast.ac.uk) provides academic expertise on this topic, including how policymakers can help realise the opportunities for behaviour change to support CO2 reductions.

A recent report from Climate Outreach, based on extensive survey work, found that “almost all of us are worried about climate change”, that “we are a nation of nature lovers” and that “Brits are twice as likely to back an ambitious than a restrained response to climate change, including those who are struggling financially”^{viii}.

In general, policy interventions that target individual decision-making or motivation (such as information provision) have been found to be less effective than those that change conditions to make low-carbon behaviour easy, attractive and normal^{ix}, with strong climate leadership and consistent political messaging also playing important roles.

4.1 Behavioural change and dietary shifts

This section contains contributed amended text from Professor Paolo Vineis and Professor Rodrigo Ledesma Amaro

The Committee's assessment of dietary shifts aligns with observable trends already emerging across UK consumption patterns. Data indicates a declining trajectory in red meat consumption that suggests the projected dietary transitions represent an acceleration of existing consumer choices rather than an imposed transformation.^x

The EAT-Lancet Commission's findings demonstrate that shifts toward more plant-based diets deliver dual benefits through reduced greenhouse gas emissions and improved health outcomes, including lower mortality and reduced incidence of diet-related chronic diseases.^{xi} While current UK red meat consumption exceeds recommended levels, the already-declining trend indicates feasibility of further transition, with both climate and health benefits to be realised.^{xii}

The UK's position as Europe's second-largest funder of alternative proteins, combined with established success stories like Quorn in the microbial foods sector, demonstrates existing market momentum and consumer acceptance.^{xiii} Strategic support for this transition should focus on infrastructure investment and research development, while ensuring farmers can participate as suppliers of products for alternative protein production, creating additional revenue streams rather than displacement. A collaborative regulatory approach connecting entrepreneurs, researchers and producers would accelerate sector development while maintaining food security.

Overall, the dietary changes outlined in the recommended carbon budget reflect shifts that consumers are already making voluntarily and point to the role of policy in supporting and enabling these choices rather than mandating them.

5. Public engagement

As noted in the introduction to this submission, much of the successful decarbonisation to date since the launch of the Climate Change Act has taken place behind the scenes in terms of electricity supply. While public engagement may have felt less of a priority at that time, future emissions reductions will require public backing (for new electricity network infrastructure for example) and, increasingly, public participation (in changing how we eat, travel and heat our homes).

The CCC itself convened a citizens' panel to test out some of the proposals in the 7th carbon budget advice. In general, participants were found to be on board with the key choices households would need to make in order to deliver the budget and wanted the government to develop policies to ensure that these choices were accessible and affordable for all households.

The government has committed^{xiv} to producing a Public Participation Strategy this year. We look forward to reading this important publication.

5.1 Public engagement on health co-benefits

This section contains contributed amended text from Dr Neil Jennings

The Grantham Institute has undertaken research into public engagement around the co-benefits of climate action^{xv}. We found that the UK public perceive these co-benefits to be important because they touch on other key issues affecting people's day-to-day lives, such as the cost-of-living crisis, health and housing, that directly link with reducing inequalities. They also provide opportunities for short-term, local benefits from actions that help to address the long-term, global challenge posed by climate change. As such, the Government should communicate the multiple and varied co-benefits that climate action can bring when engaging with citizens on the topic of climate change.

Please cite as:

Hewitt, C., & Allen, R. (2026). The Seventh Carbon Budget inquiry. Grantham Institute and Imperial Policy Forum evidence submission.

DOI: <https://doi.org/10.25560/130882>

This work is licensed under a Creative Commons Attribution-Non Commercial-No Derivatives 4.0 International License.



6. References

- ⁱ Transport & Environment. Smoke screen: the growing PHEV emissions scandal. 2025. Available at: <https://www.transportenvironment.org/articles/smoke-screen-the-growing-ph-ev-emissions-scandal>
- ⁱⁱ This figure is based on unpublished analysis. The primary references for the sectors are:
Grand View Research. Renewable energy market summary. 2025. Available from: <https://www.grandviewresearch.com/industry-analysis/renewable-energy-market>
International Energy Agency. Renewables 2024: analysis and forecast to 2030. 2024.
Fortune Business Insights. Electric vehicle market. 2025. Available from: <https://www.fortunebusinessinsights.com/industry-reports/electric-vehicle-market-101678>
Introspective Market Research. Green hydrogen market - industry growth and trend analysis. Introspective Market Research. 2024. Available from: <https://introspectivemarketresearch.com/reports/green-hydrogen-market/>
- ⁱⁱⁱ R De Haas. Et al. Managerial and Financial Barriers to the Net-Zero Transition. 2022. CEP discussion paper. Available at: https://cep.lse.ac.uk/_new/our-work/topics/industrial-strategy/
- ^{iv} D Zenghelis. Et al. Boosting growth and productivity in the United Kingdom through investments in the sustainable economy. 2024. Policy report from LSE Grantham Research Institute. Available at: <https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2024/01/Boosting-growth-and-productivity-in-the-UK-through-investments-in-the-sustainable-economy.pdf>
- ^v Morris J. Et al. Reconciling widely varying estimates of the global economic impacts from climate change. Nature Climate Change. 2025. 15:124-7.
- ^{vi} C Barnes. Et al. Summer heat deaths in 854 European cities more than tripled due to climate change. 2025. Policy report from the Grantham Institute. Available at: <https://www.imperial.ac.uk/grantham/publications/all-publications/summer-heat-deaths-in-854-european-cities-more-than-tripled-due-to-climate-change.php>
- ^{vii} S Beevers. Et al. Climate change policies reduce air pollution and increase physical activity: Benefits, costs, inequalities, and indoor exposures. 2025. Background briefing from Grantham Institute. Available at: <https://www.sciencedirect.com/science/article/pii/S0160412024007505?via%3Dihub>
- ^{viii} Climate Outreach. Britain talks climate and nature. 2025. Available at: <https://climateoutreach.org/btc/2025/report/#what-is-btc>
- ^{ix} C Verfurth. Et al. A people-centred approach is needed to meet net zero goals. 2023. Available at: https://www.thebritishacademy.ac.uk/documents/5297/JBA-11s4-05-Verfurth_et_al_.pdf
- ^x C Stewart. Et al. Trends in UK meat consumption: analysis of data from years 1–11 (2008–09 to 2018–19) of the National Diet and Nutrition Survey rolling programme. 2021. Available at: [https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196\(21\)00228-X/fulltext](https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(21)00228-X/fulltext)
- ^{xi} W Willett. Et al. Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. The Lancet Commissions. 2019. Available at: [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(18\)31788-4/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(18)31788-4/fulltext)
- ^{xii} C Stewart et al. Trends in UK meat consumption: analysis of data from years 1–11 (2008–09 to 2018–19) of the National Diet and Nutrition Survey rolling programme. 2021. Available at: [https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196\(21\)00228-X/fulltext](https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(21)00228-X/fulltext)
- ^{xiii} Corujo Simon, E. Et al. Microbial Foods as a sustainable, healthy and resilient source of nutrients. 2025. Briefing paper from the Institute for Molecular Science and Engineering. Available at: <https://www.imperial.ac.uk/molecular-science-engineering/publications-and-outputs/briefing-papers/microbial-food-as-a-sustainable-healthy-and-resilient-source-of-nutrients-for-the-uk/>
- ^{xiv} Department for Energy Security and Net Zero. Accelerating to net zero: responding to the CCC Progress Report and delivering the Clean Energy Superpower Mission. 2024. <https://assets.publishing.service.gov.uk/media/67619987d20fc50099e1902f/committee-on-climate-change-2024-government-response.pdf>
- ^{xv} Jennings, N. and Paterson, P. How do UK citizens perceive the co-benefits of climate action? 2023. Grantham Institute and PCAN Report. DOI: <https://doi.org/10.25561/106595>