



Net zero
policy tracker
September 2021
update

Still off track but policies in the pipeline can help

The UK has a strong track record of climate ambition. Not only was it the first major economy to set a legally binding 2050 net zero target, but it was also one of the first countries to commit to phase out coal powered energy. In November 2021, the country will look to cement its position as a global leader on climate change by hosting the UN climate summit in Glasgow.

Strong policies must now translate climate ambitions into measurable results over the next decade. Green Alliance is monitoring the progress of new UK national policy, announced since the start of 2020 (the start of the current parliamentary term), towards meeting the UK's climate change targets ahead of the Glasgow climate summit at the end of 2021.

Our calculations show the UK is a long way off track to meet its 2050 net zero carbon target. Policies in place at the start of this government left an emissions gap of 985 MtCO₂e over the fifth carbon budget period (2028-32). Policies and spending announced since will only reduce emissions by 24 per cent, still leaving a significant gap of 746 MtCO₂e.

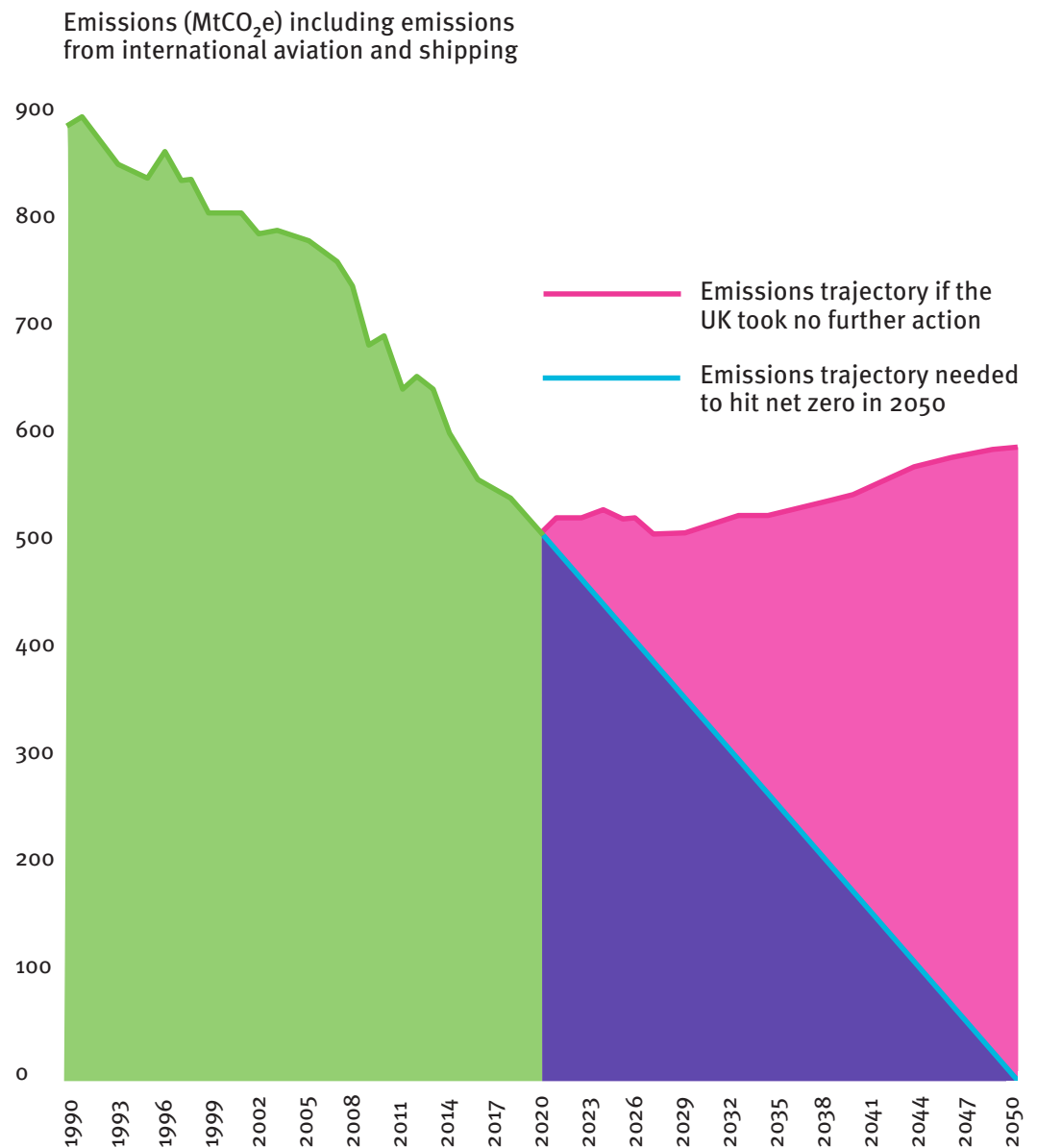
There is a silver lining. If the UK government committed to the housing and transport policies that are out for consultation, the country would be over a third of the way to closing its emissions gap in the fifth carbon budget period.

Further emissions savings could be achieved through the five priority net zero policies we set out in this report, and through an ambitious comprehensive spending review in autumn 2021.

With fewer than 50 days to go until the UK stands up on the global stage at the Glasgow climate summit, fast tracking policy implementation and publishing promised decarbonisation strategies, like the heat and buildings strategy and the net zero strategy, should be the government's immediate focus.

Decisive action now will not only be cheaper than the high economic costs of climate and ecological breakdown but will also help to protect those on the lowest incomes from adverse impacts. Rapid decarbonisation will have other, tangible benefits for society, such as improved health and wellbeing, and job creation in new emerging industries. Ensuring the costs and benefits of this transition are fairly distributed will require much stronger leadership by both the prime minister and chancellor.

What will happen to UK emissions? Business as usual vs ambitious net zero action¹



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Progress summary

Emissions reductions since the start of 2020

Since 1990, the UK has reduced its CO₂ emissions by 41 per cent, including international aviation and shipping.² The UK now has a legal target of net zero emissions by 2050, which requires a rapid reduction from current levels. In 2019, the UK generated emissions of 522 MtCO₂e.

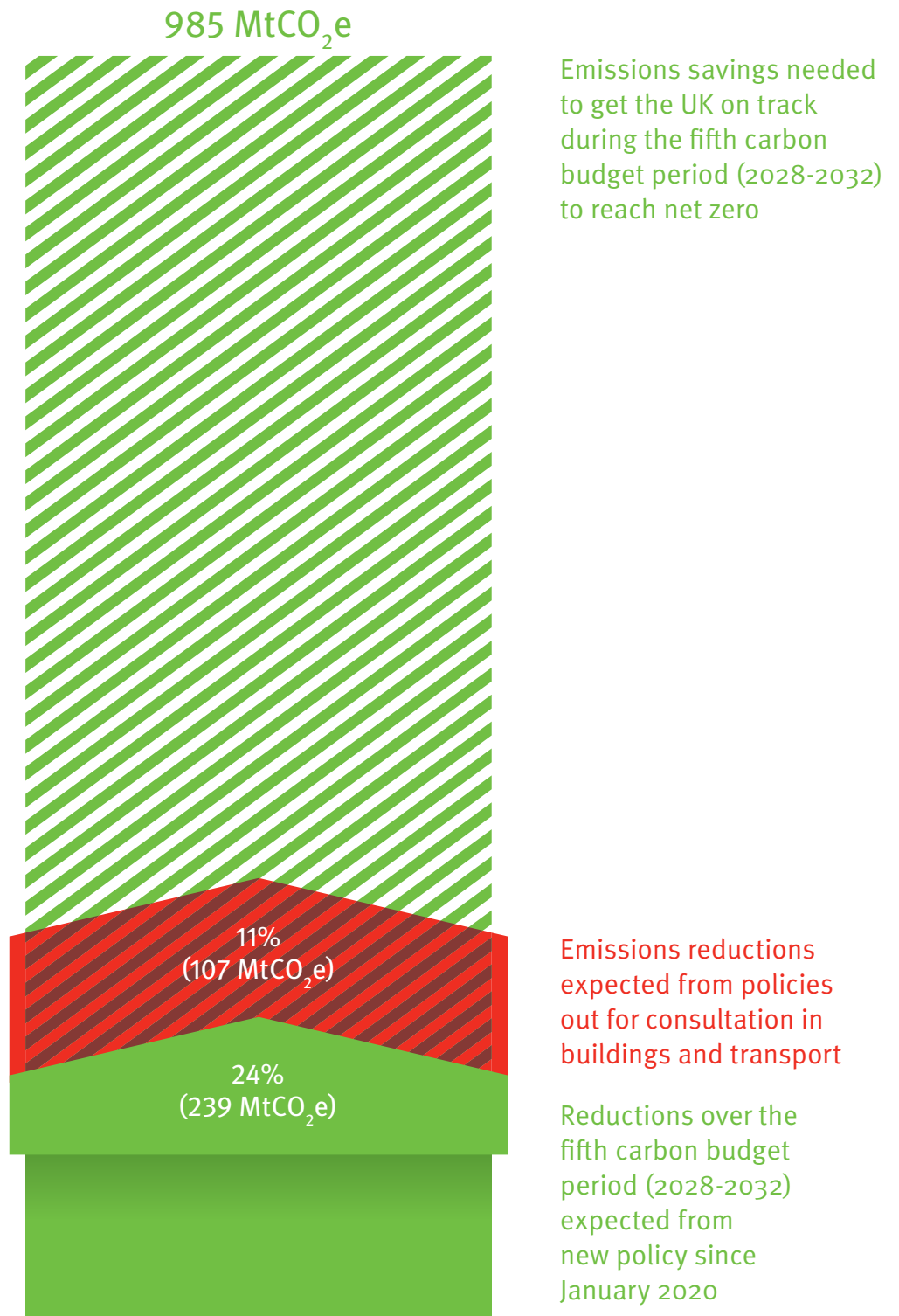
A good test of progress against the UK's 2050 net zero target is the fifth carbon budget, one of the UK government's national carbon budgets setting the trajectory for reducing emissions over five year periods from 2008 to 2050. The fifth carbon budget period is 2028 to 2032. Actions required to put emissions on track for net zero over this period were recommended by the government's adviser, the Climate Change Committee (CCC) in its recent report.³

All the UK climate policies in place at the start of 2020, when we began this tracker, left the UK a very long way from what was needed to meet legal emissions reduction targets. Emissions at the start of 2020 were projected to be in excess of 985 MtCO₂e beyond the level the CC recommends is needed for the UK to be on track to reach net zero by 2050.⁴

We calculate that government announcements over the past 21 months have made some progress but have only helped to close 239 MtCO₂e, or 24 per cent, of that projected 2028-32 gap. This calculation factors in emissions from international aviation and shipping, which the CCC recommends should be formally included in legal carbon budgets.

However, the picture changes if policies now out for consultation in the buildings and transport sectors are taken into account (see our methodology and assumptions on page 25). We calculate these could cut a further 107 MtCO₂e, which would bring total emissions savings to 35 per cent of the projected 2028-32 gap. Whilst these policies are strongly welcomed, and even if they were implemented, progress at this stage is still well short of where it needs to be.

Shortfall in greenhouse gas emissions reductions



Progress summary

Net zero spending

There are increasing concerns from some MPs and parts of the Treasury over the cost of net zero. Delays to the release of the Treasury's Net Zero Review, which will set out the department's approach to the question of funding and costs, are indicative of this challenge.

According to the Office for Budget Responsibility, in an 'early action' scenario the cost of the net zero transition between 2020 and 2050 could be as little as 0.4 per cent of GDP annually. These costs increase significantly in scenarios where climate action is delayed or abandoned.⁵

Sustainable ways of funding the transition could also be valuable win-win-win solutions for the top issues on the government's agenda: net zero, levelling-up and Covid recovery.

Vital to success are the accompanying policies that will build markets, priming sectors for the private finance that will carry the bulk of the net zero cost. Capital investment from the Treasury should come on the promise of reform from departments, through regulation, taxation, incentives to innovate and changes to governance that will ensure value for money to the exchequer.

Since January 2020, the government has pledged new funding of £37.8 billion for climate (£31.6 billion) and nature (£6.2 billion) over the course of this parliament, including funding for hydrogen development, carbon capture and storage, active travel, greener buildings and natural environmental restoration projects.

Taking existing spending into account, we estimate that an additional £66.1 billion is needed over the three year period of the comprehensive spending review (ie £22 billion a year) to tackle the climate and nature crises.

This should include:

- £7.7 billion a year on low carbon transport including investment in upgrading railways and trams, increasing active travel levels, and improving electric vehicle charging infrastructure.
- £4 billion a year to improve the energy efficiency of all homes, particularly low income households, and to roll out heat pumps.
- £133 million a year for a circular economy starter fund, to stimulate innovation in resource efficiency.
- £5.6 billion a year for habitat creation and restoration, nature-based solutions, improving access to nature, and for advice, enforcement and capacity building.

Shortfall in spending to reach the net zero target



Additional amount needed to tackle the climate and nature crisis over the three year period of the next comprehensive spending review

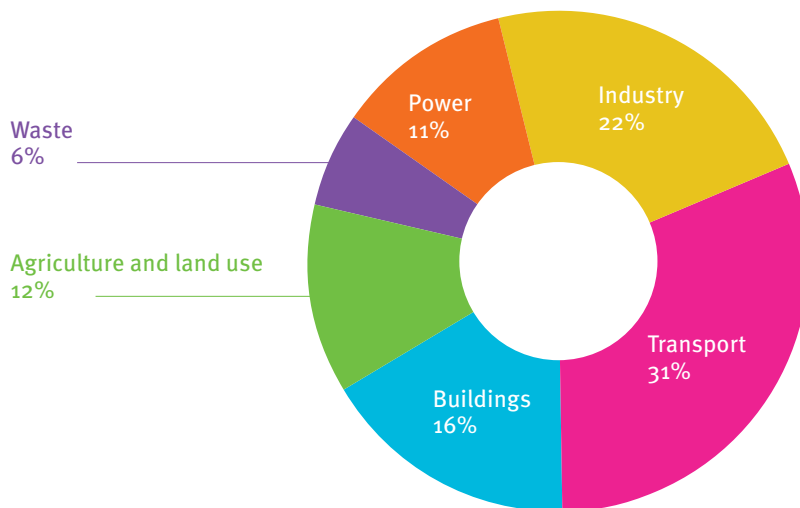
Spending on climate and nature announced by the government since the start of 2020 over the course of this parliament

Progress summary

Emissions reductions from different sectors⁶

Not all UK sectors have decarbonised at the same rate. Before the pandemic, in 2019, emissions in the power sector had decreased by 72 per cent since 1990, largely due to coal being phased out for electricity generation and replaced by renewable and other low carbon energy sources.⁷

CO₂e emissions by sector in the UK, 2019



Emissions from industry have fallen 53 per cent since 1990 due to increases in efficiency and the reduction of heavy industry. Meanwhile, emissions from waste have also decreased 69 per cent since 1990 as there is less biodegradable waste being sent to landfill.⁸

However, emissions from transport, housing and agriculture have barely come down over the past decade. Surface transport emissions are at the same level as in 1990 and are now the biggest source of emissions in the UK. Emissions from buildings have only fallen by ten per cent in the past decade and are higher now than in 2015. Emissions from agriculture have also remained flat since 2008.⁹

Compared to the CCC's modelling of the reductions needed for each sector's emissions over the fifth carbon budget period, progress in most sectors since the start of 2020 is well short of where it should be.

New decarbonisation policies, announced since the beginning of 2020, will have a mixed impact on the emissions of different sectors. Unless further policies are announced, however, no sector will cut its emissions sufficiently to be on track to net zero during the fifth carbon budget period.

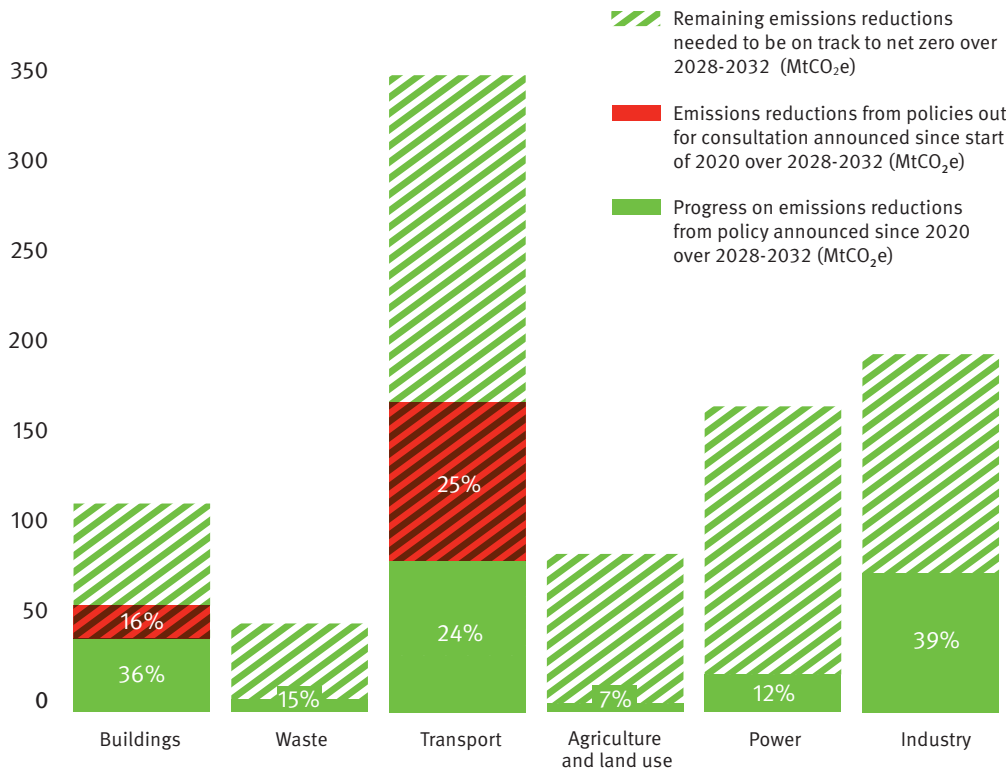
Policy to scale up capacity for low carbon hydrogen and carbon capture and storage (CCS) since January 2020 will help to significantly reduce emissions. In this report, we have accounted for the impact of these on industrial emissions, contributing to nearly 40 per cent of the emissions savings needed in this sector.

The buildings sector has also made headway, with policies focused on upgrading the energy efficiency of low income and fuel vulnerable households. These policies will help to make over a third of the emissions savings needed. If policies currently out for consultation are included, emissions savings would rise to over half those needed by 2028-32.

On transport, UK government policies announced so far would only yield about a quarter of the emission reductions needed. However, if policies out for consultation are included, particularly those on introducing a zero emission vehicle mandate and phasing out fossil fuel HGVs, emissions savings from this sector would rise to nearly 50 per cent.

In contrast, emissions reductions progress since the start of 2020 in the waste, agriculture and land use, and power sectors are all still well below where they need to be, due to a lack of policy.

Impact on emissions projections in 2028-32 from new policies by sector since the start of 2020¹⁰



Five priority net zero policies for 2021

1.

Robust homes decarbonisation strategy, with long term regulation and incentives

Challenge: Almost all the UK's 29 million homes need to be retrofitted for energy efficiency and low carbon heat if the country is to meet climate targets by 2050. This requires a radical new approach.

Policy solutions: The government should put in place a strategy to upgrade England's inefficient homes over the next decade. This should include: regulation on minimum energy efficiency standards to ensure all homes are rated EPC band C or above by 2030 at the point of sale; phasing out gas boilers and improving the attractiveness of clean heat options by extending the Clean Heat Grant and through financial mechanisms, like reducing levies on electricity bills; and bringing VAT on renovation and low carbon installations in line with the zero rate for VAT on new build.¹¹

Co-benefits: A long term home decarbonisation programme, supported by additional spending of £7.8 billion over this parliamentary term, could support 190,000 skilled and semi-skilled jobs in energy efficiency and heat in every part of the country to 2030, reduce UK household energy expenditure by £7.5 billion a year, alleviate pressure on the NHS by preventing excess winter deaths and reduce inequality within and between regions.¹²

2.

An ambitious target to halve resource consumption by 2050

Challenge: Resource extraction and processing causes half of all global greenhouse gas emissions.¹³ Resource efficiency is an almost untapped area of climate policy: estimates suggest it could result in savings three or four times greater than those envisaged by the government for energy efficiency by 2050.¹⁴

Policy solutions: The government should set an economy wide target to reduce resource use by 50 per cent by 2050, with separate targets for high impact sectors and strategic materials. Binding interim targets are needed to ensure progress.

Co-benefits: Better resource use is also critical to levelling up the regions of the UK: it could add £10 billion a year to the bottom line of UK manufacturing firms, which represent a fifth of the economy in areas of high unemployment.¹⁵ A transformational shift to a circular economy has the potential to create 450,000 gross jobs across the UK by 2035.¹⁶

3. Implement transport decarbonisation plans

Challenge: The publication of the transport decarbonisation plan was a significant step forward, with positive messages around the need for active transport and a consultation launched on the introduction of a zero emissions vehicle (ZEV) mandate, which Green Alliance has called for since 2018.^{17,18} It also set phase out dates for petrol and diesel lorries, pending consultation, promised a review of planning policy for major roads and put more demands on local authorities to consider climate change in their transport plans. However, there was no new funding to underpin these proposals, many of which will take months or years to implement. Proposals to decarbonise emissions from aviation focus almost exclusively on technological solutions and the plan set no clear interim targets for the transport sector against which progress can be tracked.

Policy solutions: To maintain momentum, policies currently out for consultation must be fast tracked so that they are implemented as soon as possible. The comprehensive spending review is an opportunity to significantly increase spending on public transport, walking and cycling and the net zero strategy should provide clear milestones for different sectors, as well as commit to more ambitious policy to limit growth in air travel.

Co-benefits: The CCC calculates that electrifying transport can deliver annual operating cost savings of over £30 billion by 2050.¹⁹ Sustainable transport can also improve air quality which currently leads to around 36,000 early deaths per year in the UK.²⁰

4

Increased ambition in the Environmental Land Management scheme and Defra to reduce carbon emissions

Challenge: Whilst the Department for Environment, Food and Rural Affairs (Defra) has made several positive announcements since April on nature, including amending the Environment Bill to include a new legally binding species abundance target for 2030 and extending the biodiversity net gain principle to nationally significant infrastructure projects, it has done little to reduce carbon emissions in England through the natural environment. Worse, a leaked memo recently revealed that Defra does not have an emissions reductions plan to meet climate targets.²¹

Policy solutions: The Environmental Land Management (ELM) scheme could be a vehicle to support farm businesses in adopting sustainable land management practices which sequester carbon. The Sustainable Farming Incentive (SFI) component should be developed to align more strongly with the core principles of ‘public money for public goods’, and the more environmentally ambitious Local Nature Recovery and Landscape Recovery components of the scheme should be prioritised to ensure they are available on the same timescale as the SFI. To support this, in line with the National Food Strategy’s recommendations, the government should ringfence £500 million to £700 million of agriculture spending for land uses that principally focus on nature restoration and carbon removal. Beyond ELM, Defra should work with farmers to produce a robust carbon emissions reductions plan through to 2050.

Co-benefits: Investment in natural restoration can create jobs across the UK, especially in constituencies with higher than average labour market challenges. WPI Economics’ research for Green Alliance has demonstrated that improving woodland, peatland and urban parks could create 16,050 jobs across the 20 per cent of British constituencies experiencing the most severe employment challenges. Coastal constituencies, which have higher proportions of people on furlough and poorer employment prospects, also have potential to restore seagrass, an underwater flowering plant that absorbs carbon 35 times faster than tropical rainforests. Seagrass restoration can create jobs directly and indirectly, through improved habitats which benefit fishing and local tourism.²²

5

Decarbonise the electricity grid by 2035, with new ambitions to increase renewable capacity

Challenge: The UK has already shown bold leadership in the power sector through the highly successful phase out of coal generation, which will be completely removed from the electricity grid by 2024, and the parallel increase in renewable generation. The main source of emissions in the power sector is now unabated natural gas.

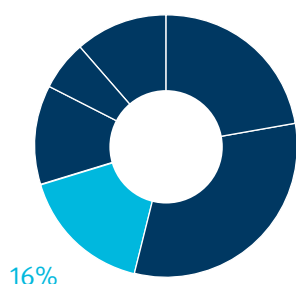
Policy solutions: The government can continue its enormous success at reducing emissions from the power sector whilst simultaneously driving demand for new low carbon industries like CCS, with a commitment to decarbonise the grid by 2035. This should be complimented by guarantees around security of supply, the rapid adoption of policies to support flexibility and storage, and new ambitions around onshore wind and solar deployment in England to ensure that the pathway to decarbonisation focuses on renewable technologies.²³

Co-benefits: Like the US, which has recently committed to clean power by 2035, the UK can showcase international leadership on climate change by committing to a decarbonised power sector and working with other countries to achieve this goal.²⁴ Power sector decarbonisation can also create jobs. A study by Onward, for example, found that the UK's transition to low carbon and renewable energy sources could create at least 900,000 jobs related to energy efficiency and low carbon heating by 2030, with many of these created in the north, the Midlands and Scotland.²⁵

Decarbonisation progress by sector since April 2020

Buildings

Buildings account for 16 per cent of UK carbon emissions.



★
Priority for 2021
Put in place long term regulation and funding for a robust homes decarbonisation programme

Positive

The government has launched the Sustainable Warmth competition, along with an additional £200 million to bring the funding pot total to £350 million. This competition will award funding to local authorities to provide low income households in England with energy efficiency installations and low carbon heating. This competition acknowledges the important role of local councils in decarbonising buildings and the success of the Green Homes Grant Local Authority Delivery scheme.

The government has launched a consultation on reforming the Warm Home Discount Scheme which requires energy suppliers to provide rebates to customers and reduce energy bills for fuel vulnerable and low income households. The aim of the reform is to ensure that more fuel vulnerable households can automatically receive rebates.

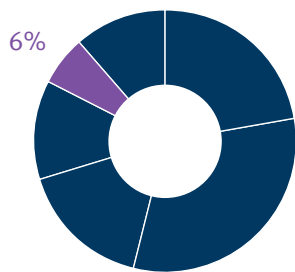
The government has consulted on introducing a performance-based policy framework in large commercial and industrial buildings. Under such proposals, these types of buildings would be rated annually based on their actual energy consumption and carbon emissions, rather than their Energy Performance Certificate (EPC) score. This is a very welcome step and could help to improve the energy efficiency of a broader range of buildings in the future, as has been proven, for instance, by the National Australian Built Environment Rating.

Negative

The heat and buildings strategy has been delayed since the start of 2021. An ambitious home decarbonisation strategy is urgently needed to set the buildings sector on the right pathway to net zero emissions, in a way which fairly distributes the costs and benefits across society. A priority must be to improve the energy efficiency of homes with better insulation, combined with extended subsidies for clean heat technologies through the Clean Heat Grant. At the same time, the government should regulate to raise minimum energy efficiency standards and phase out gas boilers.

Waste

Emissions from waste (including from landfill, incineration, anaerobic digestion, wastewater treatment and composting) comprise six per cent of the UK's total emissions.



★
Priority for 2021
Set an ambitious resource reduction target to halve overall resource consumption by 2050

Positive

The sale of halogen light bulbs will be banned from September with plans to phase out the sale of fluorescent light bulbs by 2023. According to the government, this ban will make 1.26 million tonnes of CO₂ savings, reduce household energy bills by £75 a year on average, and reduce waste as LED lightbulbs last five times longer than halogen lightbulbs.

The UK government has followed the EU in introducing ecodesign requirements. This will improve repairability through product design. However, it has been described by the government as a 'right to repair', which is not accurate. The scope of the legislation is limited to a few product categories, it fails to cap the prices that manufacturers can charge for spare parts and it does not fully extend the right to repair to product owners and community repair initiatives. More needs to be done to build on this positive move to achieve waste reduction goals.

The government has increased the plastic bag charge to 10p and extended it to all businesses in England. The government estimates this decision will decrease the use of single use carrier bags in SMEs by 70 to 80 per cent, although it fails to address bags made from other materials.²⁶ 'Bags for life', which use substantially more plastic and cost as little as 20p, are also being purchased repeatedly by customers as replacements for single use carrier bags: more than 1.58 billion were issued in 2019, which averages almost 57 bags per UK household during the year.²⁷

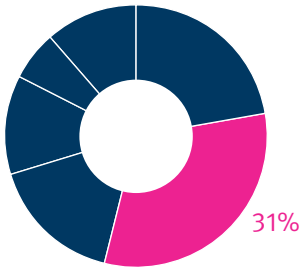
Negative

The Environment Bill has not been passed into law. With the Glasgow climate summit due to be held in November, parliament has yet to pass its flagship post-Brexit environmental legislation into law. This bill is the main vehicle that will give the government the power to implement waste reduction policies, but it still does not have sufficient provisions to achieve concerted progress towards the government's own aim for a circular economy or to address the shortcomings in its approach to waste prevention.

The draft waste prevention plan, consulted on recently, does not rise to the challenge of the urgent need for change. Despite identifying areas with great potential to reduce waste and building a strong narrative on the reasons why waste prevention should be a priority, there was little by way of new policy development or funding and a continuing reliance on unreliable voluntary agreements. The government's former waste prevention plan in fact prevented less than 0.01 per cent of waste in England. It is not clear that the new plan will be much more effective.

Transport

Transport is the largest emitting sector in the UK, accounting for 31 per cent of UK emissions, including international aviation and shipping.



Priority for 2021
Put the UK transport sector on track for net zero by implementing the transport decarbonisation plan

Positive

The long awaited transport decarbonisation plan has been published.

The announcement of several consultations (see below) is welcome, as is the commitment to monitor and report against the plan every five years. Clear interim targets are now needed to track progress against the plan.

A consultation on phasing out the sale of new non-zero emission HGVs in underway. The government is consulting on ending the sale of non-zero emission lighter HGVs from 2035 and heavier HGVs from 2040. This policy would be genuinely world leading and, together with policy to deliver on the phase out date, would be a significant contribution to meeting climate targets, as emissions from trucks are around four per cent of the UK's total greenhouse gas emissions.²⁸

A consultation on introducing a zero emissions vehicle (ZEV) mandate is underway. The government proposal for a ZEV mandate, outlined in its green paper on the UK's new regulatory framework for road vehicle emissions, would require manufacturers to sell a specific, increasing proportion of ZEVs. It would ensure rapid uptake of EVs before the 2030 phase out date for petrol and diesel cars and help to drive down upfront costs, making them more affordable for more people.

The government has proposed changes to the Highway Code, such as placing pedestrians and cyclists at the top of the new 'road user hierarchy', to encourage a greater number of people to take up cycling and walking.

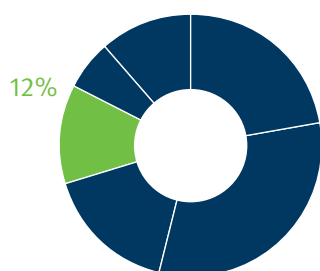
Negative

There have been no new policies to reduce demand for road and plane journeys. More is needed to reduce emissions from aviation, which caused around ten per cent of the UK's greenhouse gas emissions prior to the pandemic and which are projected to grow in the coming decades.^{29,30} It has been reported that the government's planned cut to domestic air passenger duty will also apply to high emitting private jets.³¹

The national policy statement for major road schemes will be reviewed because of pandemic-induced changes to travel patterns. While this review is necessary, it is concerning that the government has not issued a moratorium on road building until the review is complete. Even with the review, it is possible that the government still could go ahead with its controversial road building programme.

Agriculture and land use

Emissions from agriculture account for 12 per cent of UK carbon emissions.



★
Priority for 2021
Increase the ambition of the Environmental Land Management scheme and Defra to reduce carbon emissions

Positive

Defra has published details on the pilots for the Sustainable Farming Incentive, one of the three components of the Environmental Land Management (ELM) scheme. To date, 2,000 farmers have submitted expressions of interests in the pilots and have been invited to take part. The next step will open up parts of the pilot scheme to all farmers in 2022, before full roll-out in 2024.

The England Trees Action Plan (ETAP) was published. Included in this plan is the commitment to consult on the protections of “long established woodlands” in the planning system, as well as £500 million to increase tree planting rates across the UK to 30,000 hectares per year by the end of this parliament. The ETAP now needs to provide long term timescale and funding commitments.

The England Peat Action Plan (EPAP) was published. This plan includes a commitment to end the use for peat in the amateur horticultural sector, with a consultation on banning the sale of peat and peat containing products in the amateur sector, promised by the end of this parliament. The plan also expresses a commitment to phase out managed burning of peatlands. It now needs to set a firm date to ban this damaging practice.

The government has recommitted to providing the new Office for Environmental Protection (OEP) with a five year indicative budget. The long term funding security of the OEP is of crucial importance as delivery of ambitious targets and policies will depend on effective oversight and scrutiny.

Negative

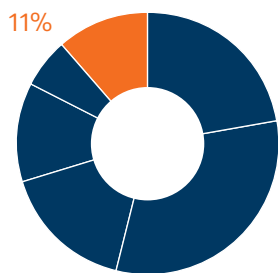
There is a lack of detail on the Local Nature Recovery and Landscape Recovery components of the Environmental Land Management scheme. These funding streams are expected to play a larger role in encouraging actions to sequester carbon than the Sustainable Farming Incentive, but they are being made available to farmers at a slower pace.

Defra has not yet agreed a plan to meet its departmental carbon emissions target, according to a leaked memo. Defra has a critical role to play in helping the government reach net zero by 2050 and, as a result, must introduce a robust emissions reductions plan as a matter of urgency.

New environmental governance architecture being established through the Environment Bill lacks critical futureproofing elements. These include greater independence for the OEP, a stronger enforcement and target setting framework, and applying environmental principles to all government policy making.

Power

Emissions from the power sector represent 11 per cent of UK carbon emissions



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Priority for 2021
Introduce legislation to phase out unabated natural gas for power by 2035, alongside new ambitious targets for increasing renewable capacity.

Positive

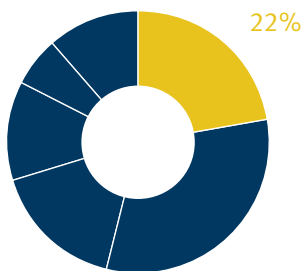
Following a consultation, the date to end coal generated electricity has been moved forward by a year to October 2024. This move will strengthen the UK's global leadership position on coal, although its scope is limited in that it only relates to unabated coal-fired electricity generation. The UK is lagging behind EU countries in trialling coal-free steelmaking techniques and has not ruled out metallurgical coal mining in Cumbria.

The government has published updates on the proposed business models for carbon capture and storage (CCS). These set out the support that will be available for CCS use in power, transport and storage, and industrial carbon capture, with the intention of kickstarting private investment. The next step for the government will be to scrutinise the business models rigorously to ensure they are good value for money, decide how they will be funded and what the overall spending budget will be.

The government and Ofgem have jointly published the smart systems and flexibility plan 2021 replacing an increasingly outdated 2016 version. The plan should allow the UK to make better use of its energy resources and is accompanied by consultations designed to overcome barriers to the use of vehicles for electricity storage and deployment of large scale, long term storage technologies. Ofgem and the government are also consulting on the creation of a new energy system operator that is better able to deliver net zero transition, and Ofgem is seeking views on plans to facilitate new connections to the grid for the electrification of heat and transport, however these plans could place extra charges on small, distributed generators.

Industry

Emissions from industry account for 22 per cent of UK carbon emissions



Positive

The government has published detailed guidance on the UK Emissions Trading Scheme and launched its first auction in May.

The government has set aside some of its pre-existing £1 billion Net Zero Innovation Portfolio funding to support dispersed industrial sites outside major industrial clusters, which are likely to find it harder to decarbonise. The Industry of Future Programme (IFP) will initially help up to 40 sites develop industrial decarbonisation scoping studies, with further funds then available to the sites in the future.

Negative

The hydrogen strategy has pushed decisions to later in the 2020s.

While it is positive that the strategy acknowledges the role of hydrogen in decarbonising sectors, such as steel, shipping and aviation, near term policy to support its targeted adoption is limited. In particular, the strategy fails to kickstart a pilot to trial hydrogen-based steelmaking and there is no new funding to support industry adoption. The strategy also does not outline the circumstances where hydrogen is likely to be suitable for heat decarbonisation, with the risk that it will delay investment in readily available alternatives like heat pumps. Furthermore, the strategy risks locking in ‘blue hydrogen’ by not laying out a clear roadmap to ensure the UK is only using zero emission, ‘green hydrogen’ by 2050.

The innovation strategy takes a limited approach to climate innovation.

While it rightly highlights the importance of taking portfolio ‘bets’ and identifies energy and environment as one of the seven technology families, the strategy fails to identify net zero as a major driver of economic transformation over the coming decades, instead seeing it as a set of clearly defined technology challenges. Furthermore, while it rightly emphasises the importance of public procurement in driving innovation, it is unclear how it will significantly scale up markets for new climate solutions. Finally, the failure to remove innovation support from fossil fuel extraction is a major missed opportunity.

The government is considering approving a new North Sea oilfield, despite the fact that the International Energy Agency has warned against developing new oil and gas fields. It is estimated that the impact of the Cambo oilfield, which would operate until 2050, would be equivalent to operating 16 coal-fired power stations for a year.³²

Methodology and assumptions

This policy tracker only measures national UK level policies, not policies announced by the devolved administrations. Almost all the spending and policy proposals relate to England only (except for a small proportion of rail investment), reflecting the devolution of many important policy areas, relevant to decarbonisation, to the Welsh, Scottish and Northern Irish administrations.

Emissions calculations

The baseline for emissions projections over the fifth carbon budget comes from the latest CCC's baseline projections.³³ For this, we use the total greenhouse gas projections rather than net carbon account emissions projections. We report a figure that includes international aviation and shipping, updated peatland emissions and values for methane intensity, as outlined in the CCC's recent sixth carbon budget advice.³⁴

Estimated emissions reductions from policy come from several sources. These include government impact assessments associated with policies which are publicly available online and from Green Alliance's own analysis, for example, our work on the emissions savings from a 2030 phase out of the sale of new petrol and diesel cars.³⁵ All of these estimate the carbon emissions reductions from policies over the fifth carbon budget period (2028-32).

Investment calculations

Investments made by the government since January 2020 in climate and nature solutions are averaged over the next four years, until the end of this parliament in 2024-25. For example, even though plug-in grants for electric vehicles are only allocated to 2023, we have averaged spending to 2025 to give a figure for electric vehicle grants over the course of this parliament.

We, and a group of other NGOs, have developed a list of priority asks for investment in climate and nature.³⁶ This list has been updated ahead of the 2021 comprehensive spending review to give total spending needed for the rest of the parliament.

Current government spending outlined includes all green spending, and not just spending on our priority policies. We used Wildlife and Countryside Link's priorities for nature restoration in the UK, made ahead of the 2021 spending review, to calculate expenditure on England's nature. Spending needs are given per year until the end of this parliament.

Consultations

Emissions reductions from policies out for consultation are included in this update where it is possible to estimate them from publicly available consultation documents or Green Alliance's own analysis. Actual emissions reductions achieved will depend on the detail of final policies.

For the transport sector, four consultations announced in the transport decarbonisation plan are included:

1. Phase out of all new non-zero emissions heavy goods vehicles (HGVs) by 2040³⁷
2. Zero emissions vehicle (ZEV) mandate
3. New road vehicle CO₂ emissions regulatory framework³⁸
4. Sustainable aviation fuel (SAF) mandate³⁹
5. Net zero domestic aviation by 2040⁴⁰

It is not possible to estimate emissions reductions from the proposed phase out of new non-zero emissions buses and coaches, as no phase out date has been given.⁴¹

Emissions reductions for the phase out of new non-zero emissions HGVs are calculated based on Transport & Environment's scenario for 2035 phase out of small HGVs and 2040 phase out of large HGVs.⁴² This is consistent with the proposed timeline in the government's consultation on HGV phase out. The scenario assumes 35 per cent uptake by 2030 for small HGVs and 15 per cent uptake by 2030 for large HGVs. These uptake rates assume that the ZEV mandate consultation, discussed below for cars and vans, applies to HGVs. Emissions over the fifth carbon budget period (2028-32) from this scenario are compared to emissions from a baseline of no further uptake of zero emissions HGVs beyond today's level.

The government is consulting on introducing a ZEV mandate but has not yet provided information on its proposed design, so details regarding EV sales targets are not available. Our estimate of emissions reductions is based on Green Alliance's own analysis and assumes a ZEV mandate of

23 per cent by 2025 and 69 per cent by 2030. Note that this is below the CCC's recommended level of ZEV sales and is based on more conservative assumptions of the impact of a ZEV mandate.

As part of DfT's green paper, the government is consulting on regulations to reduce emissions from petrol and diesel vehicles by improving efficiency. We estimate emissions savings from these are in line with the CCC's sixth carbon budget 'Balanced pathway' for cars, vans and trucks, compared to a baseline of no improvements.

Estimates of emissions from the measures proposed to meet the 'net zero domestic aviation' by 2040 target are from the government's *Jet zero consultation: evidence and analysis*.⁴³ The four measures included are carbon pricing, fuel efficiency improvements, zero emission aircraft and sustainable aviation fuel (SAF). The emissions savings from SAF are excluded here as they are counted under the SAF mandate consultation. The proportion of emissions saved under the consultation's Scenario 2 'High ambition' over the fifth carbon budget period are applied to government forecasts of emissions from domestic aviation in 2030. This central scenario represents more ambition than a continuation of current trends, but no breakthroughs on SAF or zero emission aircraft.

Our estimates of emissions reductions from a SAF mandate on international and domestic aviation are also based on Scenario 2 'High ambition' from the 'jet zero' consultation. This scenario assumes 30 per cent SAF uptake by 2050, in line with the CCC's Balanced Net Zero pathway and the industry's *Sustainable aviation fuels road-map*.⁴⁴

For the buildings sector, five consultations that have opened and closed over the past year are included, to reflect the potential emissions savings that could be achieved if these policies were included in the upcoming heat and buildings strategy:

1. Improving the energy performance of privately rented homes.⁴⁵
2. Improving home energy performance through lenders.⁴⁶
3. Future buildings standard.⁴⁷
4. Introducing a performance-based policy framework in large commercial and industrial buildings.⁴⁸
5. Clean heat grant.⁴⁹

Estimates of emissions reductions from these consultations are based on publicly available government impact assessments. For improving the energy performance of privately rented homes, improving home energy performance through lenders and future buildings standards, we assume the preferred policy option is chosen. For introducing a performance based policy framework in large commercial and industrial buildings, we assume the central scenario is chosen.

Estimates of emissions reductions for the clean heat grant are based on the government impact assessment published as part of the consultation on future support for low carbon heat.⁵⁰ This impact assessment projects 5.9MtCO₂e reductions over the fifth carbon budget, 4.3MtCO₂e of which is attributed to the green gas support scheme, leaving 1.6MtCO₂e for the clean heat grant.

The impact assessment for the Warm Homes Discount Scheme consultation projects emissions reductions of 1.7MtCO₂e over the next four years but does not project savings over the fifth carbon budget period (2028-32) so emissions reductions are not included here.⁵¹

Endnotes

- ¹ Committee on Climate Change (CCC), 2020, *Sixth carbon budget advice report*, figure 2.3
- ² CCC, 2020, *The sixth carbon budget, the UK's path to net zero*
- ³ Ibid
- ⁴ The CCC's goal is more ambitious than the government's own target for this period. See p433 of: CCC, 2020, *The sixth carbon budget, the UK's path to net zero*
- ⁵ Office for Budget Responsibility, 2021, *Fiscal risks report*
- ⁶ CCC, 2020, *Sixth carbon budget advice report*, figure 2.1
- ⁷ Emissions reductions since the pandemic have not been included as they are not representative of climate action and are likely to rebound as the economy recovers. In 2020, for example, emissions from aviation and surface transport declined by 60 per cent and 19 per cent respectively compared to 2019 levels (CCC, 2021, *Progress in reducing emissions: 2021 report to parliament*). This was due to the unprecedented restrictions placed on travel during the pandemic and is unlikely to be sustained in the future.
- ⁸ CCC, 2020, *Progress report to parliament 2020*
- ⁹ Ibid
- ¹⁰ CCC, 2020, *Sixth carbon budget advice dataset*. We compared the CCC's baseline projections for each sector over 2028-32 (CCC, 2020, *Sixth carbon budget advice report*, figure 2.3) against its sectoral recommendations over the same period (CCC, 2020, *Sixth carbon budget advice report*, figure 2.4). Calculations for estimated emissions savings from policy since 2020 are explained in the methodology on pages 18-19.
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- ¹² Energy Efficiency Infrastructure Group, 2020, *From the Green Homes Grant toward a resilient net zero economy*
- ¹³ UN Environment Programme, 2019, *Global resources outlook 2019: natural resources for the future we want*
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- ²³ Energy Futures Lab (Imperial College London), 2021, *Net-zero GB electricity: cost-optimal generation and storage mix*
- ²⁴ The White House, 2021, 'Fact sheet: President Biden sets 2030 greenhouse gas pollution reduction target aimed at creating good-paying union jobs and securing U.S. leadership on clean energy technologies'
- ²⁵ Onward, 2021, *Getting to net zero: a practical policy commission to deliver decarbonisation in the UK*
- ²⁶ UK Government, 2021, press release, '10p plastic bag charge introduced in England'
- ²⁷ Environmental Investigation Agency, 2021, *Checking out on plastics III*
- ²⁸ CCC, 2020, *The sixth carbon budget, the UK's path to net zero*
- ²⁹ Office for National Statistics, 2019, *Road transport and air emissions*
- ³⁰ CCC, 2020, *The sixth carbon budget, the UK's path to net zero*
- ³¹ *The Times*, 23 August 2021, 'Polluting private jets get a tax cut'
- ³² *The Times*, 23 June 2021, 'UK prepares to approve oilfield despite COP26 climate conference'

- ³³ CCC, 2020, *Sixth carbon budget – methodology report*
- ³⁴ See endnote 2
- ³⁵ Note that emissions savings from the phase out of petrol and diesel cars and vans have been updated to reflect the lowest level of zero emission vehicles as indicated in the Department for Transport 2021 publication *Transitioning to zero emission cars and vans: 2035 delivery plan*.
- ³⁶ Green Alliance, 2021, Spending review 2021-2024 representation
- ³⁷ UK Government, 2021, consultation, 'Heavy goods vehicles: ending the sale of new non-zero emission models'
- ³⁸ UK government, 2021, consultation, 'Green paper on a new road vehicle CO2 emissions regulatory framework for the United Kingdom'.
- ³⁹ UK Government, 2021, consultation, 'Mandating the use of sustainable aviation fuels in the UK'
- ⁴⁰ UK Government, 2021, consultation, 'Jet zero: our strategy for net zero aviation'
- ⁴¹ UK Government, 2021, consultation, 'Ending the sale of new diesel buses'
- ⁴² Transport & Environment, 2020, *How to decarbonise the UK's freight sector by 2050*
- ⁴³ Department for Transport, 2021, *Jet zero consultation: evidence and analysis*
- ⁴⁴ Sustainable Aviation, 2020, *Sustainable aviation fuels road-map*
- ⁴⁵ UK Government, 2020, consultation, 'Improving the energy performance of privately rented homes'
- ⁴⁶ UK Government, 2020, consultation, 'Improving home energy performance through lenders'
- ⁴⁷ UK Government, 2021, consultation, 'The Future Buildings Standard'
- ⁴⁸ UK Government, 2021, consultation, 'Introducing a performance-based policy framework in large commercial and industrial buildings'
- ⁴⁹ UK Government, 2021, consultation, 'Clean Heat Grant: further policy design proposals'
- ⁵⁰ UK Government, 2020, impact assessment, Consultation stage IA: future support for low carbon heat
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