



Mind the gap
Cutting UK
transport's
climate impact

“ green
alliance...

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Summary

Shifting to cleaner forms of transport is the next step in the journey to cutting the UK's climate impact and cleaning up the air in our towns and cities. Despite rising electric vehicle sales, the UK's fleet of cars, vans and trucks is still largely powered by polluting petrol and diesel, and road transport remains the highest emitting economic sector. If aviation and shipping are included, transport accounts for over a third of the UK's total greenhouse gases.

Successive governments have introduced some powerful policies. The plan to phase out sales of new petrol and diesel cars in 2030 and the accompanying zero emission vehicle (ZEV) mandate, requiring a growing proportion of new cars sold to be electric vehicles (EVs), will result in huge carbon savings.

The ZEV mandate is driving sustained growth in the sales of electric vehicles, but the government now also needs to follow through on promised measures to cut the climate impact of long distance vehicles with high emissions, like HGVs and coaches.

Since 2020, our *Net zero policy tracker* has consistently shown the significant gap between what active and promised policies will achieve and the emissions reductions needed to put the UK on the right trajectory to a net zero carbon economy by 2050.

For transport alone, we estimate that current policy will result in 97MtCO₂e excess emissions over the period 2028 to 2032 (the UK's fifth carbon budget). This is equivalent to a year's worth of emissions from all the cars, taxis, lorries and vans on our roads today. A credible carbon budget delivery plan must address this with new policy to get the UK back on track to meet its international commitments under the Paris climate agreement and achieve its 2050 net zero goal.

It is a big task, requiring a strategic approach, but our analysis shows it is possible to cut emissions further with concerted effort across all modes of transport and there are many areas with considerable scope to act. The range of solutions we present here would also bring a wealth of other important

benefits to communities, from easing congestion and cleaner air, to healthier streets and greater connectivity. We focus only on those policies where the carbon reduction potential can be clearly quantified and significant savings are achievable.

We calculate that, with these new actions, there is potential to achieve an additional reduction in greenhouse gas emissions of 105MtCO₂e between 2028 and 2032, by accelerating the transition to EVs for high mileage vehicles, encouraging the better use of cars, switching sooner to electric buses, expanding rail use, better integrating public transport, limiting aviation growth and rolling out greener shipping fuels.



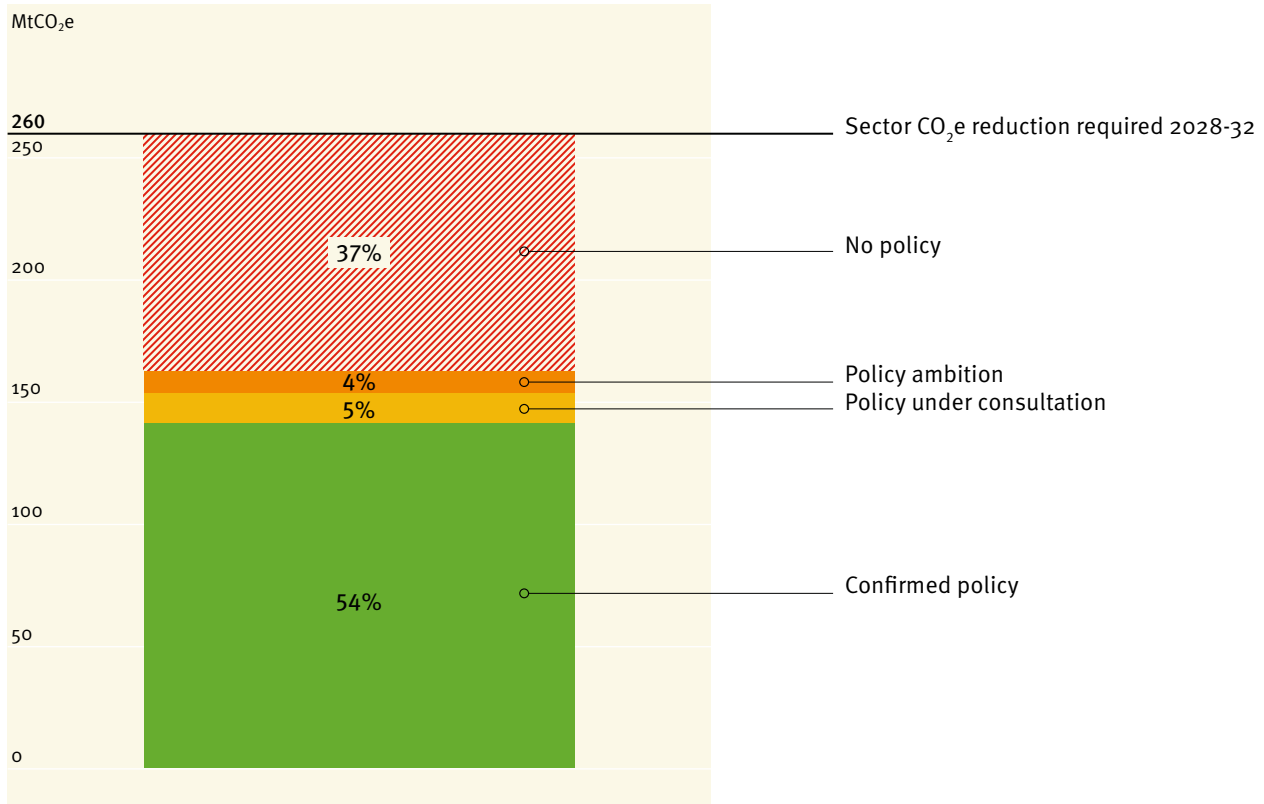
Introduction

Our outdated transport system is responsible for around a third of the UK's climate-changing emissions. It slows our economy down with traffic congestion and is the biggest cause of poor air quality in urban areas. More investment in modernisation and clean technology is vital.

Our *Net zero policy tracker*, which has been monitoring government policy since 2020, has found repeatedly that the UK needs to do more to accelerate to a cleaner transport system, as our latest assessment from 2024 shows (see opposite).¹ Progress is being made on the electric vehicle (EV) transition, but transport emissions are still much too high.

Solutions to meet climate targets exist, but a shift in ambition and the pace of action is needed. Since coming to power, the government has promised to modernise transport by revitalising the railways, improving bus services and continuing the transition to EVs. As parliament considers new bills for better buses and rail reform, and the government prepares the national integrated transport strategy, we look here at the range of specific policies that could be used to 'mind the gap' on UK transport emissions.

Net zero policy tracker 2024: transport



Why existing policy must be delivered

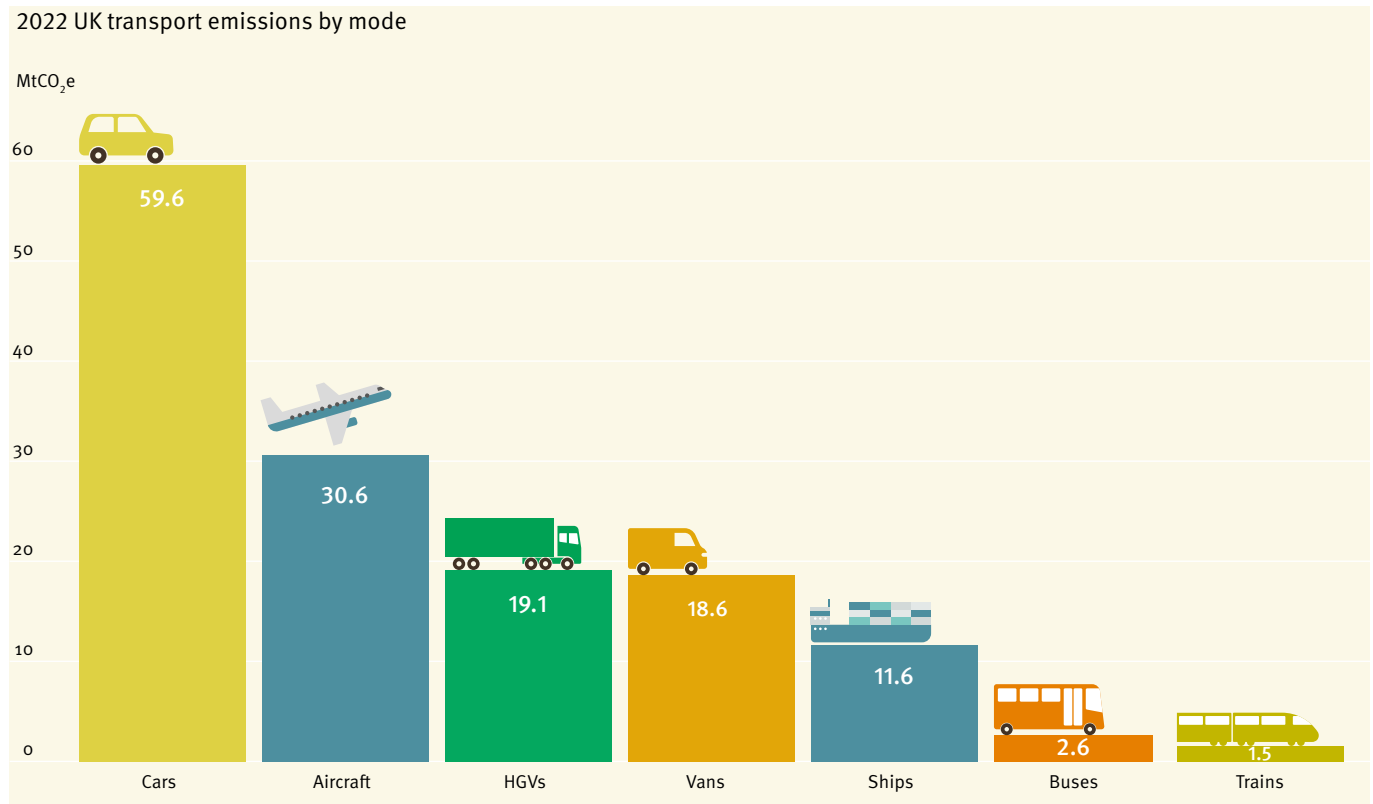
The UK is on a journey to cleaner transport. While emissions in this sector remain high compared to other sectors, progress is being made and will accelerate in the coming years.

In January 2024, the government's single biggest climate policy under its Net Zero Strategy, the zero emission vehicle (ZEV) mandate, came into force. This sets proportional sales targets for manufacturers of new cars and vans. Over time, these figures will increase until all new sales will be zero emission in 2035. Cars were responsible for 15 per cent of the UK's total emissions in 2022, so the ZEV mandate is a crucial intervention to reach net zero. According to the government's own figures, the mandate will save 415MtCO₂e over the three decades to 2050, compared to a scenario where the current level of regulation is maintained.² The ZEV mandate is a cornerstone policy to cut the climate impact of transport. Holding firm on it is vital.

There are some areas where the delivery of existing commitments is in danger of slipping. The carbon budget delivery plan, released in March 2023, promised a range of policies in the coming years. In calculating the gaps in government action, our *Net zero policy tracker* assumed these policies would be delivered on time. For instance, the plan outlines a regulation to scale up zero emission medium and heavy good vehicles to take effect from 2026.³ But there has been little movement to take this forward, with a risk that there will not be enough time to consult, legislate and implement such a plan in time to meet the deadline set.

Following a judicial review by ClientEarth, Friends of the Earth and the Good Law Project, the High Court ruled in May 2024 that the existing carbon budget delivery plan is insufficient to meet the UK's legally binding carbon targets. The government is expected to publish a revised plan by May 2025. This should provide more detail about implementation to inspire confidence that its pledges will be met.

Where are the emissions coming from?



Closing the gap

Our analysis shows it is possible to address the shortfall in existing government plans with concerted action across all transport modes.

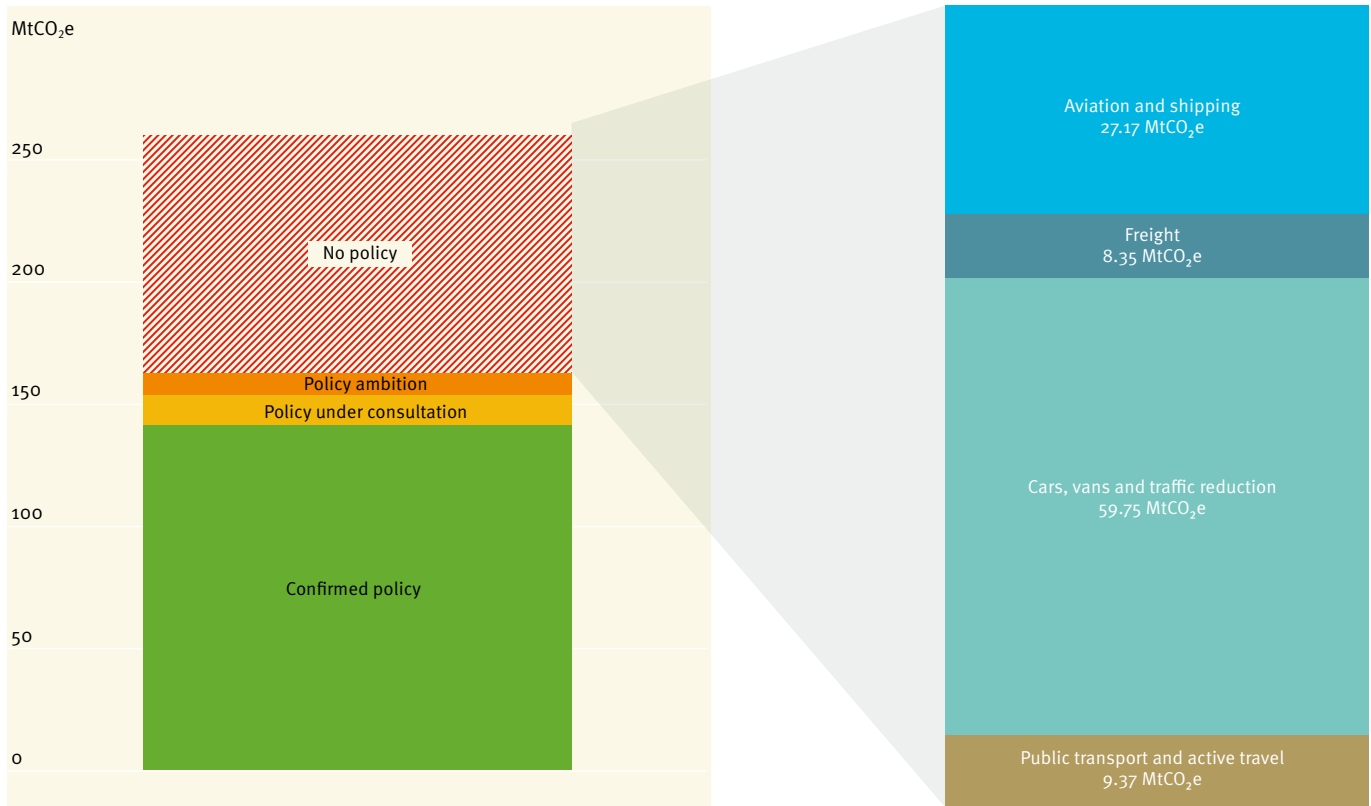
We have focused on the areas where the biggest savings can be achieved and policies where the carbon reduction potential can be estimated and quantified. We calculate a potential additional 105MtCO₂e reduction could be achieved between 2028 and 2032.

Cars are the biggest source of transport emissions. The previous government introduced the ZEV mandate, which has significant potential to cut emissions. No other individual transport policy can deliver such big carbon savings so rapidly while remaining politically feasible.

Other actions will involve concerted effort across multiple transport modes to reduce polluting behaviours and speed up the rollout of low carbon technologies.

Here, we set out a range of quantified potential policies, relevant to different transport modes, to help achieve the additional emissions savings needed.

How to close the emissions gap: our proposals summarised



Cut the impact of the existing car and van fleet

The ideal future for cars and vans in the UK is for the fleet to go electric, well integrated with thriving public transport and other sustainable modes. Integrating public transport, improving active travel infrastructure, sharing more journeys and expanding car clubs in towns and cities will ease congestion and cut emissions, while improving efficiency and accessibility. The government could also do more to support car clubs and shared transport hubs, as other countries do, for instance using mobility credits and tax incentives as encouragements.

However, millions of polluting petrol and diesel vehicles will remain on Britain's roads, even if all new vehicle sales are electric from 2035. Accelerating the electric transition for vehicles that drive the most miles, such as taxis, delivery vans and cars used for work purposes, would lead to significant carbon savings. Setting an end date for licensing petrol and diesel taxis is one policy that could speed up the shift.

Economic incentives to switch to EVs or public transport could also be ratcheted up over time. A gradual rise in fuel duty, ending the emergency cut and the 14 year rate freeze, would help to achieve this.

Lower speed limits make streets safer and reduce emissions. Parking charges could be used in urban centres to encourage more people to use public transport.

Together, these changes would make road transport cleaner, healthier and more equitable.

New policies for cars and vans



Change required	Estimated annual emissions abatement (MtCO _{2e})	Policies	How to enable
Accelerate the transition to electric vehicles	2.75	Restore the 2030 petrol and diesel ban for new cars and vans	Post-2030 standards for sales of new non zero emission vehicles, alongside the ZEV mandate
		Only grant licences for zero emission taxis and private hire vehicles from 2028	Scrappage scheme
Cut car traffic and emissions	8.94	Reverse the temporary 5p cut in fuel duty and ratchet rates up by 2p per year	High quality, frequent and affordable public transport, providing viable alternatives to car use
		Reduce car speeds by an average of 1.5mph	Lower speed limits, with greater reductions in urban areas
		Urban parking charges	Local authority parking charges focused on urban areas, with higher charges for leisure and commuter parking
		Increased average car occupancy to 1.75	Car sharing through employer led schemes and city car clubs ; targeted funding for a network of shared transport hubs across the UK tax second cars
Cut van traffic	0.25	Encourage modal shift from vans to cargo bikes in urban areas	'Try before you buy' schemes; suitable infrastructure; preferential traffic filtering measures in residential areas

Decisive action on aviation and shipping

Aviation and shipping both have high emissions and will become proportionally higher polluters in the coming decades as other transport modes decarbonise faster.

The previous government's 'jet zero' strategy predicts aviation will still be emitting 19MtCO_{2e} in 2050 when the country's overall emissions reach net zero. That is equivalent to the emissions from all the lorries on the road in the UK today.⁴

Zero emission flight is still some way off. Until the aircraft industry develops the technologies that will secure a long term sustainable future for aviation, the amount of flying will need to be moderated to limit the growth in emissions and avoid an undue burden on other areas of the economy to decarbonise. Removing the tax break on polluting jet fuel, and pausing airport expansion until zero emission flight technology is developed would help to limit the projected growth in demand and emissions.

While greener fuels exist for shipping, the scale of their production must be increased dramatically. Grid connections will need to be upgraded to allow shore side power for ships, so they use electricity instead of diesel while berthed in the UK. Moving early on greener shipping fuels will increase certainty and encourage more investment in scaling up.

New policies for aviation and shipping⁵



Change required	Estimated annual emissions abatement (MtCO ₂ e)	Policies	How to enable
Manage demand for domestic and international aviation	4.47	A kerosene tax where air service agreements allow	Increase duty on kerosene, with discounting for sustainable aviation fuel
		A moratorium on airport expansion	Update planning rules to prohibit airport expansion until zero emission technology is developed
Cut domestic and international shipping emissions	0.97	7.5% zero emission shipping fuel mandate by 2030	Develop the supply chain for zero emission fuels
		Mandate ships to use shoreside power from 2030	Invest in grid upgrades to provide adequate power to ports

Target low carbon freight

Decarbonising road freight is challenging because of the long distances driven. But reducing emissions from HGVs is essential to reach net zero. HGVs emitted 19MtCO₂e in 2022, a figure that has remained largely unchanged over the past three decades.⁶

Shifting freight onto rail has a number of benefits, including around 76 per cent lower carbon emissions per tonne compared to HGVs.⁷ It will also reduce road traffic allowing less congested essential road journeys. This cuts other air pollutants too, like harmful particulates, and the pollution from tyre and brake wear which runs off into rivers, adversely affecting freshwater biodiversity.⁸

But, even with significant rail freight investment, HGVs will still be the primary transporters of goods for years to come. Prioritising zero emission alternatives, particularly electric HGVs, should be central to sustainable transport strategy. Policies that could support the switch include a sales mandate on manufacturers, similar to that applied to cars and vans, investment in heavy duty rapid charging infrastructure and the reform of the HGV levy.

New policies for freight



Change required	Estimated annual emissions abatement (MtCO ₂ e)	Policies	How to enable
Increase the share of freight by rail	0.82	Double rail's share of freight by 2030	Invest more in rail freight capacity; a levy and rebate system at distribution centres to encourage rail over road freight
Cut the number of fossil fuelled HGVs	0.85	Introduce a per mile HGV levy, in line with European HGV charging models	A zero emission HGV mandate; new depot and strategic road network charging infrastructure

Invest in public transport and active travel

For too long, public transport has been underfunded and neglected outside London, and regional rail and bus services are often poorly integrated. Cycling shorter journeys is healthier than driving and reduces air pollution but, in many areas, people do not feel safe riding in traffic due to the lack of segregated cycle lanes. For these reasons, many people depend on their cars, keeping transport emissions stubbornly high.

Investing in affordable, integrated, reliable public transport and active travel across Britain would cut carbon emissions, support the government's growth and clean energy missions, and increase access to job and leisure opportunities. It reduces congestion and ensures cleaner air, making towns and cities healthier, more pleasant places to live.

The government has pledged to revitalise the UK's railways under public ownership, devolve greater powers on public transport to local leaders and grow rail passenger numbers. But this must be backed by spending plans, supporting the national integrated transport strategy with long term funding for bus service revival, investment in better rail connectivity across the regions and improved active travel infrastructure, with better links to bus services and train stations.

New policies for public transport and active travel



Change required	Estimated annual emissions abatement (MtCO ₂ e)	Policies	How to enable
More affordable and frequent electrified trains.	0.37	Rail fare discounts	Flexible season tickets; means tested railcards
		Rail frequency increase	Open access operators (small private operators that can fill capacity gaps); building new lines
		Electrified trains	New electric rolling stock; electrify 130km of track per year
More affordable, frequent and faster electric buses	0.25	Bus fare caps	Metro mayors support reduced fares; national fare cap extension
		Electrified buses	A stretch target of 50 per cent electric metropolitan fleets by 2030 and no new diesel buses sold beyond this date
		Bus frequency increase	Funding to improve local and regional bus services
		Faster bus routes	Ringfence funding for bus priority measures
Integrated rail and bus services	0.76	Integrated timetabling	Great British Railways working with franchised bus services
Increase all forms of cycling	0.49	Develop active travel infrastructure	Match Scotland's ambition to commit ten per cent of transport funding to active travel; support 'try before you buy' ebike schemes

The case for greater political will

The range and scope of the policies we have considered is wide because the more large scale, straightforward actions have already been taken, including setting end dates for the sale of new petrol and diesel vehicles and introducing the ZEV mandate. Even with these policies, there is still a significant gap in necessary action and more has to be done to address it.

The policies we have proposed here include many which will come with political challenges and which have some financial implications for the government. But, as well as their environmental benefits, the economic and social case is clear for policies which also give us cleaner air, healthier towns and cities, safer roads and lower congestion.

Fuel duty has been frozen or cut since 2011, eating into the Treasury's revenues and cutting the cost of driving in real terms. It is estimated that 21MtCO₂e has been added to UK carbon emissions as a result of the freeze, so it should be lifted.⁹ Any policy that

increases driving expenses when the cost of living is already high will be unpopular, so it should be balanced with improvements and fare reductions on public transport, to avoid greater social exclusion.

Many investments may also be difficult politically. Investment in active travel or public transport infrastructure can be met with resistance when it has an impact on existing norms, reallocating road space away from drivers. But this investment contributes to growth by reducing health costs, congestion and increasing access to work and leisure for those without access to a car.

Other interventions, including measures to tackle aviation emissions, could lead to costs being passed onto passengers. Taxing aviation fuel is a necessary step to price aviation's climate impact appropriately and close the loophole that treats jet fuel more favourably than petrol and diesel for cars.

The government should also prioritise solutions which embed social justice. For instance, the

biggest polluters should pay more, such as private jets and the most frequent flyers, rather than those who fly occasionally.¹⁰

Where there might be political challenges, there are also opportunities. Green policies labelled as negative are bound to fail. But, if the government extols the benefits of public transport and active travel to cut emissions, improve air quality and build a stronger, more connected economy, these interventions could win public backing. Environmental taxes are not unpopular if people see them as fair and there should be more investment to help people choose alternative modes of transport.¹¹

Next steps to greener UK transport

It is expected that the UK will achieve significant emissions savings in the transport sector through the existing ZEV mandate and the 2030 end date for new petrol and diesel cars. But there will still be many millions of fossil fuelled vehicles on the road after 2030 and a considerable way to go before transport is a truly low carbon sector and not disproportionately contributing to the UK's climate impact.

A credible carbon budget delivery plan, putting the UK on track for net zero by 2050, needs to address this.

Government policy should back the shift to more efficient public transport. It should also focus on accelerating the electrification of the highest mileage vehicles, like taxis and delivery vehicles, which produce a greater share of emissions. Aviation's growth and airport expansion should be limited until zero emission technology is a more realistic prospect.

As we have shown, some complex political challenges have to be navigated and it will be crucial to get the public on board. While some policies require much more investment, with the right approach this could be balanced, at least in part by revenues raised by others.

Policies that cut air pollution and improve access to public transport reduce spending across government departments, improving health, tackling regional inequalities and expanding access to work opportunities, as well as mitigating the economic costs of climate change.

Legislation which aims to improve public transport: the Better Bus Bill and the Rail Reform Bill, and the integrated transport strategy, are major opportunities to act decisively.

The government was elected on promises to modernise transport, address regional inequalities and shift to clean energy. On its decisions around transport, this report offers a menu of achievable policies which could help to deliver on these promises.

We also recommend the following:

- Do not backtrack on, or weaken, the ZEV mandate as this would make meeting legal carbon reduction targets extremely difficult and would undermine private sector investment already made by the UK automotive sector in the electric vehicle transition.
- Make transport a major focus of the carbon budget delivery plan to reach net zero by 2050.
- Prioritise promised policies which have not yet been delivered, such as the regulation of HGV emissions.
- Increase capital investment in the spending review: for greater rail connectivity, faster charge point rollout and better active travel routes linked to bus and train services. This can be balanced with sensible tax changes, including removing aviation fuel's tax break, ending the 14 year fuel duty freeze and reforming the HGV levy, which would all raise revenue and encourage sustainable travel.
- Include a target in the integrated transport strategy to increase the number of journeys made by public transport and active travel.

Endnotes

- 1 Green Alliance, 2024, *Net zero policy tracker: March 2024 update*
- 2 HM Government, March 2023, 'Zero emissions vehicle mandate and non-ZEV efficiency requirements consultation-stage cost benefit analysis'
- 3 HM Government, March 2023, 'Carbon budget delivery plan'
- 4 DfT, 19 July 2022, 'Jet Zero strategy: delivery net zero aviation by 2050'
- 5 We have chosen to include policy levers addressing international aviation and shipping emissions, even though they are not formally part of the fifth carbon budget. The Climate Change Committee's pathway to the sixth carbon budget, which our *Net zero policy tracker* uses as a guide to the emissions savings needed over the fifth budget period includes international aviation and shipping. It also assumes some savings from them during 2028-32. The reductions the UK can achieve from acting on its portion of these emissions are greater than the levers already being employed in domestic aviation.
- 6 Department for Energy Security and Net Zero (DESNZ), 6 February 2024, 'Final UK greenhouse gas emissions national statistics 1990-2022'
- 7 Great British Railways transition team, 5 July 2022, 'Future guiding mind for rail seeks views on how to grow freight to reduce road congestion and carbon emissions'
- 8 London City Hall, 2019, 'First study of its kind shows road pollution is contaminating rivers'; Environmental Audit Committee, 2022, *Water Quality in Rivers*
- 9 Simon Evans, 16 March 2023, 'Analysis: Fuel-duty freezes have increased UK CO₂ emissions by up to 7%', *Carbon Brief*
- 10 We have not quantified the impact of increasing private jet taxes in this work due to a lack of available evidence about the behavioural impacts of private jet taxes. The government announced its intention to increase private jet taxes in its 2024 budget, but industry representatives have suggested the rates being considered will not significantly deter private jet use in the UK.
- 11 Green Alliance, 2021, *A greener tax system: the people's verdict*

Green Alliance
18th Floor
Millbank Tower
21-24 Millbank
London SW1P 4QP

020 7233 7433
ga@green-alliance.org.uk

www.green-alliance.org.uk
@GreenAllianceUK

blog: www.greenallianceblog.org.uk

Authors

Rosie Allen, Johann Beckford and Nick Davies

Acknowledgements

With thanks for insight and support to Silviya Barrett from Campaign for Better Transport; Tim Johnson and Celeste Hicks at Aviation Environment Federation; and Ralph Palmer and Jon Hood at Transport and Environment. Thank you also to Roz Bulleid, Holly Brazier Tope, Sophie O'Connell and Charles Long at Green Alliance for their guidance.

Green Alliance

Green Alliance is an independent think tank and charity focused on ambitious leadership for the environment. Since 1979, we have been working with the most influential leaders in business, NGOs and politics to accelerate political action and create transformative policy for a green and prosperous UK.

The Green Alliance Trust
Registered charity no 1045395
Company limited by guarantee
(England and Wales) no. 3037633

Published by Green Alliance
January 2025

ISBN: 978-1-915754-46-2

Designed by Howdy

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