



RISING TO THE CHALLENGE

Achieving net zero will require new thinking, creative solutions and systemic change.

Claire Haigh

31st March 2021



Dear Friends & Colleagues,

The climate crisis is already hitting worst case scenario levels that if left unchecked will lead to the collapse of entire ecosystems. Our thinking needs to change if we are to rise to the scale of the challenge.

Transport is the fastest growing source of global greenhouse gas emissions and the biggest emitting sector of the UK economy. Emissions in the UK are 4% higher than in 2013, and only 3% lower than in 1990¹. Road vehicles are responsible for 90% of transport emissions². Too little progress has been made. As hosts of the COP26 UN climate summit in November the UK will need a credible plan for decarbonising transport.

If we're serious about achieving net zero, every aspect of how we plan for transport will need to change. This will require new thinking, creative solutions and systemic change.

Greener Transport Solutions is dedicated to the decarbonisation of transport. In partnership with ***Transport Times***, we have been bringing together thought leadership on how to decarbonise the sector, with contributions from leading academics, politicians, business leaders, environmental groups and think tanks. Five key themes have emerged:

1. The decarbonisation of transport will involve changes to the wider economy.
2. Technical solutions will be insufficient, we also need behaviour change.
3. Fares and taxes should encourage people to make lower carbon travel choices.
4. We must ensure a fair and just transition to net zero.
5. Greater devolution will be a key driver of decarbonisation.

Building on this work, we have received grant funding from the Foundation for Integrated Transport to develop '***A Manifesto for Decarbonising Transport***'. This work will be overseen by the **Greener Transport Council** of leading experts [Annex I, page 8]. Our aim is to develop a credible and deliverable framework for decarbonising transport, and to build support for some of the *politically challenging* solutions needed if we are to achieve net zero.

We look forward to the publication of the Transport Decarbonisation Plan. A year ago, the Department for Transport set out a vision that acknowledged the need for us to use our cars less. We welcome this emphasis, but if the TDP is to succeed it will need to recognise that the decarbonisation of transport must be planned in the context of the wider economy and across all key enablers of economic activity.

With kindest regards,

A handwritten signature in black ink, appearing to read 'Claire Haigh', written in a cursive style.

Claire Haigh
Founder & CEO, Greener Transport Solutions

31st March 2021

¹ [Decarbonising Transport: Setting the Challenge, Department for Transport, 2020](#)

² [The Road to Zero, HM Government, 2018](#)



1. Transport and the wider economy

The decarbonisation of transport cannot occur without changes to the economy. We need a whole-systems approach that reflects the shift to digital connectivity, and the integration of transport with land-use planning, energy and green finance.

Professor Peter Jones demonstrates that since transport is a derived demand, fundamental changes in travel behaviour (particularly trip reduction, internet substitution and short trips) depend on business model decisions taken in other sectors¹.

Digital connectivity has grown massively in terms of gaining access remotely to people, goods, services and opportunities. Professor Glenn Lyons refers to a ‘triple access system’, whereby one can combine transport with good land use planning and a very mature telecommunications system². The challenge in delivering this is how to overcome the silos of government both nationally and locally.

Professor Dieter Helm argues that digitalisation will increasingly drive the entire economy but our current system of regulation “is precisely designed not to address the integration of transport into our digital world, and into our economy in a decarbonisation context”³. The Aldersgate Group shows that ambitious well-designed environmental regulations can deliver significant benefits but crucially these must not sit in a silo and should be carefully joined up across sectors⁴.

The integration of transport with energy will be critical. The energy transition needed to achieve net zero is “on the scale of the industrial revolution”⁵. The creation of OZEV (Office for Zero Emissions Vehicles) is a step forward, but the National Audit Office recommends that BEIS and DfT review whether OZEV has “the capacity, skills and remit to enable it to effectively oversee the fast-paced transition implied by the 2030 target.”⁶

The investment needed to decarbonise transport will go beyond what will be achievable from the taxpayer or individual user. Other mechanisms such as land value capture will be needed⁷. Covid recovery stimulus packages will also play a critical role in decarbonisation.

Green stimulus packages are proven to be more effective at supporting increased economic activity, generating higher numbers of jobs and long-run cost savings as well as reducing emissions. Clean energy infrastructure investment has positive high long run multiplier impact and positive climate impact. By contrast, airline bailouts without attaching climate conditions score lowest on both counts⁸.

- **A central priority will be to align policies and regulations so as to ensure that government at all levels can plan for jobs, housing, digital, energy, transport, freight and all other drivers of the economy on an integrated long-term basis.**
- **A key challenge will be how to harness private investment in green infrastructure and recovery. Greening finance and the financing of green investments is key.**
- **In launching the Industrial Decarbonisation Strategy Business Secretary Kwasi Kwarteng said that “achieving the net zero ambition will require major transformation of the UK economy”⁹. What system changes will be needed to support that transformation?**



2. The role of behaviour change

We must reduce energy demand and avoid rebound effects. Technical solutions will be insufficient to get us to net zero, we also need behaviour change.

The International Energy Agency describes demand reduction as “the first fuel”. It supports all key goals of energy policy – security, affordability and sustainability¹⁰. The sustainable energy transition will not just involve the shift from unsustainable fuels to renewables but also changes in how, when and where these fuels are used and the activities they enable¹¹.

The Committee on Climate Change says that 62% of future reduction in emissions will rely on individual choices and behaviours¹². However, government has not yet properly engaged with the public on the substantial behaviour changes that achieving net zero will require¹³.

The 2030 ban on sales of new petrol and diesel cars and vans (ICEs) is welcome but it is estimated that we will still need to reduce traffic on our roads by between 20% and 60% by 2030 to meet our carbon reduction targets.¹⁴ This will require a shift from private transport to public, shared and active travel, and to reduce the need for travel. There is also a risk is that in lowering the cost of motoring, electrification will make mode shift even harder to deliver.

The scale of the challenge is immense. In September 2020 there were 32.9 million cars in UK, of these 1.1% (348,506) were ultra low emission with just under 0.5% fully electric¹⁵. ULEV sales have doubled over the past year¹⁶ but from a very low base. There is no such thing as a zero emissions car. Electric vehicles (EVs) are carbon intensive to produce. Decarbonisation of the grid is critical. A key challenge still to overcome is the financial, economic and social cost of sourcing raw materials for batteries¹⁷.

Professor Greg Marsden says we must focus not only on when to stop selling ICEs but how we should electrify as part of a carbon pathway that delivers deep cuts right now. The work of the DecarboN8 network is focused on rebalancing road space between cars, buses, cycling and walking; not locking-in car dependency by assuming we just replace ICEs with (more) EVs; and reducing our carbon footprint by shifting to much more intensive use of a smaller fleet of vehicles and other e-micromobility solutions¹⁸.

Our current use of roads is grossly inefficient. The car is used for 61% of trips and nearly two thirds of car trips are single occupancy¹⁹. The RAC Foundation reveals that the average car is parked 96.5% of the time, and only used 3.5% of the time²⁰.

- **There is a disconnect between public support for tackling climate change and people’s understanding of the changes they need to make in their own lives²¹. A major campaign will be needed to communicate the wider benefits of modal shift, such as improved health and road safety, reducing congestion and air pollution.**
- **There are conflicts between achieving net zero and the levelling up agenda. Net zero requires higher utilisation of a smaller vehicle fleet but growing UK car manufacturing is a key part of Government’s strategy to ‘level up’ the country.**
- **Nicola Sturgeon has announced the next SNP government pledge to cut car use by 20% by 2030. The DfT’s Transport Decarbonisation Plan will need to include a similar 2030 commitment, along with a clear plan for how it can be delivered.**



3. Getting the price signals right

The aim of public policy around climate change should be to ensure that wherever possible external costs are internalized. Price signals should incentivize consumers to lower their carbon footprint.

Professor Dieter Helm describes “making polluters pay” as the single most radical and effective policy that could be adopted both for prosperity and for the environment²². We should follow the “net environmental gain principle” to ensure we protect our natural capital. We must stop subsidising fossil fuels and support divestment from fossil fuels. A strong, predictable and rising carbon price is needed.

We need a total reformulation of transport pricing. How can it be cheaper to fly from London to Edinburgh than to catch the train when emissions per passenger km for air travel is seven times that of rail? The result of repeated failures of road taxation to cover externalities is that we over consume roads. The freeze in fuel duty since 2011, for example, has caused 5% more traffic and an additional five million tonnes of CO2 emission by encouraging more trips by car and fewer trips by public transport²³.

Professor Stephen Glaister et al propose that increasing fuel duty would be a useful interim measure. They argue that to make any increase in fuel duty less unacceptable to the public, the incremental revenue should be ring-fenced and made available to local authorities for beneficial transport purposes. One way to do that would be to use public trusts as these legally require trustees to use money for a dedicated purpose²⁴.

In the longer term, road traffic will increase unless we transition from fuel duty to a new way of paying for road use, and the Treasury will face a potential £40bn black hole (£28bn was paid last year in fuel duty, £6bn came from VAT on fuel, and £6.5bn from Vehicle Excise Duty). As these receipts diminish it would be inequitable in the extreme if road infrastructure was financed from general taxation. This would mean non car owners, a high percentage of them on low income, cross subsidising motorists.

If net zero is a core tenet of the government, the tax system should reflect this. The focus should not only be on environmental taxes but also the consequences of the fiscal system as a whole for outputs relevant to decarbonisation. We need sticks as well as carrots. Some taxes would change behaviour. Others would raise money for green investments.

- **Government needs to show leadership by incentivizing the switch to lower carbon modes. The consultation on halving Air Passenger Duty (APD) for domestic flights, combined with recent rail fare increases and the continued freeze in fuel duty, give the wrong price signals to consumers.**
- **The switch to EVs provides the opportunity for an honest conversation with the public about road taxation. We need a mechanism to introduce road pricing without disintentioning the switch, and a system that can levy tax on both conventionally fuelled and electric vehicles fairly.**
- **There is the risk that a carbon tax can be regressive. The Treasury’s Net Zero Review should consider what can be done to make it more equitable.**



4. Ensuring a fair and just transition

We must ensure a fair and just transition to net zero. Access to essential services, whether by transport or digital means, must be available for all.

Climate change is a global problem requiring global solutions. The question of equity must be central with wealthier countries decarbonising more quickly. We should report emissions based on consumption not production, which places the burden of emissions reductions on those countries which produce energy-intensive goods rather than those which consume them. A sustainable consumption pathway will require aggregate demand to go down²⁵.

In its Interim Net Zero Review, the Treasury has concluded that the combined net effect of climate action on UK economic growth is likely to be small, but the effects will not be equally felt. High carbon sectors will have to adapt or decline. There will need to be policies and mitigation measures to ensure “an equitable balance of contributions from households, businesses and taxpayers”²⁶.

A study by the Joseph Rowntree Foundation highlighted that taxes on fuel for cars are not *in aggregate* regressive because poorer households are less likely to have a car.²⁷ However, a large proportion of the poorest households rely on a car, they are often old and less efficient vehicles. The freeze in fuel duty since 2011 will have helped them. At the same time, by damaging public transport networks, the freeze will have detrimentally impacted low-income households without a car. The cost of motoring has been falling relative to public transport.

Improving the affordability of bus fares must be a key priority. A quarter of households, and nearly half of workless households, have no access to a car. A 10% reduction in public transport accessibility is linked to a 3.6% increase in social deprivation.²⁸

Government could face a major public backlash against its ongoing drive to phase out fossil fuel vehicles if it does not introduce more targeted support for lower-income citizens. The Social Market Foundation demonstrates that low-income groups are significantly less willing to pay for new EV charging infrastructure and renters will find it harder to access charge points than those that own properties²⁹. Ultra low emission vehicles (ULEVs) are typically owned by people in the richest two income deciles. Only 4% of ULEVs are owned by people in the lowest two income deciles³⁰.

Inequalities must also be tackled on a regional level. The UK2070 Commission Report concluded that devolution of powers and responsibilities and funding must be a priority³¹.

- **The recent cut in grants for electric cars seems to be a step in the wrong direction. Some question how long the state should subsidise vehicle purchase given that EV grants benefit predominantly better off households able to afford a new car. At the same time, somehow a second hand market needs to be developed.**
- **Significantly more government support will be needed to ensure that low income households are able to buy EVs, and are not excluded from access to transport.**
- **We need to reform the way we pay for transport if we are to avoid an unfair transition which overtaxes older vehicles but undertaxes overall for road use.**



5. Strengthening devolution

More devolution deals would drive faster delivery of UK wide net zero targets. Central Government should enable local areas to plan for sustainable growth on an integrated long-term basis and ensure that local authorities are sufficiently resourced.

The Scottish Government has taken important steps to embed net zero as core Government policy. Its programme for Government puts “sustainable transport at the heart of decision making”³². The Welsh Government aims to encourage people out of their cars, with a target for 45% of journeys to be by sustainable means across Wales by 2045, up from 32%³³.

We need to reform transport funding and governance so that local leaders can plan for housing, jobs and transport on an integrated long-term basis. The National Infrastructure Commission (NIC) recommends continuous five-year local transport budgets for the Mayoral Combined Authorities, similar to budgets for Network Rail and Highways England. NIC is highly critical of the short-term, competitive and fragmented nature of much local funding³⁴.

Long term support and flexibility should be extended to all local areas. Central government needs to engage with local authorities and ensure that they are sufficiently resourced³⁵. 9 out of 10 councils have declared a climate emergency and 80% have set a carbon neutral target. But 96% report that funding is a barrier to tackling climate change; 93% report that legislation or regulation is a barrier; 88% cite lack of workforce capacity, 78% lack of skills.³⁶

A wholesale reform of appraisal is needed. Existing methods bias projects towards the most easily appraised outcomes such as faster journeys, rather than harder to identify objectives such as integrating housing, jobs and transport. Following its recent Green Book Review the Treasury has changed its guidance for policy appraisal to ensure departments place greater emphasis on environmental impacts³⁷. It now needs to set out how this will work in practice. New analytical tools will be needed to ensure that investments support a green recovery.

Nicholas Stern argues that we need to move beyond narrow frameworks of cost-benefit analysis. Climate change must be framed in terms of the management of immense risks³⁸. Dieter Helm argues that decarbonisation will be driven by a low carbon road, rail, air integrated system. This will require central planning and system regulation³⁹. Total packages of policies must be appraised, not single schemes, and we must prioritise carbon reduction.

The disbenefits of our car dominated culture are painfully apparent. Congestion is a major constraint on growth. In nose to tail traffic emissions increase fourfold⁴⁰. Air pollution largely from road traffic is linked to 40,000 early deaths a year⁴¹. Car dominated sedentary lifestyles are contributing to the obesity epidemic and have exacerbated the growing loneliness epidemic. Damage to public transport networks has heightened social deprivation.

- **Government needs to provide clearer messaging and support for local authorities implementing politically difficult measures such as charging or traffic restraint.**
- **The Industrial Strategy Council has warned that Government will fail to level up Britain’s poorer regions or set the country on course for net zero unless more power is devolved locally, and more money is invested in green policy⁴².**
- **What are the barriers to greater devolution and how can these be overcome?**



ANNEX I: About Greener Transport Solutions

Greener Transport Solutions (GTS) is a not for profit organization dedicated to the decarbonisation of transport. Through the Transport Knowledge Hub, GTS works with local and central Government and the transport community to encourage investments that will facilitate inclusive and sustainable economic growth.

GTS has received grant funding from the **Foundation for Integrated Transport** to develop a 'Manifesto for Decarbonising Transport'. This work is overseen by the Greener Transport Council of leading academics and experts.

Greener Transport Council

Professor Jillian Anable, Chair in Transport and Energy, Institute for Transport Studies, University of Leeds

Stephen Glaister, Emeritus Professor of Transport and Infrastructure at Imperial College London, Associate of the London School of Economics

Professor Peter Jones, Professor of Transport and Sustainable Development in the UCL Centre for Transport Studies

Professor Glenn Lyons, Mott MacDonald Professor of Future Mobility, University of the West of England

Professor Greg Marsden, Professor of Transport Governance, Institute for Transport Studies, University of Leeds

Stephen Joseph, Visiting Professor at University of Hertfordshire and Trustee of the Foundation for Integrated Transport

Paul Champion, CEO of TRL

Hilary Chipping, CEO South East Midlands Local Enterprise Partnership

Andy Eastlake, Managing Director Zemo Partnership (formerly Low CVP)

Claire Haigh, Founder & CEO of Greener Transport Solutions

Kamal Panchal, Senior Adviser on Transport and Local Growth Policy, Local Government Association

Anthony Smith, CEO of Transport Focus



References

- ¹ [Jones, P., Smeds, E. and Dean, M. \(2021\). Initial conceptual framework to map and establish cross-sector 'links' between major trip generating sectors of the economy. Deliverable D1.4, H2020 CIVITAS SUMP-PLUS project.](#)
- ² [Guidance for transport planning and policymaking in the face of an uncertain future, Glenn Lyons & Cody Davidson, June 2016](#)
- ³ [Dieter Helm, keynote speech to Transport Knowledge Hub Decarbonising Transport conference March 2020](#)
- ⁴ [Fostering Prosperity, Buro Happold 2021, commissioned by Aldersgate Group](#)
- ⁵ [CREDS Annual Report, April 2018-September 2019, Nick Eyre & Clare Downing, November 2019](#)
- ⁶ [Reducing carbon emissions from cars, National Audit Office, February 2021](#)
- ⁷ [Delivering Land Value Capture for Railways, Dr George Hazel, OBE, Director of E-Rail](#)
- ⁸ [Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change? Hepburn et al, Smith School Oxford, May 2020](#)
- ⁹ [Industrial Decarbonisation Strategy, BEIS, March 2021](#)
- ¹⁰ [Energy efficiency is the first fuel, and demand for it needs to grow, IEA, December 2019](#)
- ¹¹ [CREDS Annual Report, April 2018-September 2019, Nick Eyre & Clare Downing, November 2019](#)
- ¹² <https://www.theccc.org.uk/uk-action-on-climate-change/reaching-net-zero-in-the-uk/>
- ¹³ ['Achieving Net Zero', Public Accounts Committee, March 2021](#)
- ¹⁴ [More than electric cars, Transport for Quality of Life briefing for Friends of the Earth, December 2018](#)
- ¹⁵ [Reducing carbon emissions from cars, National Audit Office, February 2021](#)
- ¹⁶ [Reducing carbon emissions from cars, National Audit Office, February 2021](#)
- ¹⁷ <https://www.transporttimes.co.uk/news.php/Floating-toward-zero-carbon-618/>
- ¹⁸ <https://www.transporttimes.co.uk/news.php/Greening-the-EV-Transition-586/>
- ¹⁹ [Shared Mobility: Where now? Where next? Commission on Travel Demand, CREDS, September 2019](#)
- ²⁰ [Spaced out: Perspectives on Parking Policy, published by RAC Foundation 2012](#)
- ²¹ ['Achieving Net Zero', National Audit Office, December 2020](#)
- ²² <http://www.dieterhelm.co.uk/books/> Green and Prosperous Land: A Blueprint for Rescuing the British Countryside, March 2019
- ²³ [The Unintended Consequences of Freezing Fuel Duty, Prof David Begg & Claire Haigh First published in 2018, analysis updated in 2020.](#)
- ²⁴ [Funding Transport, Stephen Glaister, Tony Travers, David Bayliss, March 2020](#)
- ²⁵ [Net Zero: How We Stop Causing Climate Change, Dieter Helm, September 2020](#)
- ²⁶ [Net Zero Review: Interim Report, HM Treasury, December 2020](#)
- ²⁷ [Green Taxes and Charges, Simon Dresner & Paul Ekins, Joseph Rowntree Foundation, 2004](#)
- ²⁸ [The Value of the Bus to Society, Greener Journeys, October 2016](#)
- ²⁹ [Together in electric dreams, Social Market Foundation, March 2021](#)
- ³⁰ [Electrifying the UK, Ensuring the transportation revolution benefits everyone, Frontier Economics and Environmental Defense Fund 2019](#)
- ³¹ [Make no little plans: Acting at scale for a fairer and stronger future, UK 2070 Commission, February 2021](#)
- ³² [National Transport Strategy, First Annual Delivery Plan 2020-22, Scottish Government](#)
- ³³ [A transport system fit for future generations, Welsh Government, March 2021](#)
- ³⁴ [National Infrastructure Commission Annual Monitoring Report 2021](#)
- ³⁵ ['Achieving Net Zero', Public Accounts Committee, March 2021](#)
- ³⁶ [Climate Change Survey, Local Government Association, February 2020](#)
- ³⁷ [Final Report of the 2020 Green Book Review, November 2020](#)
- ³⁸ [Why are we waiting? Nicholas Stern, July 2016](#)
- ³⁹ [Dieter Helm, keynote speech to Transport Knowledge Hub Decarbonising Transport conference March 2020](#)
- ⁴⁰ [Tackling Pollution and Congestion, Professor David Begg, Claire Haigh 2017](#)
- ⁴¹ [Every breath we take: the lifelong impact of air pollution, Royal College of Physicians, 2016](#)
- ⁴² [Industrial Strategy Council Annual Report 2021](#)