CLAIRE HAIGH's

MONTHLY COLUMN *for*

PASSENGER TRANSPORT

Claire Haigh, Founder & CEO of Greener Transport Solutions, writes a monthly column for *Passenger Transport* magazine. This report includes contributions from 17th May 2019 to 13th December 2019.

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CLAIRE HAIGH

We must see this as an opportunity

Next year's COP26 climate summit takes place in Glasgow. As the host nation, we must keep our own house in order and dig deep

2019 has been a fractious year ending with a general election which leaves us as divided as ever and with Brexit far from resolved. Looking ahead to 2020 we can expect this issue to continue to dominate. Critical though the Brexit conundrum may be however, tackling climate change must take precedence.

We have become grimly accustomed to dire predictions and admonitions. At the opening of the COP25 climate conference last week in Madrid, the UN secretary general Antonio Guterres warned that the point of no return on climate change is in sight and hurtling towards us. He asked: "Do we really want to be remembered as the generation that buried its head in the sand, that fiddled while the planet burned?"

The scale of the challenge both in terms of the science and the politics cannot be overstated. The World Meteorological Organisation declared that this decade has been the hottest on record. WMO also estimates that incredibly 5% of GDP globally currently goes on subsidising fossil fuels. There is little sign of any world leader inclined to address this perverse state of affairs.

Next year's COP26 climate summit in Glasgow will be the most important conference of the parties since 2015 and will provide the UK as host with an opportunity promote greater international ambition and cooperation. However, that will require that we keep our own house in order. It will also require a completely different tone and spirit to the adversarial level of discourse we have become accustomed to.

As a nation we are going to need to dig deep. Climate change is an existential threat which will not only require unprecedented levels of cross-party consensus but also strong engagement of the business community and support from the general public.

Time to be bolder

As the biggest emitting sector, transport received plenty of attention during the election campaign. However, the tension between "business as usual" and taking the actions needed was palpable. Transport emissions have remained stubbornly high due to rising demand for car/van and air travel. But there was conspicuously little in the manifestos on demand reduction and plenty of wishful thinking.

Aviation is a major growing source of emissions but the two main parties gave their conditional support to airport expansion. The Lib Dems and Greens did propose a frequent flyer levy, although this was partially undermined by the Lib Dems' proposal to reduce costs for those who take one or two international return flights per year. Whilst SNP proposed to create the world's first "zero emission aviation region", the Committee on Climate Change has warned that zero carbon aviation is very unlikely to be feasible by 2050.

The Conservatives said they would consult on the earliest date to phase out petrol and diesel cars "while minimising the impact on drivers and businesses". Labour "aim" to end new sales of combustion engines by 2030 and

"Do we really want to be remembered as the generation that buried its head in the sand? That fiddled while the planet burned?" Antonio Guterres

UN secretary general Antonio Guterres at the COP25 climate conference in Madrid last week

the Lib Dems pledged to ensure that every new car and small van sold is electric. Only the Greens were clear that electric cars are not a panacea and we must prioritise modal switch and reducing the need to travel. All the main parties pledged to improve public transport, but there was little on demand management and no mention of increasing fuel duty.

The manifestos revealed different approaches and divergent views on how quickly we should reach net zero. There was agreement with the principle that we must reduce emissions as fast as possible, although specific proposals show a paucity of ambition. The Green Party alone matched the scale of ambition needed, with £100bn a year for its Green New Deal and a Carbon Tax on fossil fuels.

There are signs however that radical interventions could become more politically acceptable. A survey this autumn for Client Earth revealed that 70% of people believe that the climate emergency demands more urgent attention and 63% feel it is the biggest issue facing humankind.

Change is possible. Extinction Rebellion and the School Strikes have created the space for government to be bolder. We may still be a way off the point where challenging the hegemony of the car becomes mainstream, but there is growing awareness across business and the public that we need to change how we travel.

Business matters

Earlier this year the Aldersgate Group, a leading voice for businesses on the sustainability agenda in the UK, set out a prospectus for decarbonising transport. Shifting emissions into reverse gear included recommendations to improve public transport and reduce the need for private vehicles. It called for improvements to the rail network, a national bus strategy, better integration of new housing developments with sustainable transport, and the introduction of new fiscal measures to leverage investment in sustainable transport such as a new system of road pricing.

Last week it published its manifesto for the next government. *Time to deliver: Building a competitive and inclusive green economy* sets out recommendations for putting the UK on track to deliver net zero. These include a targeted update of the Clean Growth Strategy to accelerate emissions cuts in priority sectors such as buildings and surface transport; and at

"The level of engagement required across all parts of society is comparable to a major war effort"

scale trials of the critical technologies needed to decarbonise industry, long distance travel and the provision of heat.

Time to deliver also highlights the importance of a just transition for workers and communities. It calls for the passing of an ambitious Environment Bill, a radical improvement in UK's resource productivity and waste reduction, increased ambition for the Greener Finance Strategy, and for the UK to be an influential voice on the global stage for more ambitious climate and environmental policy.

One of the most positive developments over the past few decades has been the constructive engagement of business on the decarbonisation agenda, and the quiet but consistent progress made by individual companies. Pioneers like the former CEO of Unilever Paul Poleman are no longer outliers. Companies like Patagonia, IKEA, Natura, Danone, Nestle, M&S and Tesla have also been making their mark.

A growing number of businesses have pledged to source 100% renewables. Last week The Climate Group published the annual report for its RE100 initiative - for companies committed to 100% renewable power. If they were a country RE100 members would be the 21st largest electricity consumer in the world. 2028 is the average target date for RE100 members to achieve 100% renewable electricity, and one in three are already over 75% toward their goal.

Power to the people

A major feature of 2019 has been a marked increase in public concern around climate change, partly spurred on by the massive upsurge in climate activism - although the increasing occurrence of extreme weather events is also undoubtedly a factor.

It is a reflection of heightened public concern that climate change charity Possible (formerly 10:10 Climate Action) was selected by *The Times* newspaper as one of the three charities for its Christmas 2019 appeal. Possible focuses on tangible actions where the public can have an impact. On transport its focus is on "changing how we travel - swapping cars for public transport and active travel, planes for trains - and electrifying everything".

Possible has a strong track record of success. As 10:10 it originally focused on helping people and organisations to reduce their carbon emissions by 10% in 2010. By uniting people around a simple short-term target, 10:10 aimed to demonstrate public commitment to action on climate change and influence politicians. In 2010 Cameron and Clegg pledged to cut central government's carbon by 10% in 12 months - a target which they not only met but exceeded, achieving 14%.

There is no doubt that once the public are properly engaged incredible change is possible. The Jubilee 2000 "Drop the Debt" campaign to cancel third world debt by 2000 is one of the most successful campaigns of recent times. Over 40 countries participated, and it resulted in the cancellation of more than £100bn of debt. This is the kind of public mobilisation we need now for tackling the climate emergency.

Mission Possible?

As we head into 2020, COP26 will keep climate change high on the political agenda. Visible and credible action to put the UK on track for its net zero target will be critical to its ability to be an influential host. Climate change must not be left to the vagaries of day to day politics. This is an issue which must transcend politics. Our priority must be to focus on what unites us not on what divides us. The clock is ticking. We must look for common ground.

The level of engagement required across all parts of society is comparable to a major war effort, but the difference here is that there is no external enemy, rather a very real and present danger that ultimately threatens all of life of earth. Climate change is asking for levels of human ingenuity, solidarity and empathy on a scale which has never been seen before. We need to see this crisis as an opportunity to be the best we can be. ■

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CLAIRE HAIGH

The road to net zero requires big changes

We must avoid wrong turns on the road to net zero. Fundamental changes will be needed to achieve this target by 2050, or sooner

Transport has become the largest emitting sector of the UK economy accounting for 27% of greenhouse gas emissions in 2017.

The Committee on Climate Change has highlighted some specific issues to be addressed. The ban on conventional diesel and petrol vehicles must be brought forward. Incentives to encourage the purchase of cleaner vehicles need to be strengthened. Low carbon solutions are needed for heavy duty vehicles and HGVs. Strategies are needed to reverse the decline in bus use and encourage greater use of walking and cycling. International aviation and shipping should be formally included in Climate Change Act targets.

The CCC has been clear, however, that more fundamental changes will be needed. For example, it wants Treasury to explore road pricing as part of its work to develop a fair funding pathway to net zero.

To achieve the net zero target the changes we will need to make to our economy are so profound that the way we live our lives in 2050 will be unrecognisably different to today.

This is the prism through which to view the forthcoming Transport Decarbonisation Plan. Transport is a microcosm of the whole economy, and inextricably linked to every other sector. The principles applied to decarbonising transport need to be consistent with the decarbonisation of the UK economy as a whole in an interdependent world.

Reducing energy demand

The first imperative is to reduce energy demand. The International Energy Agency describes demand reduction as "the first fuel". Energy demand reduction supports all key goals of energy policy - security, affordability and sustainability.

Current UK Government policy as articulated in Clean Growth Strategy, Road to Zero and Future of Aviation, however, assumes that demand for travel will grow. Transport is currently 98% dependent on fossil fuels. The primary focus of government policy is to reduce use of fossil fuels by more efficient end use technologies and changes in the fuel source to electrification and biofuels.

Whilst it is of course essential to improve efficiency and switch to cleaner fuels, there are major problems with an approach that focuses purely on supply side measures to the exclusion of demand side measures. Emissions have remained at a similar level since 1990 due to rising demand for car and van travel and increasing emissions from domestic aviation and shipping. Electric vehicles do nothing to address congestion which greatly worsens pollution and are likely to reduce the cost of motoring and further increase traffic.

Nearly two-thirds of car trips are single occupancy

Reducing the need for and extent of individualised car ownership will be essential. Car is used for 61% of trips and nearly two-thirds of car trips are single occupancy. Switching to more sustainable modes and higher vehicle occupancy must be at the heart of improving efficiency. Modelling for the Department for Transport's Future of Mobility: Urban Strategy shows that traffic could grow by 55% by 2050 if ride sharing fails to take off. This growth could increase to 71% if self-driving vehicles widen access to mobility and allow passengers to use their time more productively.

Taking a systems approach

A whole systems approach is needed. The decarbonisation of transport cannot occur without changes to the wider economy. Professor Nick Eyre of the Environmental Change Institute in Oxford argues that delivering a secure, affordable and sustainable energy system will require an energy transition on the scale of the industrial revolution. 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 what human activities they enable and support.

Individual choices cannot be considered separately from the wider social, economic and technical system in which they are embedded. Energy use in a car-dominated system of personal transport, for example, depends not just on technological features of the car but also occupancy rates, performance of other modes, land use planning, road infrastructure, regulations governing car use, wider cultural norms etc.

The wider system of taxation, incentives and fiscal measures is of fundamental importance. Wherever possible external costs should be internalised. Price signals should incentivise consumers to lower their carbon footprint by

"Reducing the need for and extent of individualised car ownership will be essential"

making lower carbon choices. Focus should not only be on environmental taxes but also the consequences of the fiscal system as a whole for outputs relevant to decarbonisation.

The result of repeated failures of road taxation to cover externalities is that we over consume roads and purchase of cleaner vehicles has been lower than forecast. The fuel duty freeze since 2011 has led to 4% more traffic and an additional 4.5 million tonnes of CO_2. Vehicle Excise Duty should be used more effectively to incentivise the purchase of lower emissions vehicles. Demand management measures including road pricing need to be at the heart of decarbonising transport.

Ensuring a fair and just transition

We must ensure a fair and just transition. More than half the emissions reductions needed will require people to make major changes to how they live their lives. Scotland has set aside £3bn for a Green New Deal. In their new report Putting People at the Heart of the Green Transition, IPPR and WWF argue for a Green New Deal for the rest of the UK.

The Treasury's review into how the costs of the transition to a net zero economy by 2050 can be funded and distributed fairly will be a welcome step towards ensuring that the impacts on businesses and households are properly assessed. Procedural fairness is also key. Climate Assembly UK, commissioned by six cross-party House of Commons Select Committees, will play an important role in finding solutions which are equitable and have public support.

It is important to design policies in a way that mitigates unintended consequences and ensures a fair distribution of costs and incentives. A study by the Joseph Rowntree Foundation, Green taxes and charges, highlighted that some environmental taxes can be regressive. Their study showed that taxes on fuel for cars, however, are not in aggregate regressive because poorer households are less likely to have a car.

Greener Journeys research demonstrates that the freeze in fuel duty has been damaging for low income households without a car, causing up to 200 million fewer bus journeys and 60 million fewer rail journeys. There is a clear link between access to public transport and levels of deprivation. A 10% reduction in public transport connectivity is associated with a 3.6% increase on social deprivation.

Empowering local leadership

We need a vision for the future which can inspire local decision makers to create places free of congestion and pollution. Congestion is not just a constraint on growth it also dramatically worsens emissions. In nose to tail traffic emissions increase up to fourfold.

Congestion Reduction in Europe: Advancing Transport Efficiency (CREATE) demonstrates the benefits of moving away from "car dominated" policy perspective to a "place-based" perspective, with greater emphasis on public realm, street activities and traffic restraint. Local leaders should be empowered and supported in moving to a strategy of "avoid, shift and improve": avoid individual motorised transport; shift to public transport, cycling or walking; and improve efficiency and reduce total emissions.

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. A more joined-up approach to transport and housing would encourage more high density housing in locations well served by public transport. New developments in urban centres well connected by public transport can stimulate 50% more economic growth than similar developments located at the fringe, whilst dramatically reducing congestion and pollution.

A reform of appraisal is needed. CREATE demonstrates that the absence of economic values for place-based enhancements means that existing conditions favour car-based policies. The National Infrastructure Commission has highlighted that existing appraisal methods may distort choice of scheme, leading to 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.

Raising international ambition

Finally, we must raise levels of international ambition. One area that urgently calls for greater leadership and cooperation in international aviation and shipping emissions (IAS). The CCC has highlighted that aviation is likely to be the largest emitting sector in the UK by 2050, even with strong progress on technology and limiting demand. Formal inclusion of IAS in the UK's net zero target

Aviation is likely to be the largest emitting sector in the UK by 2050

would send a strong signal to the rest of the world. It would complement agreed international policies and should not be seen as a unilateral approach to reducing emissions in these sectors.

COP26 provides the UK with an opportunity to lead by example and promote greater international ambition and cooperation. In relative terms the UK has a strong track record. Between 1990 and 2017 the UK has reduced emissions by 42% whilst growing the economy by two-thirds. The UK has been first major economy in the world to legislate to end its contribution to global warming by 2050. Whatever the outcome of the election, the next government will want to keep UK in the vanguard on this agenda. ■

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CLAIRE HAIGH

Are we moving in the right direction?

TfSE's new transport strategy, the Scotland's pro-bus agenda and a national debate about road charging are all signs of new thinking

The contours of the new citadel are coming into view, but it is not yet clear how we will get there. There is a growing awareness of the kind of towns and cities we want to live in although we are perhaps clearer about what we don't want. As mayor of Munich Hans-Jochen Vogel presciently concluded in 1972: "The car is murdering our cities."

We learn to adjust our course through trial and error. But along the way we may find some invaluable guides. CREATE (Congestion Reduction in Europe: Advancing Transport Efficiency) is one such guide. The project studied over a period of more than half a century how major cities in Western Europe have tackled growing car use and congestion. It demonstrates how different policy perspectives shape cities and provides an invaluable new framework for thinking about how we plan for our towns and cities.

Historically CREATE identifies three distinct policy perspectives. The "car orientated city" perspective is characterised by road building, car parking, lower housing densities and decentralisation. The "sustainable mobility city" is defined by a greater orientation towards public transport, cycle networks and road-space reallocation. The "city of places" represents a shift in emphasis to public realm, street activities, traffic restraint and mixed-use developments.

The disbenefits of the "car orientated city" become painfully more apparent by the day. Air pollution largely from road traffic is linked to an estimated 40,000 early deaths a year, even damaging unborn children through placentas. Rising demand for car and van travel is the central cause of increasing carbon emissions from transport and congestion, which is major drain on the economy. Car dominated sedentary lifestyles are a major factor in our obesity epidemic and have exacerbated the growing loneliness epidemic. Damage to public transport networks has heightened levels of deprivation.

From 'predict and provide' to 'decide and provide'

CREATE was a major inspiration for the transport strategy produced by Transport for the South East (TfSE), the new sub-national transport body for the South East of England. The consultation on this strategy was launched last week.

Traffic is forecast to grow in the South East

TfSE makes clear in its draft strategy that it wants to move away from the "predict and provide" ethos which has locked in car dependency and all the attending negative impacts. Instead TfSE wants to "decide and provide", proactively choosing a preferred future. TfSE wants to foster the kind of economic growth that will genuinely improve the quality of life for South East residents. Not growth at any cost.

The South East is responsible for 12% of UK carbon emissions, and several local authorities in the South East have declared climate emergencies. The South East also has several air quality management areas in place. Despite being home to some of the most prosperous parts of the UK, the South East also contains some significant areas of deprivation. There is a clear link between public transport access and levels of deprivation - as evidenced by contrasting, for example, Woking and Guildford with their high frequency train services into London with some of the more deprived less well-connected coastal communities.

The Department for Transport has forecast that traffic in the South East will grow by 15% by 2050. TfSE describes this as an unconstrained outcome which is neither realistic nor sustainable. Through analysing current trends TfSE has modelled different future scenarios and its recommendation is for "a sustainable route to growth". It highlights the risk of various factors that could worsen road congestion: for example, new technologies could tempt people away from walking, cycling and public transport; greater use of internet shopping could generate more congestion from freight traffic.

TFSE has utilised modelling to understand how and where the transport network will see future strain. However, rather than simply expanding the network, TfSE shows how this congestion could be alleviated by investing in attractive public transport alternatives and developing integrated land use planning policies to reduce the need to travel. Importantly it shows how the adoption of emergent technologies could be used to implement significant demand management policies, such as paying for road use on a 'pay as you go' basis.

"Alternative fuels will not solve congestion .. the 'murdering of our cities' would continue"

Putting sustainable transport at the heart of decision making

In its embrace of sustainable transport, the Scottish Government is demonstrating real leadership. Last month the Scottish Parliament voted unanimously to commit Scotland to net zero emissions by 2045 and to a target of 75% reduction by 2030. In *Protecting Scotland's Future*, the Scottish Government sets out a programme for all aspects of society and parts of government which puts "sustainable transport at the heart of decision making".

The Transport Bill which passed last week was a big win for sustainable travel. Importantly the Bill included provision for a workplace parking levy in spite of strong opposition from some MSPs, councils, businesses and consumer groups. It is worth noting that the Nottingham workplace parking levy scheme, which is the inspiration for Scotland's workplace parking levy , was similarly contentious before it was implemented but is now widely seen as a success and raises £9m a year.

Transport accounts for 37% of Scotland's greenhouse gas emissions, two-thirds of which are produced by road transport. Transport Scotland is currently consulting on its National Transport Strategy 2 (NTS2) which demonstrates a clear break with the past in that it puts buses at the centre of policy. Whilst buses are the backbone of Scotland's public transport system, accounting for 75% of trips, over the past decade patronage has declined by 20%.

Transport Scotland is determined to reverse this trend and has pledged to invest £500m in improved bus priority infrastructure to tackle congestion and reduce emissions. NTS2 includes plans to reallocate road space on parts of the motorway network to high occupancy vehicles; to accelerate the transition to zero emission buses; and a target for zero or ultra-low emission city centres by 2030.

NTS2 emphasises that not taking steps to effectively manage demand for car use is no longer an option. Key indicators are going the wrong in the wrong direction. Trips by car and van are rising, and single occupancy trips are on the increase. NTS2 highlights the risk that autonomous vehicles could well exacerbate these trends and worsen congestion. Another issue is that the limited supply of affordable city centre housing has led to more suburban areas and increased traffic volumes.

Driving change: Scotland's first minister, Nicola Sturgeon

"In its embrace of sustainable transport, the Scottish Government is demonstrating real leadership"

Maximising the benefits of bus

NTS2 sets out a vision for transport in Scotland which promotes equality, improves health and wellbeing, helps the economy to prosper and takes action on climate change. Buses deliver on all these objectives.

A 10% improvement in bus connectivity is associated with a 3.6% reduction in social deprivation. Increasing public transport use improves social cohesion and helps to tackle loneliness. A third of people in the UK have deliberately caught the bus to have some human contact. Commuting by bus gives half the weekly recommended exercise.

Investment in bus supports jobs, UK manufacturing and is key to unlocking the benefits of new housing. Bus commuters generate £64bn in goods and services. 400,000 bus commuters are in better more productive jobs as a direct result of their bus service. 80% of urban buses sold in the UK are built in the UK compared with just 13% of new cars. Developments in urban centres with good bus links can stimulate 50% more economic growth.

Buses are key to reducing emissions and congestion. In nose-to-tail traffic emissions from vehicles increase up to fourfold. A modern diesel bus produces fewer emissions than a modern diesel car despite having 15 to 20 times the carrying capacity. Last year 4.2% of new buses in the UK were zero emission at the tailpipe compared with just 0.6% of new cars.

Breaking the dominance of the car

Alternative fuels will not solve congestion. Even if all cars were electric and powered by renewables, the "murdering of our cities" would continue.

Last week the Transport Select Committee announced it was kickstarting a national debate about road pricing. This debate has been largely avoided for more than a decade since Labour's road pricing plans were abandoned. But since then we've had the five hottest years on record and climate change has soared up the agenda. Some form of road pricing is surely inevitable, although political courage will be needed.

The alarming increase in extreme weather events means that business as usual won't cut it. It will take more than changing how we pay for road use. The change we need is systemic.

We need to reform transport funding and governance so that cities can plan for housing, transport and jobs on an integrated long-term basis. A wholesale reform of appraisal is needed, as existing conditions favour car-based policies and investments. Future economic growth must be decoupled from damaging environmental and social consequences. Regardless of how far we reduce emissions, however, our cities will still need to adapt to the changes already underway in our weather systems.

The city of the future will need to be a fortress, one that both mitigates climate change and adapts to its unavoidable impacts. Only a whole new way of thinking will get us there. ■

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CLAIRE HAIGH

You can't be green and reduce fuel duty

As the UK prepares to host COP26 in Glasgow next year it is important that it matches its fine words with concrete actions

Last week it was confirmed that the UK will host the COP26 climate change summit in Glasgow next year. Huge responsibility now rests on British shoulders. This is a pivotal event which will set the tone for the world's future. The UK must continue to show the international leadership that resulted in the first ever legally binding Climate Change Act in 2008 and in parliament passing legislation to commit the UK to net zero emissions by 2050.

Net zero by 2050 is an ambitious feat which will require significant efforts from industry and the public, as well as clear and unambiguous investment signals from government. Government must now match fine words with concrete actions.

It is disappointing, therefore, that there was so little focus on climate change in the recent spending review, despite the chancellor's references to an "infrastructure revolution" and "cleaner energy, greener transport" in his speech to parliament. It is also very concerning that briefings in the media in August suggested that Number 10 was looking at cutting fuel duty in an emergency pre-election budget, and that last week transport secretary Grant Shapps warned consumers that government wants to end the grant for electric cars.

The Committee on Climate Change's 2019 progress report shows that transport is "significantly off track from the cost-effective path" for meeting the UK's emissions targets. Domestic transport is the largest emitting sector in the UK and is the only sector to have increased emissions over the last carbon budget, an increase which is largely the result of slowing efficiency gains and rising demand for car and van travel.

Incentivising cleaner vehicles

In its 2019 report, the CCC highlights that necessary progress has not been made on standards for new cars and vans, nor on strengthening incentives to purchase cleaner vehicles. Although new car emissions fell over the period 2009 to 2016, over the last couple of years this trend has reversed. In 2018 the average CO_2 intensity of new cars rose by 2.9%. There has been a shift to larger vehicles which now represent 31% of new car sales compared with 21% in 2010.

There is clearly much more that should be done to incentivise take up of cleaner vehicles. The government's current target of no new conventional diesel or petrol cars and vans by 2040 has been widely criticised as not ambitious enough. The CCC has recommended the target be forward to 2030-35. There are also significant barriers to the uptake of ultra-low emissions vehicles which need to be addressed.

"Net zero by 2050 is an ambitious feat which will require significant efforts"

Cost is a major barrier, which is why incentives are so important. The scrapping of the grant for plug-in hybrids has led to a sharp decline in sales. Latest SMMT figures for August show plug-in hybrids down by -71.8% to just 907. The grant for electric cars has been reduced from £4,500 to £3,500 but SMMT figures still show fivefold increase in zero emission vehicle uptake in August. This underlines the importance of retaining the grant for electric cars. Lack of charging infrastructure is another barrier. Electric vehicles have grown at a compound rate of 100% since 2012, but charge points have only grown at 44%.

There is considerable scope for reducing emissions through the purchase of more fuel-efficient models, but current fiscal incentives are not sufficient. For example, Vehicle Excise Duty could be used more effectively. It currently only accurately applies to the full spectrum of fuel types and vehicle emissions in the first year, and because it is wrapped up in the purchase price customers may not really notice it. Government should develop a strategy to use VED and other incentives to drive the purchase of lower emissions vehicles. This strategy should include consideration of post sales VED and the second-hand market.

Encouraging behaviour change

One of the most striking conclusions in the recent House of Commons Science and Technology Committee's assessment of Clean Growth, is that "in the long term widespread personal vehicle ownership is not compatible with significant decarbonisation".

The committee was critical of the fact that government efforts have been focused on reducing exhaust emissions and increasing sales of low emissions vehicles rather than delivering a low-emissions transport system. It recommends that government should actively promote public transport, walking and cycling, and reduce the cost of public transport relative to car use. For example, the annual increase in fuel duty should never be lower than average increases in bus and rail fares. Government should also encourage more vehicle usership rather than ownership. The RAC Foundation reveals that the average car is parked 96.5% of the time, and only used 3.5% of the time.

Many academics and specialists argue that

"Since 2011 fuel duty has been frozen. This has had serious unintended consequences"

electric cars will not solve the decarbonisation problem. Professor Jillian Anable of Leeds University describes car use as a "massive blind spot on government policy" and has called on government to devise a strategy allowing people to have a good standard of living without needing a car. The strategy of meeting demand by increasing road space needs to be replaced by a strategy to reduce travel demand. Christian Wolmar has questioned whether in the long run electric vehicles will make even the slightest contribution "just as horses were still on the road in my youth, the combustion engine will be around for longer than policy makers think".

We could be storing up problems for the future. Manufacturing accounts for as much as 80% of electric vehicle lifetime emissions depending on the source of electricity used for charging. There are some serious issues regarding the production of batteries. Batteries require a lot of energy to produce and are very difficult to dispose of. There are also no significant lithium or cobalt mines in Europe leaving many long-term supply issues unanswered. Government should not rely on a single technology. Hydrogen may yet prove cheaper to produce and less environmentally damaging.

Increasing fuel duty

One of the most effective ways to incentivise the take up of cleaner vehicles and to encourage behaviour change is to increase fuel duty. Many road users are paying too little road tax as they don't cover their external costs. In addition to greenhouse gas emissions external costs include congestion, local air pollution, accidents, noise and harm to landscape and biodiversity. Department for Transport research in 2010 (the last year that this data was published) showed that road users failed by a considerable margin to cover their external costs.

The fuel duty escalator was first introduced in 1993 as an environmental tax, to stem the increase in pollution from road transport. However, the challenge in factoring external pollution costs into the price of motoring is that the public already feel that they are paying too much in road taxation. Since the fuel duty protests in 2000, and the referendums on congestion charging in Edinburgh and Manchester, levying additional charges on road users has become politically toxic.

Since 2011 fuel duty has been frozen. Greener Journeys research has demonstrated that this has had serious unintended consequences. As a result of the freeze the price of fuel at the pump has been cut by 13% in real terms. The direct consequences of this have been a 4% increase in road traffic; an additional 4.5 million tonnes of CO_2; an additional 12,000 tonnes of harmful NOx and 816 tonnes of PM10s; and up to 200 million fewer bus journeys and 60 million fewer rail journeys.

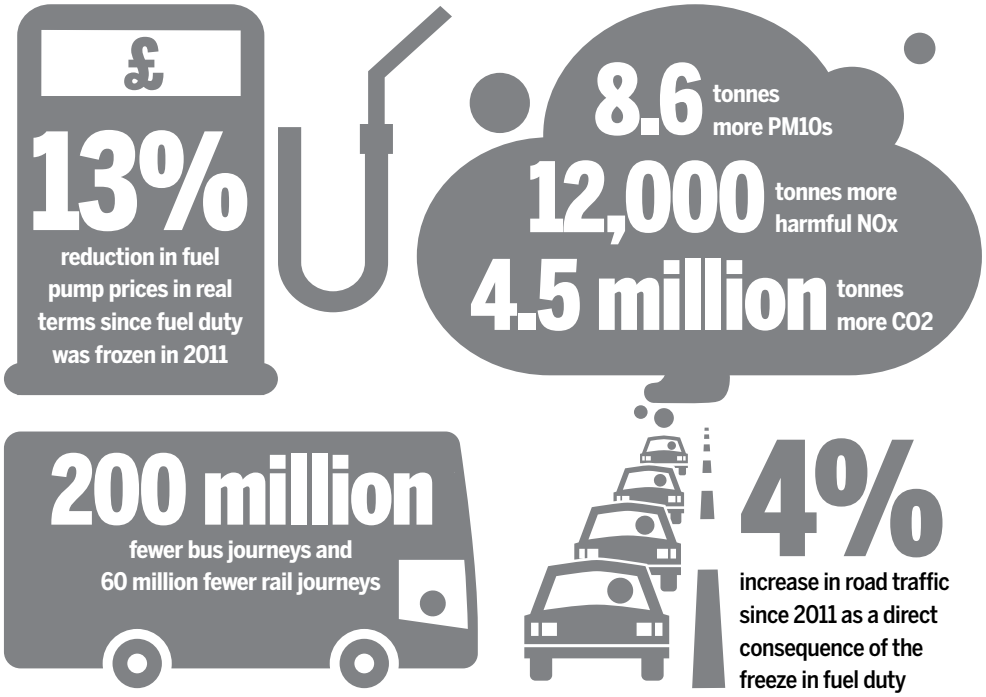
The additional impact of congestion arising from the growth in traffic means that these figures underestimate the increase in CO_2, NOx and PM10s. Emissions from road traffic are increased by approximately 40% as a result of congestion. The decline in bus use is also likely to be even greater because of the increase in congestion. Congestion has been causing bus speeds to fall by 10% every decade, causing bus patronage to all by 10-14%

Sending the right signals

The aim of public policy around climate change should be to ensure that wherever possible external costs are internalised. Price signals should incentivise consumers to lower their carbon footprint by making lower carbon choices. The result of repeated failures of road taxation to cover externalities is that we over consume roads. Increased demand for car and van travel is one of the main reasons transport emissions are rising. Whilst electric vehicles have a role to play in the decarbonisation of surface transport they do nothing to address the central problem of road transport: congestion in urban areas and on major routes, which greatly worsens pollution and will only be addressed by some form of road pricing.

As the UK prepares for COP26 it is more important than ever that it keeps its own house in order. Any suggestion that the government might cut fuel duty undermines its stated ambition to be the "greenest government ever" and dramatically limits its options. The freeze in fuel duty since 2011 has cost the public purse more than £50bn. This dwarfs the £400m announced last week to develop infrastructure points for electric vehicles.

The cost of freezing fuel duty...



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CLAIRE HAIGH

How can we turn this talk into action?

Decision makers are waking up to the important role that buses can play. We must make the most of this window of opportunity

Everyone is talking about buses. Could it be that we have a window of opportunity to do something transformative for our most essential mode of public transport?

Prime minister Boris Johnson has declared that he will "begin as a matter of urgency the transformation of local bus services". He wants local leaders to make the most of the powers in the Bus Services Act. He wants local partnerships between the private sector, which operates the buses, and a public body, which coordinates them. He wants "higher frequency, low emission or zero emission buses, more bus priority corridors, a network that's easier to understand and use".

Echoing the National Infrastructure Commission, he has said that we need to improve "services within cities, not just between cities", "services that mean people don't have to drive". He wants to give communities a greater say over changes to transport, housing, public services and infrastructure that will benefit their areas and drive local growth. The NIC previously recommended that the next big wave of infrastructure funding should focus on improving transport within rather than between regions, and that local transport authorities outside London should have stable, devolved budgets to invest in transport, employment, housing and growth.

It is reasonable to take what the PM says on local transport at least at face value. His time as mayor of London has clearly shaped his vision. We've possibly never had a prime minister more in tune with the vital role that buses play in supporting the economy, reducing congestion and pollution, and providing essential access to work, education and opportunities for all in society. Do we finally have a prime minister willing to support a national bus strategy?

"I will begin as a matter of urgency the transformation of local bus services"
Boris Johnson, July 27

Boris Johnson

Towards a national bus strategy

Calls for a national bus strategy have been growing from MPs across the political spectrum. It was indeed the Transport Select Committee's central recommendation following its recent inquiry into the health of the bus market. The Committee on Climate Change has highlighted the urgent need for a bus strategy to support the decarbonisation of surface transport. The need for a bus strategy is now a theme that comes up regularly in the national media.

There may be different views about the shape and form a bus strategy should take, but there is little disagreement with the principle that something must be done for buses. So why isn't there a strategy for our predominant mode of public transport, when all other forms of transport, including even walking and cycling, have national strategies? Part of the reason may be that it could be challenging to develop a buses strategy.

Investment in bus has the potential to deliver on a wide range of government objectives across housing, communities and local government, environment, business and industrial strategy, work and pensions, health, education, trade and investment. Ownership of a national bus strategy cannot therefore sit within transport alone. A meaningful bus strategy will require direct input from several departments and is likely to be something the Cabinet Office would be best placed to take forward.

A national bus strategy will also require the input and involvement of local decision makers at all levels from across the public and private sectors. Bus is a quintessentially local product. Sub-national Transport Bodies, Combined Authorities, Local Enterprise Partnerships and all other tiers of local government will need to be involved in the development of a bus strategy, as well as bus operators, bus manufacturers, major employers, Business Improvement Districts and town centre managers. The list goes on.

The scale of the challenge should not be an impediment, however, given the value the bus to society delivers. The primary objective of a national bus strategy should be to create a framework to maximise the wider social, economic and environmental benefits of bus.

"Turning the tide will require a major refocusing of government priorities"

Maximising the benefits

A national strategy focused on maximising the benefits of bus would support central government priorities such as the Industrial Strategy Grand Challenges: Clean Growth and Future of Mobility, the Clean Air Strategy and the Road to Zero, as well as efforts to tackle the housing crisis, to reinvigorate our towns and city centres, even to tackle loneliness. It would strengthen local economies, reduce pollution and congestion, tackle social exclusion and build more cohesive communities.

A national strategy focused on maximising the wider benefits of bus would support devolution by providing local transport authorities with the necessary funding and powers to invest for inclusive and sustainable growth in their local areas. It would help decision makers identify the costs, benefits and risks associated with different interventions. It would provide a framework for local decision makers to make the most of the powers in the Bus Services Act to maximise the wider benefits of bus.

Investing in bus networks creates jobs, improves productivity and supports UK manufacturing. A 10% improvement in bus journey times would mean 50,000 more people in work. Some 400,000 bus commuters are in better more productive jobs as a direct result of their bus service. 80% of urban buses sold in the UK are built in the UK, compared with just 13% of new cars. A bus strategy would enhance opportunities for UK manufacturing. The challenges currently faced by Wrightbus bring this into sharp focus.

Buses are key to unlocking the benefits of new housing. New developments in urban centres well connected by mass transit can stimulate 50% more growth than similar developments at the fringe. Bus investment delivers significant returns for local economies. The bus facilitates 29% of city centre expenditure, and 22% of town centre expenditure. Expenditure on bus capital projects generates £4.90-£8.10 of wider social, economic and environmental benefits for every £1 invested.

A strategy focused on maximising the benefits of bus would ensure that buses play a central role in reducing emissions. Air pollution has been linked to 40,000 early deaths a year. A modern diesel bus produces fewer harmful NOx emissions overall than a modern diesel car despite having 15 to 20 times the carrying capacity. Buses are leading the way on the road to zero. Last year over 80% of new buses registered in the UK had Low Carbon Emission Bus certification and 4.2% were zero emission at the tailpipe, compared with 0.6% of pure battery electric cars.

Bus manufacturers like Wrightbus benefit from strong order books

A bus strategy would protect the vital role buses play in creating a fairer and more inclusive society. A 10% improvement in bus service connectivity is associated with a 3.6% reduction in social deprivation. Bus travel supports education, training and employment and provides access to opportunities for all. More than 50% of students over 16 are frequent bus users. Bus also strengthens the fabric of society. Two thirds of bus users say that the bus creates strong community ties. A third of people in the UK have deliberately caught the bus to have some human contact.

Turning the tide

A national strategy for buses will need to focus on addressing factors contributing to the decline in patronage. Some of these factors, such as long-term structural changes in the economy and labour market, increases in online shopping and other disruptive changes, may be beyond the scope of transport policy. However, factors such as rising congestion, bus journey times and bus fares; increase in private hire vehicles, and the relatively low costs of motoring compared to public transport will need to be addressed.

If a national bus strategy is to be effective in reversing the decline in bus patronage it must necessarily complement wider transport policy. Bus policy cannot sit in isolation to policies for roads, parking, traffic management and fiscal measures. Building new roads will not reduce traffic congestion, we must make better use of existing road capacity. A bus strategy will require demand management measures to reduce traffic such as workplace parking levy and road pricing.

Turning the tide will require a major refocusing of government priorities. Currently the price signals point the wrong way. The freeze in fuel duty since 2011, for example, has caused a 4% increase in traffic, 200 million fewer bus journeys, 4.5 million tonnes of carbon emissions and 12,000 tonnes of NOx. The 2018 RAC Annual Report on Motoring has shown that drivers' dependency on the car has increased, with 33% more dependent on their cars and a quarter of these blaming a deterioration in public transport.

A national bus strategy will need to help the sector ride the wave of change in the new fast evolving urban mobility landscape. The emergence of countless new players providing new dynamic on demand services brings both challenges and opportunities for traditional bus services. In a radically changing environment public transport needs to be not just operations-cultured but needs to bring new products and services to market that will enhance customer experience. The strategy will need to create an environment where innovation can thrive.

The bus presents a major underexploited opportunity to reduce emissions, grow our economy and support everyone in our society. Decision makers at the highest level seem to realise this. We must make the most of this window of opportunity. ■

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CLAIRE HAIGH

Passenger transport brings us together

If government is serious about tackling loneliness, it must support bus services and encourage the switch from car to public transport

Over the past year there has been heightened focus on the need to tackle loneliness which has become a corrosive social epidemic. The issue was identified as a priority by prime minister Theresa May, and a cross-departmental working group was established with transport one of the key policy areas. Increased focus on loneliness is likely to be seen as part of her legacy.

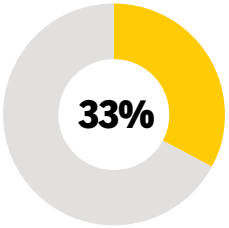
The government's commitment to tackling loneliness is of course welcome at a time when many people feel that communities are at risk of fragmenting as a result of an ageing population, more people living alone and cuts to social funding. However, though well-intentioned the strategy barely scratches the surface of the problem, and potentially powerful interventions are massively under exploited. Public transport - and bus services in particular - fall into this category.

Putting a spotlight on loneliness gives a whole new urgency to the need to reverse cuts to bus services. The health risks are well documented. Lonely people are more likely to suffer from depression, dementia, diabetes, heart conditions and strokes. More than nine million adults in the UK are always or often lonely. The sense of isolation and exclusion resulting from people being cut off is felt particularly acutely in rural areas. As Bus Users UK have highlighted in their recent report, *Rural buses: reversing the decline*, we must take action now before it's too late (PT212).

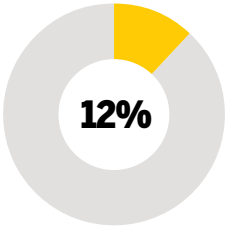
But the problem of loneliness goes much deeper than cuts to funding. A report for the British Red Cross and Co-op, *Trapped in a Bubble*, revealed that the causes of loneliness are often complex, multi-layered and mutually reinforcing: a combination of personal, community and UK-wide factors. On a personal level, the importance of having a role and identity is a recurring theme; aspects of one's community such as inadequate transport infrastructure can contribute to feelings of disconnection; as can social norms such as the perceived inappropriateness of talking with strangers.

BUSES: A POWERFUL TOOL FOR TACKLING LONELINESS

Source: ComRes research for Greener Journeys



A third of people in the UK have deliberately taken the bus at some point to have some human contact



Over one in 10 admit to having spoken to a stranger in the past month because they've had no one to speak to

Reduced opportunities for face-to-face contact with others are a major cause of loneliness, with increased time spent online exacerbating the problem.

Millions are experiencing isolation as changes to lifestyles and working patterns, and the growing use of technology, erode the opportunities for human contact. People are finding that a network of digital connections is no replacement for real human interaction. At the same time, they may be losing the skills or opportunity to forge those interactions. Research for Greener Journeys has shown that of those who feel lonely, almost a third (30%) say this is because they have no one to talk to at home.

It follows that a central part of the solution to loneliness must include increasing opportunities for face to face contact. Sometimes the smallest gestures can make the most difference. A study by Gillian Sandstrom and Elizabeth Dunn has shown the surprising power of "weak tie" connections. They demonstrate that even social interactions with peripheral members of our social networks can contribute to our wellbeing. The Campaign to End Loneliness vividly demonstrates how social interactions in everyday life can make a big difference to ourselves and others.

No age group is immune from experiencing loneliness. Half a million older people in the UK go at least five or six days a week without speaking to anyone at all. There has been less recognition, however, of how acute the problem is amongst young people. The Marmalade Trust, a UK-based charity which began Loneliness Awareness Week, highlight this as a common misperception. Research for Greener Journeys has revealed that 75% of young people admit to being affected by loneliness, compared to 45% of those aged over 55.

That loneliness is particularly acute among younger people may be partly the result of increased time spent online. A survey of San Francisco State students by E Peper and R Harvey demonstrated that students who used their smartphones the most reported higher levels of feeling isolated, lonely, depressed and anxious. The researchers concluded that loneliness is partly a consequence of replacing face-to-face interaction with a form of communication where body language and other signals cannot be interpreted.

Author Jean M Twenge asks whether

"Travel is the single most important activity that brings total strangers into contact"

smartphones have destroyed a generation. He contends that post-Millennials are more comfortable online than out partying, and are safer, physically, than adolescents have ever been - "but they're on the brink of a mental-health crisis".

The experience of using public transport provides opportunities for social interactions, but connecting is not the norm.

Research for Greener Journeys has revealed that the bus can be a powerful tool for tackling loneliness. A third of people in the UK have deliberately taken the bus at some point to have some human contact. Over one in 10 (12%) admit to having spoken to a stranger in the past month because they've had no one to speak to, and a fifth of these (19%) have spoken to a stranger on a bus in the past month. Bus travel can help people to be more sociable, with nearly two-fifths (37%) of regular bus users saying that while travelling by bus they have spoken to someone they've just met. Two-thirds of bus users say that bus creates strong community ties.

However, despite the proven social benefits, connecting with strangers on public transport is still the exception not the norm. A study in 1978 by Milgram and Sabini concluded that the requirements of appropriate social behaviour on the subway are simple - the 'implicit rule' is that passengers are discouraged from talking to each other. More recently a similar study from Esther Kim at Yale University concluded that greatest unspoken rule of bus travel is that if other seats are available you shouldn't sit next to someone else. As the passengers repeatedly told her, "It makes you look weird."

Kim describes how people will go to extraordinary lengths to avoid each other on public transport. When all the rows are filled, and more passengers are getting aboard the seated passengers initiate a performance to strategically avoid anyone sitting next to them. These strategies include: avoiding eye contact with other people; placing a large bag on the empty seat; sitting on the aisle seat and turn on your headphones so you can pretend you can't hear people asking for the window seat; pretending to be asleep; putting your coat on the seat to make it appear already taken; lying that the seat has been taken by someone else etc.

37% of regular bus users saying that while travelling by bus they have spoken to someone they've just met

We have ample evidence of the benefits of connecting with others on public transport. Why don't we connect more?

In a fascinating study, *Mistakenly Seeking Solitude*, Nicholas Epley and Juliana Schroeder observe that although connecting with others increases happiness, strangers in close proximity routinely ignore each other.

Epley and Schroeder considered two possible explanations: either solitude is a more positive experience than interacting with strangers; or people misunderstand the consequences of distant social connections. Their study of commuters on trains and buses concluded that people tend to "mistakenly seek solitude". Participants reported a more positive (and no less productive) experience when they connected with strangers than when they did not - even though they had expected precisely the opposite.

In the second part of their study they explored why it was that people don't engage more. If connecting is more pleasurable than not, why don't people learn from their experiences and connect more? They considered two possible explanations: either they believe other people are not interested and that by not interacting they are being polite they; or, they have had previous negative experiences of connecting with strangers (negative experiences tend to be more memorable than positive experiences).

The study demonstrated that the former explanation is overwhelmingly more likely. People misread others' silence as disinterest and therefore do not engage in the very conversations that would correct their expectation. Epley and Schroeder observe that those who misunderstand the consequences of social interactions may not, at least in some contexts, be social enough for their own well-being.

Maximising the role of public transport

The biggest culprit in our loneliness epidemic would appear to be social norm. Yes, we need to challenge social norms and break down barriers separating people, but we also need to create more opportunities for face to face contact. One of the ways we will do this is by challenging another norm: our predominant mode of transport.

Travel is the single most important activity that brings total strangers into close contact with each other. Yet the vast majority of trips are by car, often with just one passenger, and rising congestion means that we spend hours stuck in traffic. Not only is this an incredibly inefficient use of road space, but it does nothing to improve social cohesion.

Public transport has a vital role to play in breaking down unhealthy social norms and providing opportunities for us to connect with each other. If government is serious about tackling loneliness, greater support for bus services and encouraging the switch from car to public transport should be its highest priority.

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CLAIRE HAIGH

New housing must consider transport

We need a joined-up approach to housing and transport, leading to developments that are well served by sustainable transport

There is little disputing the fact that Britain faces a major housing crisis and that an imbalance of supply and demand is one of the key drivers. The solution may seem obvious: build more homes. But unless we provide good public transport options alongside new housing, we risk increasing emissions and bringing our local roads to a standstill.

For decades new housing in Britain has been too car dependent, isolated and sprawling. The solution to our housing crisis has to be about more than just delivering numbers and targets. Sustainable public transport must be at the heart of solving this crisis. Moreover, integrating sustainable transport with the construction of new homes provides a practical means of delivering on many of the government's major policy priorities.

The government has set a target to build 300,000 homes per year from now to the mid-2020s. Higher density housing in places well served by public transport is a central part of the solution. Planning housing and sustainable transport together can support increased levels of housing delivery by making it easier to identify sites for new development. The provision of sustainable transport with new housing can also facilitate higher density development.

Since the global financial crisis, UK annual productivity growth has lagged behind that of the country's global competitors. The government's Industrial Strategy aims to increase the productivity and earning power of people throughout the UK. London School of Economics research shows that the location and density of new housing can help to drive stronger economic performance, especially when they are integrated with sustainable transport. When both housing supply and good connections between transport modes give people better access to jobs, productivity is improved. On average, a 20% increase in population within a locally bounded area will lead to a 1% increase in productivity within that same area.

Research for Greener Journeys also shows that such integrated development improves connections between homes and jobs through sustainable transport infrastructure and enables stronger job growth and productivity performance. Developments located in well-connected areas, with higher levels of accessibility, can generate up to 50% more positive economic impacts than development with lower levels of accessibility. These potential benefits can be eroded by between 8% and 12% due to the congestion effects associated with the increased resident population and broader economic activity it supports. Significant investment in sustainable transport is part of the solution.

The government's Clean Growth Strategy aims to cut UK emissions and improve air quality. In transport, one of the identified solutions is to encourage sustainable alternatives to car use. Sustainable transport enables population centres to grow, without overloading existing transport infrastructure or causing adverse environmental impacts. Royal Town Planning Institute research has found that improvements in connectivity, through better transport provision, greater density or both, play a critical role in reducing transport emissions, enhancing social inclusion and fostering more cohesive communities.

These findings echoed research for Greener Journeys showing that a 10% improvement in connectivity (by local bus services) is associated with a 3.6% reduction in economic, social and environmental deprivation as measured by the Ministry of Housing, Communities and Local Government's Index of Multiple Deprivation (IMD). Investment in sustainable transport also delivers excellent returns: every £1 invested in local bus infrastructure can deliver £8 in wider social, economic and environmental benefits.

Despite these potential benefits, most new

The government has set a target to build 300,000 homes per year

"For the new wave of house building, we must avoid repeating mistakes of the past"

housing sites in England still fail to integrate sustainable transport in any meaningful way. Recent research by KPMG, commissioned by Greener Journeys for the Transport Knowledge Hub, identifies some major barriers to integrating sustainable transport within new housing developments.

Statutory responsibility for local public transport, highways and housing is fragmented across Local Areas. Planning and delivery for local public transport and new housing too often operate in silos, with different authorities and teams responding to different priorities. As a result, their policies do not necessarily promote integration of sustainable transport with new housing.

A lack of certainty over long-term funding also prevents local areas from planning and investing strategically in local transport schemes that could transform new housing developments. Constrained local government revenue budgets and fragmented central government funding present challenges to local areas trying to undertake the strategic planning that could help deliver sustainable transport integrated with new homes.

National planning guidance does not provide local areas with enough clarity to promote effective planning for sustainable transport alongside new housing developments. For example, national planning policy provides limited support for prioritising bus and rail transport as alternatives to car-based development. National policy does not go far enough to encourage meaningful engagement between local decision-makers and local businesses, infrastructure providers and bus operators.

Existing developer contribution mechanisms are insufficient to fund strategic sustainable transport infrastructure. They are designed to mitigate the impacts of development impact, rather than capture the uplift in land values associated with investment in high quality sustainable development.

Decision-makers often do not have a full appreciation of the holistic benefits - economic, social and environmental - of integrated sustainable development and housing. Current appraisal approaches tend to focus on individual schemes rather than place-based programmes and consider a narrow range of benefits within the housing or transport market.

The design, pattern and location of new housing development mean that sustainable transport services are often unfeasible. Many new housing developments in England are built on the assumption that the car will be the primary mode of transport for residents. Where there are no alternative transport modes, developers need to provide significant space for car road use and car parking if the developments are to uphold value. The resulting design, pattern and location of housing development can make public transport services unviable for transport operators.

These barriers represent a missed opportunity to maximise the economic, social and environmental benefits of both private and public investment in sustainable transport and new housing. KPMG's study set out a call for action that would enable central and local government, transport operators and private developers to achieve better integration between sustainable transport and new housing. It can be distilled into three key reforms.

Firstly, government should make a clear commitment to promote sustainable transport as a means of realising the economic, social and environmental benefits of new housing. The UK's housing crisis has pushed up property prices and made it harder for people to move to areas with better job opportunities. Building hundreds of thousands of new houses is clearly part of the solution, but we need a place-based approach in order to optimise the economic, social and environmental returns on the investments made.

The forthcoming National Planning Policy Guidance should clarify expectations for sustainable transport provision with new development and provide local authorities with the necessary backing to put policy into practice. The potential benefits of integrated sustainable transport and housing development should be considered at the earliest stage of the plan-making process and appraised holistically in terms of their economic, social and environmental impacts when determining value for money.

The second key reform is that we need positive action from government, to enable local areas to invest and plan for local transport and housing on a more strategic basis. The government should consolidate the current capital and revenue funding for local transport and housing into longer-term, devolved budgets. Local areas would then be able more effectively to prioritise investment according to their strategic priorities, better align local funding with funding from developers and national agencies and deliver more effective sustainable transport solutions that can be fully integrated with new housing development.

More integrated funding would also support local areas in developing genuinely spatial plans, to ensure that housing is connected to existing sustainable transport networks and that new strategic infrastructure is tied in with a long-term vision and strategy for transport across the local area. Local areas should be given more resources for planning and the power to capture and retain the revenue funding needed to support fully the costs associated with plan-making and development management.

Finally, local areas and transport providers should work together more closely to ensure that sustainable public transport provision is designed-in from the outset. There are some early and important considerations that can be "make or break" for the provision of sustainable transport. Simple design principles, such as the provision of footpaths to bus stops, are not routinely considered in the development of new housing sites. New developments are often not strategically located to encourage the use of sustainable transport. Local Areas and transport providers should also work more collaboratively to deliver innovative and cost - effective sustainable transport solutions for new housing, such as digitalisation of information and payment systems, and new forms of demand-responsive transport.

For the new wave of house building, we must avoid repeating mistakes of the past. We need a joined-up approach to housing and transport, and to encourage the development of higher density housing in locations that are, or could be, well served by high-capacity sustainable transport such as bus and rail. The decisions we make now will determine the foundations we lay for our communities for generations to come. ■

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CLAIRE HAIGH

We need bold and ambitious solutions

Climate change is back on the political agenda and government must respond with radical new policies that achieve modal shift

We haven't got long. The five warmest years on record have occurred in the last 10 years. The incidence of flooding, drought, hurricanes and fires is increasing exponentially. The Intergovernmental Panel on Climate Change has warned of the extreme risks associated even with two degrees of global warming, and that we have a decade to get onto a safe trajectory to 1.5 degrees. Evidence of the planet warming is irrefutable.

The cross-party consensus that enabled the UK Parliament to pass the first ever legally binding Climate Change Act in 2008, with only three MPs voting against, is back and as strong as ever, with all our parliaments declaring a climate emergency. ministers have enthusiastically welcomed the Committee on Climate Change (CCC)'s recommendation earlier this month that the UK sets the target to be net zero by 2050.

It's fair to say that over the past decade the issue of climate change slipped down the political agenda. Politicians minds have been elsewhere as they struggled to deal with the economic crisis, the rise of extremism and some of the wider repercussions of globalisation. However, the schools strikes and climate change activism of Extinction Rebellion have emphatically brought the issue back to the fore - and helped focus all our minds on the greatest existential threat we face.

Whilst the UK accounts for only around 1% of global warming annually, as Greta has reminded us we have 200-year legacy of carbon emissions to account for. This puts us in a unique position. As the progenitor of the industrial revolution and associated use of fossil fuels, it is beholden on the UK to show the leadership internationally that our politicians say they want the UK to do.

Ministers are keen to emphasise - and reassure our young protesters - that we have made good progress. Since 1990, greenhouse gas emissions in the UK have fallen by 42%. However, there is no room for complacency. These reductions have been achieved thanks mainly to actions in the power sector. Going forward reductions will be much harder to achieve, with all other parts of the economy now required to deliver deep emissions cuts. We are not even close to being on track to meet existing carbon budget targets, let alone the CCC's recommended net zero target.

"We in the transport sector have a particular responsibility to act"

Greta Thunberg reminded us we have 200-year legacy of carbon emissions to account for

We in the transport sector have a particular responsibility to act.

Surface transport is currently the largest emitting sector of the UK economy accounting for 28% of UK greenhouse gases. Reductions have flatlined over the past decade. In recent years emissions from new cars have actually increased partly as a result of the switch from diesel back to petrol on account of the linking of local air pollution to 40,000 early deaths a year. Cheaper fuel prices combined with improved efficiency of vehicles have also encouraged people to buy larger vehicles. In 2018, SMMT recorded an increase in sales of SUVs.

Exactly 10 years ago this month Greener Journeys came into being. Our mission was to promote the carbon reduction benefits of modal switch: "If everyone switched just one car journey a month to bus or coach instead that would mean one billion fewer car journeys and a saving of two million tonnes of CO_2". Since 2009 we have built compelling evidence of the wider social, economic and environmental benefits of the bus. A 10% improvement in bus service connectivity is associated with a 3.6% reduction in social deprivation. Investment in bus infrastructure can deliver £8 for every £1 spent.

Over the past decade there has also been a revolution in clean bus technology. Not only does modal switch from car to bus deliver immediate carbon reduction benefits, but with more than 5,000 low carbon emission vehicles in operation, the bus sector has the greatest penetration of low carbon vehicles across all forms of road transport. Moreover, according to Low CVP analysis, buses are leading the way on the road to zero emissions. In 2018, 4.2% of the bus sector was zero emission at the tailpipe, (including 309 electric buses and 20 running on hydrogen fuel cells) - compared with the best ever monthly figure for the car

"There is a lot more that the public transport sector could and should be doing"

sector of 1% pure battery electric vehicles.

Along with the accelerated role out of electric cars and vans, and associated charging infrastructure, public transport must be a central part of the solution. As indeed must modal switch to other forms of sustainable transport including walking and cycling, car sharing, reducing the need to travel and improving the efficacy of delivery and logistics. Tackling congestion is an urgent priority if we are to deliver reductions in time. In nose to tail traffic emissions increase fourfold, a problem which has been greatly exacerbated by the sharp increase in delivery vehicles arising from the exponential growth in online shopping.

Government must introduce the right fiscal measures. Some form of road pricing will be unavoidable. Government must also empower local areas to improve the efficiency and environmental performance of their transport systems by providing regional authorities with secure, devolved, long-term funding, enabling them to plan and invest on a more strategic basis. Getting transport and land use planning right will be critically important. New housing developments must be well served by public transport if we are to avoid increasing congestion and emissions.

There are some important asks for central government. For example, the politically tricky issue of fuel duty must be addressed. Since 2011, the freeze in fuel duty (cut in real terms) has made the price of fuel at the pump is 13% lower than it would otherwise have been. This has caused there to be 4% more traffic, 4.5 million additional tonnes of CO_2, 12,000 additional tonnes of NOx, and up to 200 million fewer bus journeys and 60 million fewer rail journeys; and has cost the public purse more than £46bn.

Whilst the long-term solution to road transport's CO_2 and NOx output is to switch from fossil fuels to electric vehicles, continually reducing duty on petrol and diesel in real terms reduces the incentive to switch to electric vehicles. Moreover, reducing cost of driving compared with using public transport encourages people to drive more, increasing both pollution and congestion. At the very least fuel duty should be linked to inflation in future budgets. The money raised from future increases in fuel duty should be ring fenced and used to accelerate the roll out of electric vehicles and to encourage greater use of public transport.

Stagecoach operates nine BYD ADL zero emission electric buses in Guildford

Looking a little closer to home there is a lot more that the public transport sector could and should be doing.

Norman Baker was quite right to highlight in his last column for *Passenger Transport* that the sight of Greta travelling around Europe by train should be a wake-up call for rail companies, and that the public transport industry as whole should be using the window that has opened up to position itself as a central part of the solution to climate change. Not only would this demonstrate that bus and rail travel is a public good, but it clearly makes commercial sense for operators to use the agenda to promote modal switch from car (and plane) to their services.

There is currently a paucity of ambition on this agenda. If we want mass transit to be at the heart of carbon reduction - as well as central to tackling air pollution and congestion - then why aren't we calling for massive investment in the rapid roll out of zero emission zones powered by electric buses with entry restrictions on private cars? Surely that has to be as close to a silver bullet for reducing pollution and congestion as it gets?

Such a shift in policy would of course require a far greater scale of financial commitment to the bus sector from government than has ever been forthcoming. This is also sadly a very long way from where government policy is currently on air quality. The hierarchy set out in the guidance for Clean Air Zones directs councils to target older buses first, with cars only as a last resort. Whilst it is good that the air quality benefits of Euro 6 buses and retrofitting to Euro 6 standard have been recognised, there is still the very real risk that the current direction of policy on clean air will lead to fewer trips by public transport.

We should, however, be encouraged by developments elsewhere in government thinking. The principles set out in the government's *Future of Mobility Urban Strategy* include: "Mass transit must remain fundamental to an efficient transport system"; and, "Mobility innovation must help reduce congestion through more efficient use of limited road space". That feels like a signal that government could be willing to consider more radical pro public transport interventions. We must capitalise on this.

Given the scale of the existential challenge we face, only bold and ambitious solutions will suffice. If ever there was a moment to put modal switch from car to sustainable mass transit at the heart of government policy it is now. ■

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