



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 25th January 2020 to 27th November 2020.

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CLAIRE HAIGH



Electric vehicles won't be enough

Simply swapping petrol and diesel cars for electric ones won't hit our decarbonisation targets. Mode shift has a crucial role to play

► The prime minister has been under pressure for some time to demonstrate ambition on tackling climate change and to burnish the UK's credentials as host of the COP26 UN climate summit next year. Last week he finally launched his plan for a "green industrial revolution". Centrepiece of his 10 Point Plan was the announcement to bring forward the ban on sales of new petrol and diesel cars and vans from 2040 to 2030.

Let's not underestimate how significant this is as a statement of UK intent and a signal to the rest of the world. The PM had been under intense pressure from the car industry to set a later date, but in the end opted to set one of the earliest deadlines of its kind in the world. The UK is Europe's second biggest car market, and this sends a clear signal round the world that the UK means business. So to that extent a big tick in the box.

What would have made this an announcement a real game changer would have been if proposals for a national road pricing scheme had been included alongside the 2030 ban. It had been speculated ahead of the announcement on November 18 that Treasury had seriously been considering road pricing to replace diminishing receipts from fuel duty and other road taxation. Some £28bn was paid last year by motorists filling up cars, vans and lorries at fuel stations. Almost £6bn came from VAT on fuel, while another £6.5bn from vehicle excise duty.

However, road user charging has long

been regarded as politically toxic. Successive governments have feared a backlash from motorists. It seems that once again road pricing has been pushed onto the back burner.

Welcome though the 2030 ban will be to jumpstart the market for electric vehicles (EVs) in the UK, the fiscal implications still have to be addressed. Crucially, the ban on its own won't bring about the necessary

"We will still need to reduce traffic on our roads by anywhere between 20% and 60% by 2030"



reductions in emissions from road transport. Even with all new car sales being ultra-low emission (ULEVs) by 2030, at least 40% of the fleet will still be petrol or diesel. It is estimated that we will still need to reduce traffic on our roads by anywhere between 20% and 60% by 2030 to meet our carbon reduction targets.

Transport is the worst performing sector of the UK economy for reducing emissions and road vehicles are responsible for 90% of transport emissions. Rising demand for car and van travel is the central reason why transport emissions remain stubbornly high. Worryingly transport emissions are 4% higher than in 2013, and only 3% lower than in 1990. Progress to improve efficiency of new cars has been largely offset by their increased use, and the tendency to larger vehicles. Notably sales of SUVs rose to 14% of sales of new cars by 2015, and rose still further to 21% in 2018. While demand for EVs doubled over the last year, EV sales are still below 7% of all new vehicles bought across the UK.

The 2030 ban on sales of new petrol and diesel cars and vans will certainly accelerate the shift to EVs and address the issue of diminishing efficiency gains from conventional vehicles. As a concession, perhaps following industry lobbying, new hybrid cars and vans will be allowed until 2035. Toyota, which owns two British manufacturing plants had previously warned that outlawing the hybrid models made at its Burnaston factory would jeopardise future investments in the UK. Honda, which also manufactures cars in the UK, has said that measures relying almost solely on battery cars within 15 years were "too narrow". Whether this concession is enough to keep industry on side remains to be seen.

Nevertheless, the PM's bold move seeks to address a big problem, and he demonstrated the government's commitment to it in accompanying pledges to fund chargepoints (£1.3bn), batteries (up to £1bn) and grants (£582m).

Lack of infrastructure is one of the biggest barriers to EV take up. Consumer confidence to buy EVs will require a massive scaling up of charging points. It was estimated earlier this year that there were just over 30,000 public EV chargepoint connectors available in the UK, shared between around 230,000 plug-in vehicles. A wholesale transition to EVs for all 32 million cars registered in the UK would

“We must avoid public transport becoming a major casualty of the roll out of EVs”

require more than four million chargepoints.

The production of batteries is another big challenge. Currently most batteries for British cars are imported from China, Japan and South Korea. The UK has only one small battery plant in Sunderland supplying the Nissan production line. It is estimated that to deliver on the 2030 target up to five new ‘giga-factories’ would be required at a cost of £3bn. The commitment to the development and mass scale production of EV batteries is a key plank in the PM’s green industrial revolution, which aims to boost international investment in UK manufacturing bases in the Midlands and North East.

The gulf in car prices is also problematic, with EVs costing approximately £10,000 more than cars with an internal combustion engine (ICEs). Grants play an important role in making EVs more widely affordable. 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 deciles. Households in the bottom 40% mostly buy second-hand cars, and the second hand car market for EVs is underdeveloped.

These affordability and equity issues must be addressed, but it should also be noted that they are likely to be short term. International Council for Clean Transportation estimates that in the UK EVs are already 5% cheaper to own over a four-year period, and these savings will increase as EVs become more affordable. Battery prices are falling rapidly and we could expect parity on price of EV and ICE as early as the mid-2020s. If this happens and we haven’t introduced road pricing, there is a very real risk that lower running costs will cause traffic to increase worsening both congestion and pollution.

Greener Journeys has long argued that whilst electrification of the vehicle fleet is an essential part of the decarbonisation of transport, on its own it won’t be enough. It is vital that we keep a clear sense of proportion about the role EVs can play in reducing emissions, improving social equity and tackling congestion.

The most obvious immediate benefit of switching to EVs is the reduction in local air pollutants such as NOx emissions. However, these air quality benefits will be undermined if by reducing the running costs of motoring, EVs lead to more traffic and congestion on our roads, with slower traffic speeds causing increased pollution from other vehicles. In



‘Green industrial revolution’: Prime minister Boris Johnson (right) and chancellor Rishi Sunak

nose-to-tail traffic emissions from vehicle tailpipes increase fourfold. It is also important to reduce tyre particulate pollution which is increasingly recognised as a serious health issue.

EVs are lower in carbon emissions per mile driven than an ICE equivalent when the emissions from the fuel or electricity are counted on a well-to-wheel basis. However, across the whole lifecycle, from construction to decommissioning, an EV emits broadly the same CO₂ as an ICE. As the production processes shift to using renewable energy whole lifecycle benefits of EVs will grow, but today there is no such thing as a zero emissions vehicle.

Norway’s policy on encouraging EVs has been extremely successful. Norway has the most ambitious target in the world, with all new cars to be ULEV by 2025. By 2018 already 45% were ULEV. Measures have included tax incentives, free parking, free access to bus lanes and no charges on toll roads. However, Norway’s policy has encouraged more driving, and success in EV roll out has come at the expense of public transport. Public transport’s share of commuting has fallen from 23% to 6%. The car’s share has risen from 65% to 83%.

We must avoid public transport becoming a major casualty of the roll out of EVs. Whilst people on lower incomes have been effectively priced out of the EV market, an

equally serious social equity issue is the risk to public transport. 24% of all households and 44% lowest income households have no access to a car. It is vital that we protect public transport networks. A 10% reduction in public transport connectivity is linked to a 3.6% increase in social deprivation.

The big risk is that in lowering the cost of motoring electrification will make mode shift to public transport and active travel harder to deliver. Mode shift has a crucial part to play in decarbonisation as does reducing the overall travel demand.

There is nothing green about a traffic jam. Road pricing has always been the most effective way to tackle traffic congestion and reduce pollution but now there is a fiscal imperative as government faces a £40bn hole in its public finances. The switch to EVs provides the chance for an honest conversation with the public about road taxation. This is surely an opportunity not to miss. ■

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► Claire Haigh is chief executive of Greener Journeys, which specialises in quantifying the wider benefits of sustainable transport. Its research enables positive and evidence-based decisions about how people travel.

CLAIRE HAIGH



COP-26 is chance to bring UK together

Next year's global COP-26 climate change summit in Glasgow is a chance to unite the four nations of the UK and show leadership

▶ No one should be in any doubt about the prime minister's commitment to the union. Nor should anyone doubt his commitment to build back better and make the UK a world leader in clean wind energy.

The question is how feasible are his plans and do they go far enough?

Concern is growing that the government is failing to defend the union. It was reported over the weekend that Michael Gove has created a unit to fight Scottish independence. Earlier this month the government published terms of reference for an independent Union Connectivity Review, chaired by Sir Peter Hendy, which will explore ways to "improve connectivity between our four nations".

Word is that the PM is particularly keen on a bridge from Scotland to Northern Ireland which he believes would strengthen the union.

In his speech to the Conservative conference Boris Johnson set out his ambition for the UK to become a world leader in offshore wind and green energy. He pledged to invest £160m to upgrade ports and factories for building turbines, increase the current target of 30GW by 2030 to 40GW, and set targets for floating offshore wind farms. The plan also aims to create 2,000 jobs in construction and support a further 60,000 more.

Commitment to decarbonisation

The PM's ambition for the UK to be at the forefront of the green industrial revolution has been met with support from business groups,

although many called for the ambition to be matched by the right long-term incentives and regulatory framework. The Committee on Climate Change welcomed the announcement as "a step in the right direction" but stressed if we are to reach net zero UK emissions by 2050, we will need to see similarly bold commitments to cut emissions from our buildings, industry, transport and land.

Many argued that the funding announced goes nowhere near far enough and questioned the practicalities. Alan Whitehead MP commented: "Boris Johnson has said that by 2030 offshore wind will heat every home and power every kettle and washing machine, but the target he outlines - 40GW - is less than half of the total capacity we would need by the early 2030s." Professor Dieter Helm urged the government to deliver its long-promised energy white paper and commented: "Energy taxation is a mess. Now is the time to introduce a carbon tax, common across energy, transport and agriculture, and applied at the border."

That message seems to be getting through. Treasury and the business department are currently locked in battle over how to ensure polluters pay for their emissions after Brexit.

"Energy taxation is a mess. Now is the time to introduce a carbon tax"

Professor Dieter Helm

The idea of raising revenue while cutting emissions is apparently gaining increasing traction across government. Most notably it has been reported that chancellor Rishi Sunak is examining proposals for a UK-wide carbon tax. Meanwhile, the business department is drawing up a new emissions-trading system. A decision is expected in the next few weeks.

The signs are that Boris Johnson's Government is at least beginning to grapple with some of the big issues.

Scotland is leading the way

The Scottish Government has a very strong track record. Last week the Committee on Climate Change published its 2020 progress report to the Scottish Parliament. The report shows that Scotland's greenhouse gas emissions fell by 31% in the decade 2008 to 2018, faster than any other nation of the UK and any G20 nation over the same period.

In September 2019 Scottish Parliament voted unanimously to commit Scotland to net zero emissions by 2045 and to a target of 75% reduction by 2030. Since then, the Scottish Government has taken important steps to embed Net Zero as core Government policy. The Programme for Government September 2020-21 has a clear focus on green recovery, and Scottish Budget 2020-21 has prioritised tackling climate change.

Importantly, Scotland is embracing a whole economy transition to net zero. Historically, climate action has been led by parts of government which deal with energy and environment. Increasingly action on reducing emissions to net zero and ensuring policies are resilient to climate change will need to be led by all directorates, and driven from the centre of government.

There is much to celebrate about Scotland's approach and significant progress has been made. Emissions have fallen rapidly whilst the economy has grown. Scottish renewable generation has tripled, and fossil-fuelled generation has fallen by more than 70% in the last decade. However, reductions have been heavily weighted to action in the power sector. Emissions from all other sectors have fallen by just 14% over the same period. Aviation and surface transport have both increased.

Scotland missed its annual emissions target in 2018 and prior to Covid it was not clear that it was on track to meet its legislated target

“When it comes to tackling climate change, we are all on the same team”



Supporting sustainable transport: A £4m grant from Transport Scotland has helped First Bus to purchase a new fleet of 22 full electric Alexander Dennis buses. The vehicles will enter service in Glasgow next year

for emissions reductions in 2020. The impact of the lockdown means that its 2020 target is likely to be met, but key structural changes that will drive emissions reductions outside electricity generation have not been achieved.

Must go further on transport

Transport is Scotland's largest greenhouse gas emitting sector responsible for 37% of emissions and the only sector to see an increase. Unlike most other sectors, surface transport did not see a fall in emissions in the decade between 2008 and 2018. Emissions were 1% higher than in 2008 and 10% higher than in 1990. Aviation emissions are up 57% on 1990 and up 5% on 2008 levels.

The Scottish Government has responded with an ambitious programme for Government which puts “sustainable transport at the heart of decision making”. However, the scale of the challenge is immense. All key indicators are pointing in the wrong direction.

Trips by car and van are rising, single occupancy trips are on the increase. Over the past decade bus patronage has declined by 20%. Despite policies such as Smarter Choices Smarter Places and Cycling Action Plan there has been no significant shift from cars to public transport, walking and cycling over last decade. Public transport has been further massively hit by Covid-19.

In its embrace of sustainable transport, the Scottish Government has demonstrated real leadership. National Transport Strategy demonstrates a clear break with the past, “not taking steps to effectively manage demand for car use is no longer an option”. It commits to updating the appraisal guidance and investment decision-making processes to ensure that the sustainable transport hierarchy is embedded within it.

The Scottish Government has committed significant investment in bus and active travel infrastructure; is implementing low emissions zones; intends to phase out new petrol and diesel cars in Scotland by 2032 or earlier; to decarbonise scheduled flights by 2040; and is committed to cost-effective railway electrification, coupled with targeted battery and hydrogen technology.

Despite these commitments Scotland will need to go much further. Two-thirds of Scotland's transport emissions are from road transport. A major shift is needed from private transport to public and shared transport, and active travel. The Scottish Parliament took a step in the right direction by voting for Scotland's Workplace Parking Levy last year. But, ultimately, there can be no sustainable transport system without road pricing.

We also need to reduce the need for travel. The pandemic has accelerated some structural

changes in the economy such as more working from home which should be harnessed. There is a powerful case for investing in broadband instead of building new roads. This must go alongside a more efficient system for freight and logistics. Otherwise growing internet shopping will bring our roads to a standstill. The integration of sustainable transport with new housing will be essential if we are to avoid building in congestion and pollution.

Transport is the fastest growing source of global greenhouse gas emissions. Scotland's experience shines a light on the challenges and shows just how difficult it is going to bring down transport emissions - not just in Scotland and the rest of the UK but globally. Glasgow's role as host of COP26 in November 2021 presents an opportunity to demonstrate Scotland's climate leadership.

What about saving the union?

The Union Connectivity Review will assess how the quality and availability of transport infrastructure across the UK can support economic growth and quality of life. Carbon reduction will be one of the key criteria. The context of the review, however, is Brexit which threatens to shatter the Union.

The latest Ipsos MORI poll suggests that something fundamental will be needed to reverse the growing tide in favour of Scottish independence. 58% of those likely to vote are now in favour of independence, as against just 42% who would vote to stay in the union. As for a united Ireland, it seems unlikely that a bridge across the Irish Sea, if such a project were even viable, would be sufficient to keep Northern Ireland as part of the UK if pressure for unification grows. A real game changer will be needed.

Next year the eyes of the world will be on us. Climate change is an existential threat to humanity which respects no boundaries. When it comes to tackling climate change, we are all on the same team. ■

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We need a green recovery from Covid

The pandemic may have distracted attention from the climate crisis, but that overwhelming threat has far from diminished

► Even in a year where “unprecedented” has become a cliché there are moments with a sense of tectonic plates shifting. President Xi Jinping’s pledge last week that China will be carbon neutral by 2060 was one such moment.

It would be easy to be cynical. China is still building coal-fired power plants, and President Xi undoubtedly scored a political point against Donald Trump. However, China has also become a wind, solar and battery superpower, with hydrogen now in its sights. As President Xi declared, “humankind can no longer afford to ignore the repeated warnings of nature”.

Climate change is shaping up to be one of the big issues of the US presidential election. Wildfires on the West Coast have so far incinerated five million acres of forest and thousands of homes and killed at least 35 people. President Trump is well known to be a climate sceptic. Jo Biden has underlined his determination to make tackling climate change his top priority. November 3rd will be another defining moment.

The pandemic may have distracted attention from the climate crisis, but the imperative of tackling that overwhelming threat has far from diminished.

Through its presidency of COP 26 and its hosting of the G7 next year, the UK is uniquely positioned to promote greater international ambition and ensure a green recovery. However, the UK has yet to commit to updating its national contribution to the Paris Agreement by the end-of-2020 deadline.

What does the UK need to do to demonstrate the kind of leadership the world needs? What solutions are needed nationally and internationally? Is there a silver bullet?

Green stimulus, green jobs

The first obvious point to make is that we need a green recovery from Covid-19. The CBI wants the UK to become a global leader in clean energy, creating more green jobs to help the economy recover. A recent inquiry by the All Party Parliamentary Group on the Green New Deal, ‘Reset’, concluded that “people want a fairer, greener, more community-oriented future”. That was also a central conclusion of the UK climate assembly, which has called for a tax on frequent flyers, a ban on selling SUVs and a cut in meat consumption. The overwhelming consensus is that we must build back better.

The recovery following the 2008 financial crisis saw a sharp rebound in emissions due to carbon-intensive stimulus packages. However, a landmark study from the Smith School in Oxford demonstrates that green stimulus packages are more effective at supporting increased economic activity, generating higher numbers of jobs and long-run cost savings as well as having strong potential to cut emissions.

“A green and resilient recovery must have public transport at its heart”

Ideal investments are those that put newly unemployed people to work quickly, delivering a high short-term multiplier, while producing valuable assets that meet the needs of the future, delivering a high long-term multiplier.

Clean energy investment, for example, has positive high long run multiplier impact and a positive climate impact. By contrast airline bailouts without attaching climate conditions score lowest on both counts. Traditional transport infrastructure investment such as road building has high long run multiplier impact but potentially a negative climate impact. Connectivity infrastructure investment, by contrast, has both a potential high long run multiplier impact and a positive climate impact.

Rising demand for car and van travel is the central reason why transport emissions remain high. There is a strong green investment case for switching the £27bn roads budget to broadband. Covid-19 has accelerated some structural changes in the economy, with more people working from home and shopping online. At the same time, we need a more efficient system for freight and logistics, and public transport must be central to reducing emissions and ensuring a fair and green recovery.

Local leaders need to be able plan for housing, transport and jobs on an integrated long-term basis. Reform of appraisal will be needed as existing conditions favour car-based policies. New developments in urban centres well connected by public transport can stimulate 50% more economic growth than developments on the fringe whilst dramatically reducing congestion and pollution.

A sharper focus on risk and resilience

The economic recovery from Covid-19 also needs a much sharper focus on risk and resilience. The pandemic has demonstrated the unpreparedness of the global economy to systemic risks, despite early warnings from scientists. We must put an end to economic short-termism and the maximisation of economic efficiency over the resilience of communities.

In 2019, climate change was linked to at least 15 extreme weather events costing \$1-10bn each. The Intergovernmental Panel on Climate Change predicts such events will become more frequent with the rise in

“The costs of pollution should be integrated into every decision”

global temperatures. Investing in high-carbon activities without climate conditionality in the hope that it will stimulate the global economic recovery will only prepare the ground for future systemic crises.

Government support to companies should be conditional on climate commitments and accelerate clean energy investments. The automotive sector should be bailed out on the condition that it accelerates electrification. Financial aid to airlines should be conditional on carriers paying taxes and starting to use low-carbon fuels in the future.

A green and resilient recovery must have public transport at its heart. We currently risk replacing one health crisis with another. By discouraging use of public transport to ensure social distancing we remove one of the most efficient ways to tackle air pollution. Road transport is the main contributor to air pollution causing 40,000 early deaths a year. Diesel cars and vans are responsible for 70% of transport NOx emissions. A modern diesel bus produces fewer NOx emissions than a modern diesel car despite having the capacity to carry 20 times more passengers.

Furthermore, studies have demonstrated a link between long-term exposure to PM2.5 air pollution, much of which comes from diesel cars, and higher infection and death rate from Covid-19. A spike in air pollution from increased car use would aggravate any future respiratory pandemic.

Getting the price signals right

Dieter Helm describes “making polluters pay” as the single most radical and effective policy that could be adopted both for economic prosperity and for the environment. The costs of pollution should be integrated into every decision made by businesses and consumers. Price signals should incentivise consumers to lower their carbon footprint by making lower carbon choices.

How can it be cheaper to fly from London to Edinburgh than to get the train? The Rail Delivery Group calculates that emissions per passenger km for air travel is at least six times that of rail travel. The burden of taxation should be shifted to from rail to air. There should also be incentives for people to shift from road freight to rail freight. A freight train can carry on average as much as 76 HGVs.

The main conclusion of the Transport



How can it be cheaper to fly from London to Edinburgh than to get the train?

Knowledge Hub (TKH) Workshop on ‘Decarbonising Transport’, was that we need a total reformulation of transport pricing. Consideration should be given to how today’s digitally connected society could support personalised mobility pricing. We should also avoid terms like ‘road pricing’ and ‘congestion charging’ as these are politically undeliverable. Instead we should use terms like ‘eco-charge’ and ‘eco-levy’.

The failure of road taxation to cover external costs means that we over consume roads. The freeze in fuel duty since 2011 has caused 5% more traffic, an additional five million tonnes of CO2 emission and a quarter of a billion fewer bus journeys. A joint paper for the TKH (Glaister et al, March 2020) argues that in the longer term the answer is road user charging, but in the meantime increasing fuel duty would be a useful interim measure. To make any increase in fuel duty less unacceptable to the public, the incremental revenue should be ring-fenced for beneficial transport purposes.

A ban on selling petrol and diesel cars from 2030 is likely to be announced imminently. Whilst this will be a big moment for car manufacturing it will do nowhere near as much as in terms of reducing emissions as pricing properly for the use of roads.

The closest thing to a silver bullet

Climate change is a global problem requiring

global solutions. The question of equity must be central with wealthier countries decarbonising more quickly. We need to move to a system of emissions reporting based on consumption. A sustainable consumption pathway will require aggregate demand to go down.

It is tempting to look for Moonshots. Will technology save us? Can the UK become a global leader in areas such as sustainable aviation fuels, the hydrogen economy and carbon capture, utilisation and storage?

The answer may be less conducive to photo ops but would be infinitely more effective: a tax on carbon. Revenues from carbon taxes should then be rerouted to invest in green infrastructure and future technologies, and to ensure a fair and just transition.

Through its presidency of COP 26 and hosting of the G7 next year, the UK should lead international efforts to establish a strong, predictable and rising carbon price. For a prime minister keen on eye-catching solutions, that would be the closest thing to a silver bullet. ■

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CLAIRE HAIGH



A COVID-19 budget - but not a green one

Last week's budget was a stark reminder of how quickly the climate emergency is downgraded in the face of other priorities

► We are living in a new reality. Last week the FTSE 100 saw its biggest fall since Black Monday, and the chances of a global recession are rising by the day. There is scarcely a part of the economy immune to the effects of COVID-19.

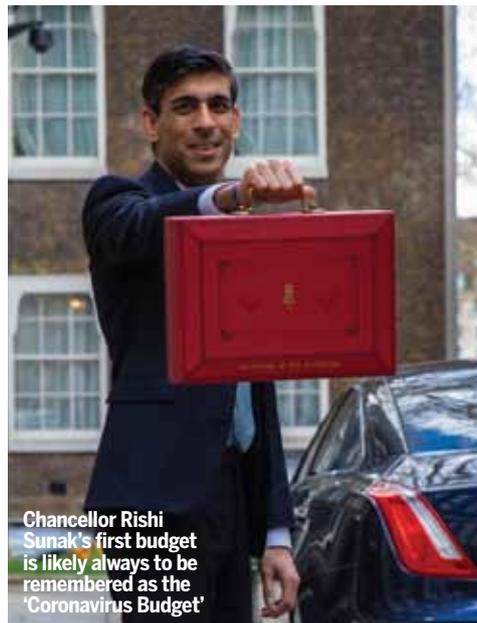
The public transport industry is exposed to challenges on an unprecedented scale. What impact will an increased shift to home-working and online shopping have on bus and rail companies already suffering from the impact of changing work patterns and retail habits? COVID-19 may further accelerate these structural changes in the economy. For the airline industry COVID-19 is an existential threat. We can expect many more Flybe's. Even the healthiest airlines and airports are vulnerable.

Last week's budget was a stark reminder of how quickly climate change is downgraded in the face of other priorities. Anyone hoping for a "Climate Change Budget" would have been disappointed. The chancellor described it as a "People's Budget from a People's Government", but Rishi Sunak's first budget is likely always to be remembered as the "Coronavirus Budget".

The Chancellor's support for businesses in the face of COVID-19 was welcomed. He pledged £30bn to mitigate the effects of COVID-19 and promised whatever it takes to help the NHS to cope, be it "millions or billions". Perhaps the most striking announcement was his promise of £60bn

infrastructure investment over the course of the parliament, the biggest commitment for over half a century. It was an extraordinary pledge for a Conservative chancellor to make, suggesting a tectonic shift in the party's ideological foundations. Measures such as the rise in the National Insurance threshold, a boost for the affordable homes programme and support for rough sleepers also sent a clear signal - to coin a phrase - that this is 'a government for the many'.

Coronavirus will inevitably dominate our lives over the coming months. Indeed we may need to brace ourselves for living with



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the effects of COVID-19 for years to come. However, beyond the immediate crisis, the big challenge will be in how to reconcile competing policy objectives. What does the net zero target mean for Global Britain, for the government's levelling up agenda and for a stronger economy?

It is perhaps too soon to assess the government's commitment tackling climate change. Environmental groups were disappointed by lack of measures commensurate to the scale of the challenge, but the real litmus test will follow in the National Infrastructure Strategy, now promised for the spring, the Spending Review and the Treasury's Net Zero funding review. The Committee on Climate Change described the budget as a "realistic start", given that the immediate focus has to be on the Coronavirus, but it "doesn't close the policy gap" on emissions reduction.

It is evident that the government is taking the UK's role as host of this year's UN Climate Summit seriously. Last week the secretary of state for business, energy and industrial strategy and COP26 president, Alok Sharma, gave a briefing to all UN member states in New York at which he urged all countries to submit more ambitious Nationally Determined Contributions (NDCs). He emphasised the need for the shift to be fair and that developed countries must meet their commitments including the \$100bn goal for climate finance.

The government is clearly also on the look out for opportunities. In launching the COP26 private finance strategy at the end of last month, Mark Carney, now the PM's finance adviser, said "this could turn an existential threat into the greatest commercial opportunity of our time". Private finance will undoubtedly have a key role to play in a successful transition to net zero, and Carney's strategy to "make finance the force for good it should be" is very encouraging.

However, real leadership at COP26 requires that we reduce emissions from our most polluting sector. Decarbonisation of transport was one of the five policy areas highlighted by Sharma to the UN member states, and the government has committed to publishing a plan. Transport emissions are rising largely because of slowing efficiency gains and increased demand for car and van travel.

The budget did nothing address the

“Climate change will now have to be considered in assessing all major infrastructure projects”

fundamental challenge in decarbonising transport: too many vehicles on our roads. The investment allocated for green transport solutions pales in comparison to the second Road Investment Strategy (RIS2). A total of £1bn was promised for rapid charging hubs, tax and spend reforms and measures to reduce nitrogen dioxide in towns and cities. However, RIS2 includes £27bn of tarmac which will pay for over 20 connections to ports and airports, 100 junctions and 4,000 miles of road.

Plans for a third runway at Heathrow airport were last month ruled illegal by the court of appeal because ministers did not adequately take into account the government’s commitments to tackle the climate crisis. It remains to be seen what impact this ruling will have on road investments. It opens the door to challenges against roads and other airports because climate change will now have to be considered in assessing all major infrastructure projects. A big win for climate change campaigners, but what impact will it have on ambitions for “Global Britain” and future airport expansion in the UK? If we don’t expand, will we be flying less or will other airports be filling up instead? It’s politically a lot easier for the government to stop a third runway being built at Heathrow than it is to make it more expensive to fly.

The budget extended support for the purchase of electric cars, albeit at a slightly reduced level, and exempted zero emissions cars from VED which should help to incentivise purchase. However, there was nothing on demand management and the big missed opportunity both in terms of

incentivising the take up of electric vehicles and encouraging the switch to sustainable transport was on fuel duty. The current crisis has ignited the sharpest oil price collapse in last 30 years. If ever there was a moment to end the fuel duty freeze this was it.

The freeze in fuel duty is a perfect illustration of where there can be contradictions between delivering on the net zero target and the government’s ‘levelling up’ agenda. Greener Journeys analysis demonstrates that the nine-year freeze in fuel duty has led to 5% more traffic and an extra five million tonnes of greenhouse gas emissions. However, many who “only lent the Conservatives their vote” at the recent election would have felt betrayed by an end to the freeze. At the same time, by undermining public transport networks, the freeze is damaging for some of the very poorest in our society. The freeze has led to 250 million fewer bus journeys and 75 million fewer rail journeys.

These may not be easy choices politically. However, encouraging greater use of public transport is the right strategy both for lowering emissions and improving life chances and opportunities for everyone. The signs so far are that the government recognises the importance of public transport. However, to get the value out of the additional £5bn for local transport recently announced by the prime minister we will also need measures to nudge people out of their cars.

Greater devolution will be key to levelling up and rebalancing the economy. There is a growing consensus about the need to address the huge and growing scale of spatial inequality

in the UK. Growth in productivity is almost twice the UK average in London, and nearly 50% of employment growth in the UK is in London and the wider South East. A key conclusion of the UK2070 Commission Report is that devolution of powers and responsibilities and funding must be a priority.

A Devolution White Paper is promised for the summer. In the meantime, the budget included a new devolution deal for West Yorkshire. The commitment of £4.2bn to be awarded in five-year funding settlements for the eight mayoral combined authorities is a step forward. Research for Greener Journeys shows that housing developments in urban centres well connected by public transport can deliver 50% more economic growth than developments located on the fringe. However, to realise these benefits we need a long-term and integrated approach to planning for transport, housing and employment.

Squaring the circle

The fundamental challenge is how to decouple economic growth from rising greenhouse gas emissions and damaging social and environmental impacts. There are divergent views on whether economic growth can ultimately be consistent with meeting carbon reduction targets. A compact mass transit-orientated model for urban development, however, seems the best chance we have of achieving sustainable and inclusive growth.

COVID-19 may lead to a slump in global carbon emissions this year but that is nothing to celebrate as it poses a much greater threat to long-term climate action by undermining investment in clean energy. Bloomberg New Energy Finance predicts that this year could mark the first time the world’s solar power growth falls since the 1980s. The world will eventually have a vaccine to tackle COVID-19, but there is not yet the international cooperation or political will to develop the vaccine necessary to tackle climate change. ■

Green transport lags behind roads



for rapid charging hubs, tax and spend reforms and measures to reduce nitrogen dioxide in towns and cities



ABOUT THE AUTHOR

► Claire Haigh is chief executive of Greener Journeys, which specialises in quantifying the wider benefits of sustainable transport. Its research enables positive and evidence-based decisions about how people travel.

CLAIRE HAIGH



A utopian or dystopian future?

Technology is disrupting how we use transport. Policy-makers must ensure that public transport plays a big, or bigger, role

► Last month one of the giants in the field of management theory died. The late Professor Clayton Christensen of Harvard Business School has been deservedly described as the most influential management thinker of his time. His book *The Innovator's Dilemma* popularised the idea of disruptive innovation. Published in 1997, it captured the zeitgeist just as the disruptive power of the internet was taking hold.

There is scarcely a part of the economy that has not in some way been profoundly affected by the internet and the disruptive changes that have ensued. Transport is no exception. We are seeing a Cambrian explosion in technological innovations with new forms of transport constantly emerging. Customer expectations in the mobility sector are continually being redefined by experiences that would once have been unimaginable.

At the same time, both current and future transport demand is being profoundly affected by a growing ageing population, increasing urban densification and major structural changes in the economy and labour market. We are experiencing a dramatic increase in online shopping; changes to work patterns with a shift to more flexible and part time working; the rise of the 'gig' economy and growing automation - to list just a few of the major changes already underway.

The challenge for public transport operators is how to respond dynamically to changing demand in the most cost-effective

way possible. If technological changes and innovations are not managed effectively, they could precipitate a sharp reduction in public transport use. This would have damaging impacts for the economy, and would lead to a worsening of pollution and congestion and an increase in social exclusion.

It is often observed that we are living through a time of unprecedented change. As we look to the future many different scenarios are possible. This is brought into ever sharper focus by the growing imperative to reduce global greenhouse gas emissions. The key question is what future do we want, and what do we need from our transport system to bring that future about. Crucially, what is the role of public transport?

Are we heading in the right direction?

There is the very real risk that new technologies could tempt people away from public transport, walking and cycling. Studies in the US have revealed that ride hailing through platforms such as Lyft and Uber have been leading to fewer trips by public transport and increasing congestion. San Francisco observed a 50%

“There is the risk that certain parts of the country and demographics could be left behind”

increase in congestion between 2010 and 2016.

Mobility as a Service (MaaS) would seem to present opportunities to encourage behaviour change, although recent high profile failures demonstrate that the concept is still evolving. The lack of investment case was behind the collapse of KutSuplus in Helsinki, and Breilog in USA. There also remain significant barriers to be overcome, not least regarding the lack of co-ordination across local authorities boundaries and the sharing of data. However, once these difficulties are resolved, and a stronger business justifies more extensive roll out, will MaaS steer people to greater or lesser car use?

What will be the role of car sharing as our transport system evolves? Car sharing is often viewed as a coming transformation due to its environmental benefits. However, the Government Office for Science suggests that car sharing is likely to remain niche because people prefer ownership. The Department for Transport predicts that if car sharing fails to take off traffic could grow by 55% between 2015 and 2050.

Connected and Autonomous Vehicles (CAVs) have also been widely touted as potentially transformational. But if and when they finally do become mainstream what impact will they have on congestion? DfT scenario modelling shows the growth in traffic forecast could increase to 71% if self-driving vehicles allow passengers to use their time more productively. CAVs could also lead to worsening urban sprawl. Studies into the impact of self-driving vehicles suggests people will be willing to commute longer distances.

There is the risk that certain parts of the country and demographics could be left behind. Social exclusion could be worsened by digital and financial exclusion: only 44% of those over the age of 75 used internet in past three months; 1.3 million adults don't have a bank account. Moreover, in some areas there are significant gaps in digital and electrical infrastructure.

If public transport networks suffer there could be serious social consequences. A 10% decrease in public transport connectivity is associated with a 3.6% increase in social deprivation. Reduced use of public and active transport as a result of cheap and convenient door-to-door alternatives could further exacerbate the obesity epidemic.

“Measures to reduce car use could be becoming more politically acceptable”

Avoiding unintended consequences

If we are to avoid detrimental unintended consequences, we need to move away from planning for vehicles to planning for people and places. This means a central role for public transport, giving priority to people rather than cars.

The DfT's *Future of Mobility Urban Strategy* sets out key principles we should be guided by, which include some important themes relating to public transport: mass transit must remain fundamental to an efficient transport system; innovation in mobility must help to reduce congestion through more efficient use of limited road space; and new mobility services must operate as part of an integrated transport system, with the benefits of innovation serving all segments of society.

As far as possible, future economic growth should be decoupled from damaging social and environmental consequences. Investment in public transport networks supports jobs and UK manufacturing and delivers genuinely inclusive and sustainable growth. 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 double decker bus can take 75 cars off the road.

The integration of sustainable public

transport with housing and land-use planning will be essential, if we are to avoid urban sprawl and worsening congestion and pollution. New developments in urban centres well connected by public transport can stimulate 50% more economic growth than similar developments located at the fringe.

We need to move to a more efficient system for freight and logistics. There is the risk that growing internet shopping will further exacerbate trends to slower traffic and worsening congestion to the extent that they could bring our roads to a standstill. This is not only very damaging for the economy, in nose to tail traffic emissions from vehicles increase up to fourfold.

Above all, the transport investment decisions we make today will be critical in determining our ability to tackle arguably the greatest of our times. Transport has become the biggest emitting sector of the UK economy accounting for 27% of greenhouse gas emissions. It is the only sector to have increased emissions over the last carbon budget, an increase which is largely the result of rising demand for car and van travel.

We need a major modal shift

Not taking steps to effectively manage demand is no longer an option. Of course, we

must invest more in public transport, and the prime minister's announcement last week of £5bn for local transport is a very welcome step in the right direction. But to bring about the kind of change we really need, government must pull the big policy levers.

We will get a clear indication of how serious the current government is about encouraging greater use of public transport in next month's budget. Fuel duty must be raised. The freeze in fuel duty since 2011 has caused 4% increase more traffic, 4.5 million additional tonnes of CO₂, 200 million fewer bus journeys and 60 million fewer rail journeys. It is essential to get the price signals right if people are to be persuaded out of their cars.

Instead of building new roads we should make better use of our existing roads through demand management measures such as the workplace parking levy and city centre entry restrictions. We must avoid falling into the trap of thinking electric cars are a panacea. Whilst they have a role to play, they will do nothing to solve congestion which dramatically worsens pollution and will only be addressed by some form of road pricing.

There are signs that measures to reduce car use could be becoming more politically acceptable. It is very encouraging that some local authorities are including restrictions on diesel car use in their plans to tackle air pollution. A recent DfT survey showed that three quarters of the population believe we should reduce use of motor vehicles for the sake of our health. Around the world Extinction Rebellion and the School Strikes have created the space for governments to take bolder action on climate change.

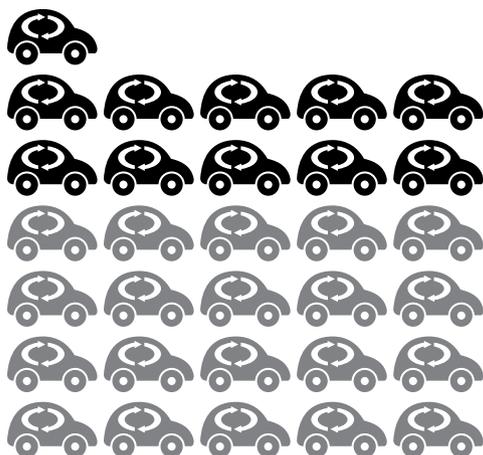
The most dystopian future imaginable is one where we fail to bring down global greenhouse gas emissions. Both here in the UK and around the world transport is on the front line. As hosts of COP26 later this year, we must lead by example and do everything we can to reduce emissions from transport. ■

ABOUT THE AUTHOR

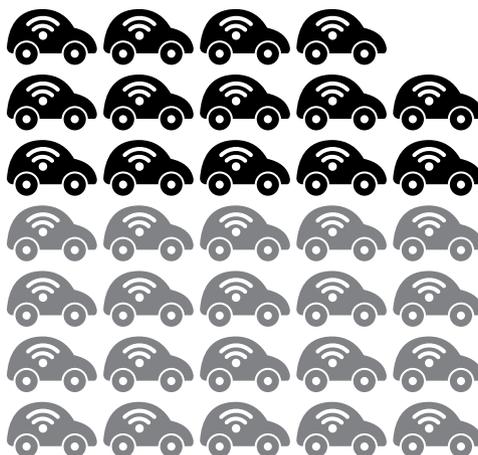
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Factors that risk increasing traffic..

55% growth in traffic predicted between 2015 and 2050 by the Department for Transport if car sharing fails to take off



71% growth in traffic forecast if self-driving vehicles allow passengers to use their time more productively



CLAIRE HAIGH



What would success look like for COP26?

There is a lot riding on this year's COP26 summit in Glasgow. Major changes are needed in how climate policy is taken forward

► The UN secretary general's report on last year's COP25 summit in Madrid makes for sobering reading. On the plus side, COP25 at least established the principle that 1.5 degrees is the maximum safe limit to global warming by the end of the century, and that net zero emissions by 2050 must be the global long term climate objective.

However, the current Nationally Determined Contributions (NDCs) are inadequate and would imply global warming of three degrees by 2100. Even if all NDCs are fully implemented, the carbon budget for 1.5 degrees will be exhausted before 2030. The message from COP25 was clear. Countries now need urgently to define what the 1.5 degrees target entails for their 2020 and 2030 commitments.

There is a lot riding on COP26. The last decade has been the hottest on record. Global greenhouse gas emissions must fall by 7.6% every year to 2030, but there is no sign even of GHG emissions peaking in the next few years.

Fundamental changes are needed in how climate policy is taken forward including a review of the whole international policy framework. It looks highly unlikely that NDCs alone will deliver the necessary reductions. One way to accelerate decarbonisation may be for countries to join together into blocs and set up a common cap and reduction targets.

The EU is a leading example of such a bloc. The European Green Deal commits the EU to be carbon neutral by 2050, and proposes a

carbon border adjustment levy from 2025 to ensure the price of imports reflects carbon content. How the UK navigates its relationship with the EU on climate policy as it leaves will be of critical importance, especially in relation to standards for products and regulations.

More fundamentally global agreement will require the international community to coalesce around core principles, including how countries should measure their carbon contributions and the relationship between decarbonisation and growth. The world today is a very different place to the world in 1992 when the Kyoto Protocol was established.

Taking stock

To begin with we need a clearer understanding of the source of the problem. This means that we need to move to a system of consumption based reporting. In *Burn Out: The Endgame for Fossil Fuels*, Dieter Helm argues that the big mistake of Kyoto was that it established reporting based on carbon production not consumption, which conveniently places the burden of emissions reductions on those countries which produce energy-intensive

"A strong, predictable and rising carbon price is needed. We must stop subsidising fossil fuels"

goods rather than those which consume them.

Kyoto also didn't take account of the biggest growing source of emissions: China, India and other developing countries. The world depends more on coal today than in 1980 and oil has not been toppled from its dominance of transport. China's economy doubles every 7-10 years, and has 80% coal in its electricity generation mix. The export orientation of China's growth means that carbon embedded in its exports ends up being carbon consumption by the EU and US.

We need to move beyond narrow frameworks of cost-benefit analysis. In *Why Are We Waiting?*, Nicholas Stern sets out how he would place less emphasis today on a cost benefit approach than he did for his 2006 Review. Climate change must be framed in terms of the management of immense risks. Greater emphasis should be given to co-benefits such as improving health and well-being, enhancing bio-diversity, creating jobs, reducing poverty, stabilising the economy, and increasing resilience and the ability to adapt to climate change.

Discounting concepts are not helpful in relation to climate policy. Climate change can radically alter the circumstances of future generations, making them much poorer "that would surely radically alter the discount factor between those parts of the future and now". Pure time discounting involves valuing welfare of people in the future lower than welfare of people today.

The question of equity must be central to international climate discussion. *Better Growth, Better Climate: The New Climate Economy Report* emphasises that this is crucial for both moral and political reasons. The key principle is "equitable access to sustainable development", with wealthier countries decarbonising more quickly.

Policies to address market failures must be at the heart of climate policy. A strong, predictable and rising carbon price is needed. We must stop subsidising fossil fuels and support divestment from fossil fuels. We should follow the "net environmental gain principle" to ensure we protect our natural capital. In *Green and Prosperous Land: A Blueprint for Rescuing the British Countryside*, Dieter Helm describes "making polluters pay" as the single most radical and effective policy that could be adopted both for economic prosperity and for the environment.

“Reducing how much we travel and changing modes of travel could cut energy by 78%”

To grow or not to grow

Stern sees the story of alternative low carbon pathways as very exciting given the phenomenal technological progress and structural changes in the world economy over recent years: “Growth, development, mitigation and adaptation go hand in hand”. At the same time a just transition means governments must commit to mitigate negative impacts on displaced workers, affected communities and low income households.

Stern highlights that in some of the best performing economies growth is being decoupled from carbon emissions. A compact transit-orientated model for urban development in the world’s largest 724 cities could reduce greenhouse gases by 1.5 billion tonnes CO₂ per year by 2030, mostly by reducing personal vehicle use in favour of more efficient modes.

There are divergent views on whether economic growth can be consistent with meeting carbon reduction targets. Professor Tim Jackson of the University of Surrey argues that the idea that renewable energy and greater efficiencies will allow us to sever economic growth from its environmental impact runs contrary to historical evidence and the basic arithmetic of growth. Professor Kevin Anderson, formerly of Tyndall Centre for Climate Change Research, argues that we are facing the need for cuts so great that they challenge the fundamental logic of prioritising GDP growth over everything else.

In its report *A New Agenda On Climate Change*,

the RSA surmises that there are broadly three positions on global ecological risks and the economy: business as usual growth, green clean growth “a new model of capitalism”; and post growth. The problem with post growth is that there is no political and economic narrative of transition that currently makes sense. Momentum is behind clean growth but the key question is whether it is really part of a transition to a sustainable economy with projects being invested in greener architecture.

A changing world

Profound structural changes are underway in the world economy. The balance of economic activity has shifted towards emerging markets and developing countries. Global population is expected to reach nine billion by 2050, six billion of these in cities. Pressure on natural resources and climate will intensify, increasingly threatening prosperity and growth if we continue with old technologies.

We need strong political leadership and credible consistent policies. Essential action includes: building more compact connected cities rather than urban sprawl; restoring degraded land and making agriculture more productive rather than continuing deforestation; and scaling up renewable energy sources rather than fossil fuels.

In *Zero Carbon Britain: Rising to the Climate Emergency*, the Centre for Advanced Technology argues that we already have the tools and technology needed efficiently to power the UK with 100% renewable energy.

By using energy more efficiently we can “power down” demand by 60%, at the same time we can “power up” the UK’s renewable energy resources to replace fossil fuels. Reducing how much we travel and changing modes of travel could cut energy by 78%.

Climate change is often described as a “wicked problem”, extremely complex with many feedback loops and no single solution. *Zero Carbon Britain* turns this on its head and points to the many “wicked solutions” which can accelerate change. Zero carbon technologies are also non linear and contain an emerging array of feedbacks which accelerate the speed and scale of deployment. For example the costs of solar panels have fallen much faster than anyone could have predicted.

Green shoots

In his report on COP25, the UN secretary general highlights on a more positive note that we should be encouraged by strong action evident from the private sector and from young people. “Many businesses showcased ambitious commitments compatible with 1.5 degrees, in many cases going beyond current national policy frameworks, even in sectors heavily reliant on fossil fuels”.

Young people will keep climate change high on the agenda. Last week it was announced that half of UK universities have now committed to divest from fossil fuels. Students and academic protests have successfully forced the hand of investment endowment committees. This is a sign of things to come.

Notwithstanding the immense challenges there is everything to play for at COP26. Last week it was announced that outgoing governor of the Bank of England, Mark Carney, will be the prime minister’s finance advisor for COP26. A very interesting appointment which points to an emerging strategy to use UK’s global leadership in financial services to address the climate crisis by transforming the financial system. ■

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Decoupling growth from emissions

A compact transit-orientated model for urban development...



...in the world’s largest 724 cities...



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