

# Decarbonising transport

Travelling less and the role  
of online opportunities





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# Decarbonising transport

This briefing forms part of the Decarbonising transport series, a toolkit of seven evidence-based policy briefings prepared for the Local Government Association by the DecarboN8 Research Network and the Centre for Research into Energy Demand Solutions.

The briefings are designed to help councils set goals for reducing carbon emissions from transport and understanding a range of key options available to them to make the rapid progress required.

Decarbonising transport will require an ambitious package of measures and so, whilst the briefings are designed to provide clear options for specific policy areas, councils will need to design the right mix for their own context.

You can find the other briefings online at: [www.local.gov.uk/decarbonising-transport](http://www.local.gov.uk/decarbonising-transport) or by emailing [info@local.gov.uk](mailto:info@local.gov.uk)

## The decarbonising transport series

- Getting carbon ambition right
- The role of buses
- Accelerating the uptake of electric vehicles
- Climate smart parking policies
- The role of land use, localisation and accessibility
- Travelling less and the role of online opportunities
- Growing cycle use

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# Introduction

Supporting people to travel less is an essential part of every council's decarbonisation strategy.

Even with rapid adoption of electric vehicles and major mode shift, the pace of change required to meet the UK's carbon budget means that reductions of at least 20 per cent in car miles travelled per person (as a driver or passenger) will be required by 2030.<sup>1</sup>

Travelling more has always been seen to be a marker of economic growth. However, we have been travelling less per person over the last two decades. Councils need to feel confident in talking about, and planning for, travelling less.

Since 1998, the average number of trips made by people in England per year has reduced by 8.5 per cent. The average number of car trips made by people, as a driver and as a passenger, has dropped by even more, by 9.8 per cent and 13.8 per cent respectively.<sup>2</sup>

Changes to how we conduct activities such as banking, shopping and working underpin much of this shift. For example, the number of workers in industrialised nations that are in knowledge-based industries – where working remotely is possible thanks to improvements in Information and Communication Technology (ICT) – has increased substantially.<sup>3,4</sup> ONS data suggests that prior to the national lockdown at least 30 per cent (8.7 million) worked from home during a part of their employment.

Rather than thinking that supporting people to plan to travel less is potentially damaging, it could in fact support the types of lifestyles people want to live. 60 per cent of the workforce want to switch to a job with flexible working or full-time remote working opportunities.<sup>5</sup>

Whilst the coronavirus pandemic has undoubtedly had a hugely negative impact on society, it's also reinforced just how much potential there could be for change in how we live, and the ability of society and the economy to adapt. 29 per cent of those who could work, worked exclusively from home in the week beginning 3 July 2020.

There has been a huge growth in home working, an acceleration of online shopping, remote education and a shift to more localised deliveries. Some of this will be beneficial if it can be made to stick, and it should change how local authorities think about scope for reducing car-based travel.

Opportunities for switching to online work, study and services are not available equally to everyone. However, from a carbon perspective, these online options are generally available to the income and age groups who travel the most, representing a high priority area for action.

This briefing note reviews the evidence and suggests some policy actions which local authorities can take to enable the uptake of online options in ways which work for people and cut carbon.

## RELEVANT POLICY STRANDS

**Cycling and walking plan for England (2020)** aims to promote cycling for the carriage of freight, and to reduce unnecessary motorised freight and servicing traffic.

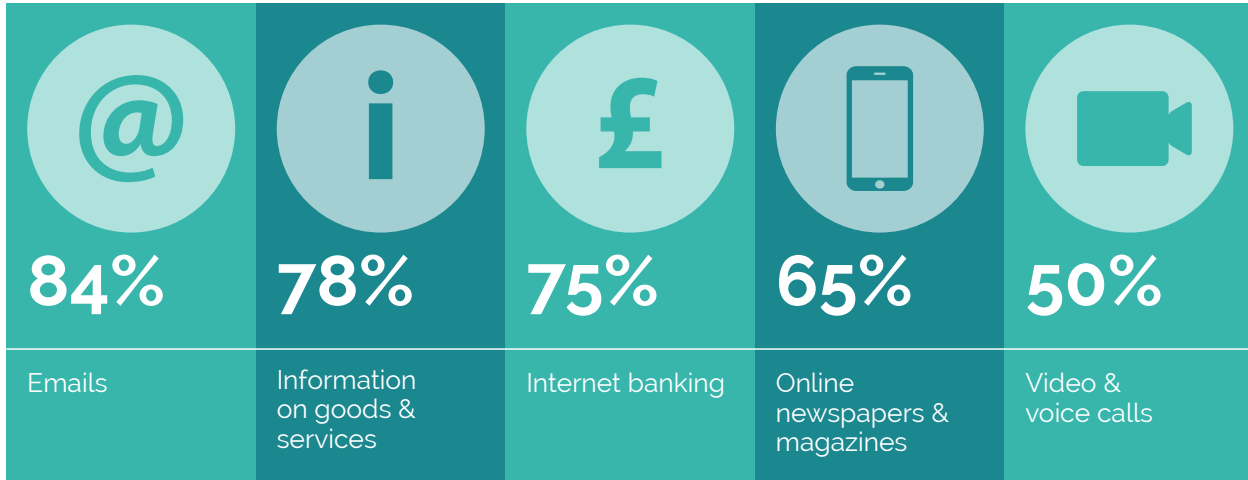
**Broadband universal service obligation** provides that, from March 2020, residents without access to a 'decent broadband connection' can request an upgraded connection.

The **Green homes grant (2020)** will help ensure increased working from home reduces net carbon emissions. The grant offers households vouchers worth up to £5000 (£10,000 for poorer households) to spend on measures like insulation and double-glazing.

DEFRA's **Green deal for residential landlords** helps landlords and tenants make energy saving improvements to their homes without paying for all the costs upfront, and the **Energy Company Obligation (ECO)**, which helps lower-income families improve their homes' energy efficiency.

# Key Facts<sup>6</sup>

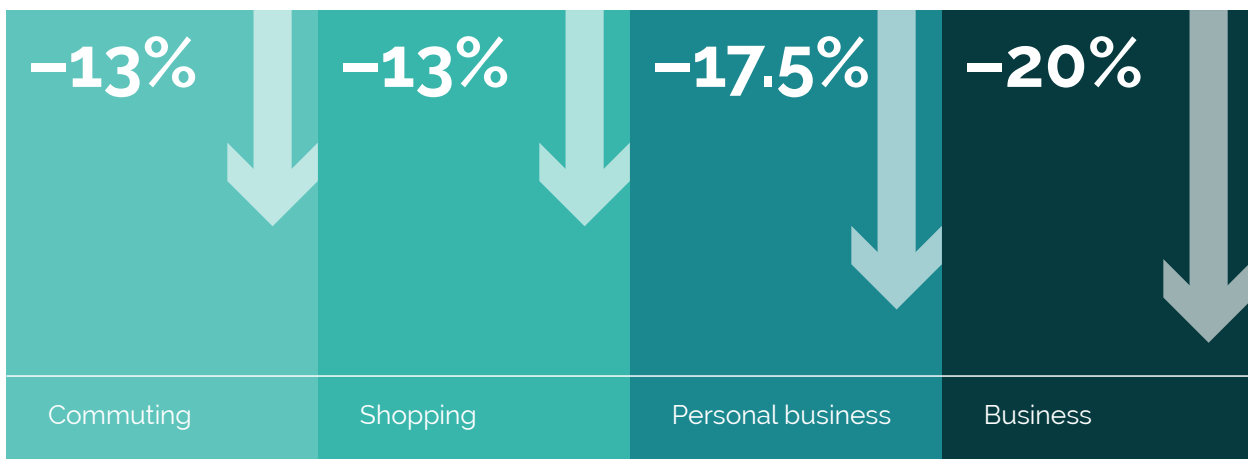
## Proportion of people using the internet, 2019



## Online shopping



## Change in average number of trips, 2002 to 2018



# Policy Recommendations

This is a comparatively new policy area for action by local government. The evidence on what works is still being established, and measures to support reducing travel are only part of the picture, alongside investment in public transport and active travel.

Policies to support online work can accelerate its adoption in ways which lock in carbon reduction. As major employers, local authorities themselves can be at the vanguard of good practice. They also have significant influence through their relationships with universities, the NHS, their suppliers, and other major employers.

The shift to online services and shopping also impacts the volume of freight which assesses housing and businesses, creating new requirements for local authorities to manage this.

## Area for Action 1: Supporting remote working

Employment is changing. There has been a slow but steady rise in people reporting that they mainly work from home (5 per cent prior to coronavirus), and in people reporting that they sometimes work from home, from 23 per cent (2008) to 30 per cent (2020).<sup>5</sup>

Fewer people work from one fixed location and working hours are becoming less defined around the traditional 9 to 5 pattern.

To date however, evidence for the carbon reduction benefits of working from home has been limited, for two reasons:

First, early adopters of remote working traded fewer commute days for longer commute distances. Commuting less allowed them to benefit from cheaper housing further from the city.

Non-urban living is associated with greater car dependence for all travel (not just commute), so there is a risk that this move to longer, less frequent, commutes, could create greater car use overall.<sup>7</sup>

Second, the transport carbon saving from homeworking needs to be offset against the increased carbon from domestic heating during the working day. Generally, per worker, homes are less energy efficient than offices and this matters a lot in winter.

This gap may reduce in the future given that increasing numbers of councils (68 per cent) are now focused on making housing more energy efficient, and on longer-term strategies to decarbonise domestic heating.

The UK Government has announced a Green homes grant for insulating homes, with poorer households eligible for grants of up to £10,000.

There are options to claim tax relief on 'phone bills, gas and electricity consumed for work-related purposes when having to work from home'.<sup>8</sup> Councils can help to promote these opportunities locally.

Coronavirus has changed the debate on remote working. Until recently, the option to work remotely was only offered to a minority of workers. During lockdown, however, many roles previously not eligible for home working, became, overnight, 'must work from home' roles.

Similarly, meetings which previously had to be attended in person, rapidly shifted online. As social distancing restrictions persist for office work, there is currently great scope to reduce commuting and business travel for an extended period, and for much of this to stick in the long-term.

### WHAT IS NEEDED TO SUPPORT LOW-CARBON REMOTE WORKING?

Provision of **high-quality** broadband of reliable speed and wider geographical coverage.

Re-energising **workplace travel plans** and working with businesses in your area to plan for a managed lower-carbon return to work.

**Staggered** opening hours and **flexible working** weekly rotas.

Promotion of **lift-sharing**, and prioritised discounted car-parking for car-sharers.

Discounted **public transport** passes and ticketing schemes which **reward loyalty** rather than daily use of the system.

Encouraging the use of **parking cash-out** schemes which reward staff for lift-sharing or leaving their cars at home.

Continuing to support programmes of home energy efficiency and **insulation**.

### Examples

The 'Carnet' flexible ticketing scheme trialled by Govia Thameslink Railway between Bedford and Brighton is aimed at part-time workers who don't necessarily travel every day.<sup>9</sup>

Workplaces that operate parking cash-out schemes include universities (eg Leeds, York, Sheffield) and hospitals (eg Derriford General, York teaching hospital).

68 per cent of councils that declared a climate emergency are prioritising decarbonisation of heating, and making available grants for retro-fitting heating and insulation in private residential and council-housing.

Some key examples of this kind include the Leeds Affordable Warmth Strategy 2017-2030, and the Kent and Medway Warm Homes scheme.

## Area for Action 2: Replacing business travel with online meetings

Business travel or 'personal travel in the course of work' is a major source of transport carbon emissions, which has great potential for substitution by online communication.

Business travel accounts for only 3 per cent of total trips made (excluding short walks), but 9 per cent of all miles travelled in England. This is because business trips are, on average, over two and a half times longer than the average trip.<sup>10</sup>

Business travel is generally paid for at the employer's expense. We can expect employers to look for financial savings in this area, given that the coronavirus lockdown has shown that many meetings can be easily moved online.<sup>11</sup>

To ensure this shift is maintained there are two key actions:

- First, business travel should form part of all business engagement around workplace travel planning. Councils are also major procurers of services and can build requirements around business travel reduction into their procurement processes.
- Second, councils can also take a leadership role in reducing unnecessary car-based work journeys.

Case studies in York, Bristol and Woking show that shifting towards the use of shared fleet vehicles, rather than employees' own vehicles, for work-based journeys reduces the business miles driven, encouraging staff evaluate the need for a journey to be made at all.<sup>12</sup>



## Examples

The Bristol workplace travel network, run by Bristol City Council, brings together over 100 local businesses to offer sustainable travel solutions. It also has a dedicated award scheme and grants available for businesses to focus on particular measures.<sup>13,14</sup>

Arup (Solihull office) incorporated a car-share platform supplemented with behavioural change schemes from Liftshare. Within four years of its implementation, 48 per cent of the employees were reported to be travelling sustainably.<sup>15</sup>

## Area for Action 3: Managing increased online delivery

It is highly likely that online shopping reduces transport carbon emissions compared to conventional shopping, but the calculation of the exact carbon saving from online shopping is complex.

It depends on the extent to which a purchase was preceded by a physical trip to browse, and the organisation of the supply chain for home delivery compared with in-store purchase.

In addition, there has been much concern about the rise of largely diesel delivery vans operating in busy urban areas and residential streets, which contribute to poor air quality, congestion and loss of local amenity.<sup>16,17</sup>

There has, however, been a steady increase in the number of e-van registrations since 2017, though so far this only accounts for 0.3 per cent of all vans in use.

Provision of plug-in grants and the need to phase out fossil-fuelled delivery vehicles by 2032 will further the increase in alternative delivery modes that are clean and more efficient, including e-cargo bikes.<sup>18</sup>

Cargo bikes can replace up to 10 per cent of conventional vans in areas where the last mile delivery is no more than 2 km, without changing the overall network efficiency.

Additionally, they can reduce urban logistics life-cycle CO2 emissions by up to 73 per cent.<sup>19</sup>

Highly efficient sorting, management, and ensuring correct delivery of parcels can lead to significantly lower transport emissions: 25 times lower than the baseline emissions of a private car trip for purchase in-store.<sup>13,14</sup>

Such reductions rely on the ability to consolidate and optimise delivery routes. The quicker the promised delivery (eg next-day, same-day), and the narrower the delivery slots (one hour, two hours or AM/PM), the lower the carbon efficiency of online shopping becomes. However, failed deliveries are capable of releasing an additional 15-20 per cent CO2 emissions and 10 per cent of other pollutants.<sup>20</sup>

Click-and-collect options reduce emissions if they allow goods to be picked up from a nearer shop than would otherwise have been visited, or if they are picked up as part of another journey. They also guarantee that the goods are available and avoid wasted trips.

Almost 40 per cent of all non-store retail sales are delivered through next-day or same day-delivery, while click-and-collect options account for almost 10.5 per cent.<sup>21</sup> Compared with traditional delivery method, drop and collect points could reduce emissions by between 26 per cent and 40 per cent.<sup>20</sup>

As well as thinking about how to reduce the number of delivery vans required, it is necessary to plan safe parking space for deliveries. Failure to provide adequate space or to manage the consolidation of deliveries can lead to pavement, cycle path or road blocking; adding to safety risks, congestion and pollution.<sup>22</sup>

The shift to online shopping is not an entirely positive one from a council perspective, as reduced footfall in local shopping areas impacts on retail vitality.

Social distancing restrictions are further accelerating these trends, with 33 per cent of all sales being made online in May 2020 – around double the pre-pandemic levels.

Whatever a council might think of online retail, it represents a major social and economic change which has not yet peaked. The evidence seems to show that, in transport decarbonisation terms at least, online retail offers some opportunities.

### WHAT IS NEEDED TO REDUCE EMISSIONS FROM DELIVERY VEHICLES?

Introducing **low emission zones** to drive up the environmental performance of delivery vehicles.

Supporting and funding the development of **cargo bikes and e-cargo bike** schemes for last-mile delivery in town and city centres.

Ensuring that there is provision within the local plan for adequate **goods warehousing space**, so that last mile deliveries have suitable coordination points.

Working with retailers to develop a comprehensive and easy to access **drop-box locker and shop-based collect and returns** network.

Providing **adequate safe delivery space** to avoid vehicles blocking pavements, cycle lanes or carriageway with associated safety and congestion risks.

Enforcing **no stopping regulations**, prioritising areas with higher levels of vulnerable road users.<sup>17</sup>

### Examples

Transport for London offers grants of up to £9,500 for scrappage of older vans which are replaced by electric vehicles.<sup>23</sup>

Preliminary estimates indicate that after six months CO2 emissions from road transport in the central zone have reduced by 4 per cent (9,800 tonnes) compared to a scenario where there was no Ultra Low Emission Zone (ULEZ).<sup>24</sup>

Royal Mail Group's overseas parcel delivery business, GLS, operates in 41 countries. They use e-cargo bikes to make deliveries in a number of these, including Italy, where e-cargo bikes have been in use since 2008.<sup>25</sup>

# Conclusion

Enabling more activities to move online for more people is a key part of the overall transport decarbonisation toolkit. Distances travelled by car must fall if the UK is to meet its climate commitments.

Face to face encounters will continue to be an essential part of society and what makes places great to visit. However, the recent experience with coronavirus has enabled us to see that much more could be done online than had previously been thought possible.

There will be wider benefits to such a strategy. Staggered working hours and fewer people travelling at peak hours will reduce demand for additional road provision and the costs of expanding peak hour public transport.

This approach will also bring health and wellbeing benefits to local residents, by improving air quality, reducing the stress caused by rush hour traffic, and by making the streets quieter and safer for pedestrians and cyclists.

A climate smart recovery will involve working with businesses, retailers, distributors and communities to lock in as many of the benefits of travelling less as possible, and to design out the potential downsides.

Councils can play a key role here by using a variety of behaviour change, funding, restriction and procurement strategies to create conditions which maintain and reinforce the benefits of travelling less.

# References

- 1 West Yorkshire Combined Authority and Leeds City Region Partnership, W.Y.C.A.a.L.C.R.E., (2020), Tackling the Climate Emergency: Emission Reduction Pathways report. West Yorkshire Combined Authority Leeds, UK
- 2 Department for Transport, (2019), National Travel Survey England 2018. Department for Transport.
- 3 Office of National Statistics, (2020), Coronavirus and homeworking in the UK labour market: 2019. Office of National Statistics: United Kingdom.
- 4 Le Vine, S., J. Polak, and A. Humphrey, (2016), Department for Transport: Commuting trends in England (1988-2015). Department for Transport: United Kingdom.
- 5 Office of National Statistics. (2019). Labour market economic commentary - Office for National Statistics. 2020/05/14/10:33:42]; Available from: [www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/labourmarketeconomiccommentary/april2020](http://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/labourmarketeconomiccommentary/april2020)
- 6 Office of National Statistics, Internet access – households and individuals, Great Britain - Office for National Statistics. 2019 2020/05/05/14:34:03]; Available from: [www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/bulletins/internetaccesshouseholdsandindividuals/2019](http://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/bulletins/internetaccesshouseholdsandindividuals/2019)
- 7 Hook, A., et al., (2020), A systematic review of the energy and climate impacts of teleworking. Environmental Research Letters.
- 8 Gov.UK. Claim tax relief for your job expenses. GOV.UK 2020 2020/07/06/09:46:47]; Available from: [www.gov.uk/tax-relief-for-employees/working-at-home](http://www.gov.uk/tax-relief-for-employees/working-at-home)
- 9 Thameslink. (2020). What are Carnet Train Tickets | How Much is a Carnet Ticket | Thameslink. 2020 2020/05/31/15:40:03]; Available from: [www.thameslinkrailway.com/tickets/carnet-tickets/https://www.thameslinkrailway.com/tickets/ticket-types-explained/carnet-tickets](http://www.thameslinkrailway.com/tickets/carnet-tickets/https://www.thameslinkrailway.com/tickets/ticket-types-explained/carnet-tickets)
- 10 Office of National Statistics, (2020). Purpose of travel. GOV.UK 2018 2020/05/29/14:02:52]; Available from: [www.gov.uk/government/statistical-data-sets/nts04-purpose-of-trips](http://www.gov.uk/government/statistical-data-sets/nts04-purpose-of-trips)
- 11 Lindeblad, P.A., et al., (2016), Organisational effects of virtual meetings. Journal of Cleaner Production. 123: p. 113-123.
- 12 Enterprise Car Club. (2020). Case Studies - Enterprise Car Club. 2020 2020/07/07/19:39:50]; Available from: [www.enterpriseclub.co.uk/gb/en/case-studies.html](http://www.enterpriseclub.co.uk/gb/en/case-studies.html)
- 13 Braithwaite, A., (2017), The Implications of Internet shopping growth on the Van fleet and Traffic activity. RAC Foundation.
- 14 Edwards, J. and A.C. McKinnon, 2009, Shopping Trip or home delivery: which has the smaller carbon footprint?
- 15 Liftshare.com, 2020, Arup – Liftshare for work.
- 16 Topham, G., (2020), How London got rid of private cars – and grew more congested than ever, in The Guardian.
- 17 Urban Transport, G. (2018). Growth in van traffic creating 'considerable challenges' for UK cities, finds report. Urban Transport Group 2018 2020/05/07/10:44:15]; Available from: [www.urbantransportgroup.org/media-centre/press-releases/growth-van-traffic-creating-%E2%80%98considerable-challenges%E2%80%99-uk-cities-finds](http://www.urbantransportgroup.org/media-centre/press-releases/growth-van-traffic-creating-%E2%80%98considerable-challenges%E2%80%99-uk-cities-finds)
- 18 Fuller, R., (2018), The Last mile: a call for Evidence on the opportunities available to deliver goods more sustainably. Urban Transport Group: United Kingdom.
- 19 Melo, S. and P. Baptista, (2017), Evaluating the impacts of using cargo cycles on urban logistics: integrating traffic, environmental and operational boundaries. European Transport Research Review. 9(2).
- 20 McLeod, F. and T. Cherrett, (2011), Loading bay booking and control for urban freight. International Journal of Logistics Research and Applications. 14(6): p. 385-397.
- 21 Savills Commercial, R., 2018, Retail Revolutions: Exploring the impact of E-commerce on Local Physical Retailing.
- 22 Ramadan, A. and M. Roorda, (2017), Impacts of illegal on-street parking on Toronto's CBD congestion. Canadian Transportation Research Forum: Toronto, Canada.
- 23 Transport for London, (2020). Scrappage scheme for vans and minibuses. Transport for London 2020 2020/07/07/19:47:25]; Available from: [www.tfl.gov.uk/modes/driving/ultra-low-emission-zone/scrappage-scheme](http://www.tfl.gov.uk/modes/driving/ultra-low-emission-zone/scrappage-scheme)
- 24 Greater London Authority, (2019), Central London Ultra Low Emission Zone- Six Month Report: Greater London.
- 25 Department for Transport. (2019). The Last Mile – a call for evidence. GOV.UK 2019 2020/08/05/13:55:04]; Available from: [www.gov.uk/government/consultations/the-last-mile-a-call-for-evidence](http://www.gov.uk/government/consultations/the-last-mile-a-call-for-evidence)

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