

## Written evidence submitted by the Go-Ahead Group (EVP0108)

### Background

Go-Ahead is a leading UK public transport operator, providing high quality services. We run bus companies across the country, from Plymouth to Newcastle, and provide a quarter of Transport for London (TfL) services. Nationally we have 5,200 buses, and pre-pandemic we carried more than two million passengers a day.

We have also led the call for the creation of a National Bus Strategy to revitalise a mode of transport which provides two-thirds of all public transport journeys in the UK. The Government's stated commitment to a Bus Strategy and investment in 4,000 new electric buses should be part of a green recovery from the pandemic.

Internationally, we provide bus services in Singapore and Ireland, and rail services in Germany and Norway. Go-Ahead has two major UK rail franchises carrying around 30% of all passenger journeys, Govia Thameslink Railway and Southeastern. We employ around 30,000 people globally.

### Summary

A widespread transition to zero emission vehicles in the UK is welcome. Achieving net zero will also need behavioural change to greater use of active travel and public transport.

Go-Ahead is the largest operator of electric buses in the UK and aims to have a zero emissions bus fleet by 2035. The Government's commitment to 4,000 new zero emission buses is welcome but it needs to urgently introduce a deliverable funding model and reform the Bus Services Operators Grant (BSOG). A transition to zero emission buses also needs joined up energy infrastructure planning, and modal shift to bus use to realise the full value of the investment.

Road pricing can address the loss of fuel duty revenue and enable efficient allocation of road space with more room for buses, cycling and walking. We recommend prioritising urban schemes that tackle both congestion and vehicle emissions. Public opinion is moving in favour of road pricing and this should be encouraged with a vision of living, healthy streets and faster, more reliable journeys.

### 1. Accelerating the shift to zero emission vehicles

#### *Zero emission across modes*

- 1.1. Go-Ahead supports an overall transition in the UK to zero emission for vehicles of all types, as a key strand in UK strategy to achieve net zero emissions by 2050.
- 1.2. However, the issues need to be looked at holistically, including the emissions involved with manufacturing vehicles and batteries. A report from the House of Commons Science and Technology Committee in 2019 stated that "The Government's current long-term targets for decarbonising transport focus heavily on reducing exhaust emissions and increasing sales of low-emissions vehicles, rather than delivering a low-emissions transport system. In the long-term, widespread personal vehicle ownership does not appear to be compatible with significant

decarbonisation”<sup>1</sup>. Zero emission technology for buses and trains needs to move faster than that for cars, because ultimately we need to have less vehicles on the road.

- 1.3. The principle of reducing car use needs to be at the heart of the approach to decarbonising transport and to introducing road pricing. As we emerge from the pandemic we would like to see Government messaging emphasising ‘Walk and cycle if you can, use the bus or the train, only use the car if you need to’. This would help counteract the ongoing negative consequences of the ‘avoid public transport’ message of the first lockdown, and be in line with the Government’s Ten Point Plan aim to ‘increase the share of journeys taken by public transport, cycling and walking’.

#### *Go-Ahead and electric buses*

- 1.4. Go-Ahead is the largest operator of electric buses in the UK, and we will have 260 in our fleet by April. Most of these are in London but we recently introduced the first fleet of electric buses in North East England, where they are running 55,000 annual journeys linking Newcastle and Gateshead.
- 1.5. Go-Ahead led the industry by working with TfL and other local partners to establish Europe’s first all-electric Waterloo bus garage in 2016. The depot has had visitors from 120 countries and won the Energy Globe world award for sustainable energy in 2019.
- 1.6. Our depot at Northumberland Park in London is believed to be the largest overnight charging electric bus garage in Europe with 117 zero emission buses. In time the depot will provide charging facilities for third party vehicles and has the potential to become a ‘virtual power station’ by taking energy from parked buses and feeding it back into the grid.
- 1.7. Go-Ahead is innovating to overcome challenges in the transition to zero emission. In 2019 we introduced 30 new extended range double decker buses in Brighton & Hove that use geo-fencing technology to operate in zero emission mode throughout the city’s Low Emissions Zone.
- 1.8. Go-Ahead is developing a transition plan to achieve our goal of a zero emission bus fleet by 2035 but remain dependent on Government for both funding and policies to ensure this is achieved. It is vital that we replace old diesel buses with zero emission buses to maximise the contribution of buses to the environment;

#### *What we need from Government*

- 1.9. We were delighted by the commitment made by the Prime Minister in February 2020 to 4,000 new zero emission buses during the course of this Parliament<sup>2</sup>. However, we are concerned that there has been insufficient follow through on delivery of this pledge, despite the Spending Review commitment to spend £120m on zero emission buses in 2021/22. From investment approval we anticipate a period of 9-18 months to bring new buses into service, depending on the level of infrastructure readiness.
- 1.10. Previous funding models involving a Government top up contribution to the capital cost of low or zero emission buses, such as through the Ultra Low Emission Buses Scheme (ULEBS) can, on their own, no longer work given our current inability to fund capital investment. Under the Covid-19 Bus Services Support Grant (CBSSG) mechanism our bus services outside London are delivered on an ‘at cost’ basis with no ability to earn a margin.
- 1.11. A potential solution could involve a leasing model where operators pay a regular fee in exchange for long term use of the bus. The purchase of these buses would be financed through a combination of government and private investment. A form that the leasing model could take would be to lease the battery (separately to the bus) and

include within the lease price the replacement of the battery within the mid life of the vehicle (the battery cost is about £150,000).

- 1.12. However, the leasing model on its own would increase operating costs risking the viability of bus services and potentially create pressure to increase fares at a time when we want to encourage customers back. The solution is to reform BSOG to address this and ensure that zero emission mileage is incentivized, i.e. a Green BSOG. A consultation on BSOG reform is expected soon and we hope it will deliver solutions, such as the Scottish approach of relief being provided for service mileage rather than fuel usage.
- 1.13. Other measures that Government needs to take include strategic policy on infrastructure provision (covered further in 1.17 and 1.18) and in enabling modal shift to bus use through bus priority and demand restraint to realise the investment value.
- 1.14. A 10% increase in bus speeds can lead to a 10% increase in passenger numbers, helping prove the business case for new zero emission buses. In the case of Crawley's Fastway network, a series of bus priorities delivered by West Sussex County Council in partnership with Metrobus enabled 160% growth over ten years and 19% reduction in car trips. Only 4% of UK roadside emissions come from buses, modal shift on to buses will increase its contribution to tackling climate change and improving air quality
- 1.15. In Oxford we are working with the local authorities on the business case for a potential Electric Bus City, and we regard the bus priorities that their 'Connecting Oxford' scheme can deliver as critical to making the project viable.

#### *Challenges with transition*

- 1.16. The transition to zero emission fleets involves significant cost, considering the capital for the vehicles and the infrastructure, alongside the operating costs. Range and annual mileage influence the economics and Whole Life Costs are difficult to model whilst battery technology continues to mature and real operating costs emerge.
- 1.17. Charging infrastructure in depots is an additional £1m - £2m cost dependent on the availability of supply locally, and coordinating power suppliers and planning authorities can be complex. There will be a need to change depot design and layout and the challenges will vary according to location.
- 1.18. Effective liaison with power companies and planning authorisations is important. The process and cost of electrifying depots is highly variable depending on the demands upon, and capacity of the local supply networks. These variable start-up costs require public sector involvement through a joined-up strategy to enable more depots across the country to be converted to all-electric.
- 1.19. Operating costs can involve increased numbers of buses and drivers to run the services, due to time out required for battery charging, particularly where routes involve hilly topography, heavy passenger volumes and poor weather conditions.
- 1.20. Opportunity charging (e.g. using a pantograph with a gantry on the route) to increase vehicle range is not as common in the UK as in other European countries, and the planning issues are complex. The current typical range of an electric bus in the UK is about 150 miles, we expect this to increase to 200 within 2-3 years. At that point the proportion of vehicle running boards that can be covered by the maximum range rises up to 76% for our regional bus routes (current level is 46%).
- 1.21. Whilst 'total cost of ownership' models indicate that over the long term (10 years plus), battery and diesel are close to parity, there are significant costs involved with battery replacement, and there is uncertainty as to whether the battery would need replacing once or twice during the 15 year life cycle of the vehicle. Transitioning to a

battery leasing model with warranty support from manufacturers would help prove the case and avoid unknown cost.

- 1.22. With significant UK bus manufacturing capacity in the UK, providing a tranche of orders would give a significant boost to this critical sector. The Confederation of Passenger Transport has indicated this could help secure 10,000 UK jobs<sup>3</sup>.

### *Hydrogen potential*

- 1.23. Go-Ahead has demonstrated the use of a hydrogen double decker on our Metrobus services, and is in discussions with partners about a potential project to introduce as many as 52 hydrogen fuel cell buses on to Metrobus routes in Sussex and Surrey.
- 1.24. Hydrogen fuel cell can potentially deliver zero emission buses which don't require as much as infrastructure as conventional electric. The fuelling process involved is similar to diesel and depot layouts don't need to be changed providing space is available for hydrogen tube trailers. The dispenser required to input fuel may trigger a need for an electricity upgrade due to the power required.
- 1.25. A big advantage over conventional electric is that range is similar to diesel as the battery is constantly recharged by hydrogen fuel cells. Therefore there is no incurring of the additional costs involved with a need for an increase in drivers and vehicles.
- 1.26. The capital cost of fuel cell vehicles is more expensive (£550k for a double decker compared with £220k for a Euro 6 diesel or £400k for a conventional electric). However, with only 5% of the battery volume required for hydrogen fuel cell versus full electric there is anticipated to be better lifetime usage. (The life of a fuel cell battery is unclear, but cost of replacement is expected to be less).
- 1.27. Fuel cell hydrogen also offers less dependence on China/Africa for the scarce minerals needed to make batteries. The fuel is more expensive than diesel although more efficient by providing better density.
- 1.28. Key factors for fuel cell adoption going forward will be the availability of local hydrogen supply and the ability to pool sourcing of supply with other fleets.
- 1.29. Fuel cell remains limited in its use across vehicle types, so there is not the level of technology transfer from cars and lorries that there is for conventional electric. However, this could provide an opportunity for buses to lead. Dr David Hart, visiting professor at the Imperial College Centre for Environmental Policy said "Building hydrogen filling stations without many vehicles to make them financially viable has been a sticking point, but regional commercial fleets of trucks, taxis and buses offer a solution. The original thinking was to build a lot of filling stations and have cars travelling between them. Now the thinking is to establish fleets in specific areas to create nodes. Once there are enough areas, they can be joined up."<sup>4</sup>
- 1.30. Go-Ahead believes there are opportunities and challenges with different alternative fuels, often dependent on location. At this stage it would be wrong to attempt to focus solely on a single solution and a mixed approach is favoured.

## **2. Road pricing**

### *The case for road pricing*

- 2.1. As stated by TSC Chairman Huw Merriman, the transition to electric vehicles, accelerated by the Government's ban on sales of new petrol and diesel cars by 2030, could lead to a potential '£40billion annual fiscal black hole, due to the reduction in fuel duty and vehicle excise duty'. We agree with his conclusion that 'something will need to change'

- 2.2. Road space continues to be a scarce resource, even with Covid impacts. Despite a situation where a third of the working population was either furloughed or working from home, car use reached 92% of pre-Covid levels by Monday 21 September<sup>5</sup> and analysis of GPS data showed congestion in outer London reached 153% of normal levels when schools returned that month<sup>6</sup>.
- 2.3. A scarce resource can be allocated either through rationing, queueing (congestion) or by pricing. In the past an argument has been offered that fuel duty provided road charging by proxy, but a shift to electric cars will further decrease the variable costs associated with driving, with the only mileage related taxation being the 5% VAT rate on electricity.
- 2.4. With electric cars being an expensive purchase the incentives for their owners to then use active travel and public transport inevitably becomes limited. With the purchase cost likely to decrease over time, variable costs on driving electric cars are needed both to recoup lost Treasury revenue and to encourage car owners to use greener modes of travel when they can.

*Appropriate schemes for UK context*

- 2.5. Ultimately some form of national road pricing scheme may be needed to address the fiscal black hole, and we understand this concept is being considered by the Treasury. There would be significant challenges in introducing a scheme of such scale and it is important that Government progresses carefully to avoid the risk of abortive attempts that fail to secure the public support needed to sustain this approach.
- 2.6. A previous attempt to introduce national road pricing in the UK in 2007 failed due to public opposition, fuelled by concerns over ‘winners and losers’, privacy invasion and practical concerns. At the time it was envisaged such a scheme may apply to just the strategic road network but GPS has led to significant changes in the way the UK’s roads have been used since. Between 2009 and 2019 traffic increased on minor roads by 25.6% as opposed to the strategic road network which rose by 14.8%<sup>7</sup>.
- 2.7. The challenges involved with national IT programmes would support a more phased approach with road pricing focused initially more on urban schemes that can reduce congestion. As a bus operator we know the impact that congestion has on the viability of our services. A 10% decrease in bus speeds can reduce patronage by 10% or more, especially when increased congestion leads to increased variability in journey times. At the start of 2020 it was the case that five routes provided by our Go North East bus company each cost £100k extra to operate compared with five years ago. In January 2020 we removed our X90 service between Oxford and London after a 50% increase in journey time due to congestion.
- 2.8. Whilst conventional ‘congestion charging’ hasn’t taken off in the UK (beyond London and small scheme in Durham) the concept hasn’t gone away and remains part of ongoing debate about cities and their transport networks.
- 2.9. Charging schemes have emerged in recent years focused on the most polluting vehicles. London’s Ultra Low Emissions Zone (ULEZ) scheme, which operates alongside the Congestion Charge, is being extended to North/South Circular in October 2021. Birmingham is introducing a similar ‘clean air charge’ from June 2021 of £8 for petrol cars pre 2006 and diesels pre 2015. Bath will have similar from March 2021.
- 2.10. The growing linkage with air quality is welcome in terms of gaining political traction, but risks leading to a situation of ‘clean congestion’ and overlooks the need for a genuine shift to active travel/public transport to achieve net zero. Schemes that charge purely on vehicle emissions are arguably regressive (as electric car owners will

have higher average income) and will deliver a depleting source of revenue over time as electric vehicles become more widespread.

- 2.11. Go-Ahead believes that, for the medium term, road pricing should be focused on introducing urban schemes that address both emissions and congestion, with carefully managed transitions aimed at building and sustaining public support. The ‘boundary charge’ for Greater London recently proposed by TfL could fulfil this criteria as it would involve a charge of £3.50 per day for all vehicles, with an additional £2 surcharge for those not compliant with the ULEZ.
- 2.12. Such ‘hybrid’ forms of urban road pricing could generate a ‘virtuous circle’ where active travel becomes more attractive on quieter streets, less filled with cars, and bus services speed up, attracting more passengers and becoming more viable. There is a big prize to be gained but we need to take the public with us.

#### *Levels of public support*

- 2.13. In 2020 IPSOS Mori undertook research on the appetite for schemes aimed at charging road users to drive into towns and city centres– initially amongst ‘captains of industry’ and then amongst the public<sup>8</sup>. The principle of charging for town/city centre access was supported by 60% of the public and 82% of ‘captains’. The 60% support amongst the public was a clear shift from when they were asked the same question back in 2007 (the figure then was just 33% support with 48% opposed).
- 2.14. The research also showed more support for congestion charging when linked to tackling climate change and improving air quality. There was 69% public support for charging polluting vehicles more (pointing to the need for ‘hybrid’ schemes) and 65% and 63% support for using revenues to tackle air quality and climate change respectively.
- 2.15. It is vital that communities are presented with a positive vision of what roads that are easier to walk and cycle on, with improved air quality, can be like, to avoid the focus being on the negative ‘taxation’ aspect of car charging. The use of small scale trials and part closure of certain roads can be part of this, but it is important to act on the basis of public research and insight. Local authorities will need to listen and engage well with their communities and stakeholders bringing all sections of the community. The IPSOS Mori research highlights the importance of charging schemes being part of a wider transport and emissions strategy, rather than simply a mechanism to replace other tax revenues.
- 2.16. In particular, urban congestion/emission charging can provide funding for zero emission buses. Brighton and Hove Buses recently produced a multi-stakeholder video highlighting local air quality issues and how buses are part of the solution. It includes customer comment showing an understanding of the value of their extended range electric geofenced buses in this<sup>9</sup>.

#### *International evidence*

- 2.17. Go-Ahead has been operating buses in Singapore since 2016. The city state has had electronic road pricing since 1998; the system uses city-wide charges on the basis of the type of vehicle and the route congestion at specific times and locations, enabling traffic reduction, increased speeds and high journey reliability. In parallel public transport use is encouraged through high frequency bus services and parking restrictions. An extensive pedestrian and cycle network encourages active travel, and the use of e-scooters is regulated for safety purposes.
- 2.18. Despite strong population growth, the charging system has reduced traffic in the inner city by 24% average vehicle speeds have increased from around 20 mph to 26mph,

and bus and train usage has increased by 15%<sup>10</sup>. In addition to attractive bus journey times, the limited variability of traffic conditions helps to ensure excellent bus service reliability. Favourable traffic conditions also lead to lower costs of operation compared with those in heavily congested cities.

- 2.19. While there are aspects of Singapore's provisions which may not be accepted in the UK (i.e. restrictions on car ownership through the controlled supply and high cost of licence plates), public support for the benefits achieved through charging and public transport investments is mirrored by that in London and Stockholm. A scheme is expected to be introduced in New York City within the next two years.

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## Endnotes

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<sup>1</sup> [https://publications.parliament.uk/pa/cm201719/cmselect/cmsctech/1454/145408.htm#\\_idTextAnchor085](https://publications.parliament.uk/pa/cm201719/cmselect/cmsctech/1454/145408.htm#_idTextAnchor085) (para 131)

<sup>2</sup> <https://www.gov.uk/government/news/major-boost-for-bus-services-as-pm-outlines-new-vision-for-local-transport>

<sup>3</sup> <https://www.cpt-uk.org/news/green-bus-revolution-cpt-launches-vision-to-deliver-4000-zero-emission-buses/>

<sup>4</sup> <https://www.autocar.co.uk/car-news/features/hydrogen-cars-explained-technology-targeting-fuel-cell-future>

<sup>5</sup> <https://www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic>

<sup>6</sup> <https://www.theguardian.com/environment/2020/sep/15/road-congestion-levels-in-outer-london-higher-than-before-lockdown>

<sup>7</sup>

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/916749/road-traffic-estimates-in-great-britain-2019.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/916749/road-traffic-estimates-in-great-britain-2019.pdf)

<sup>8</sup> <https://www.ipsos.com/ipsos-mori/en-uk/public-support-charging-motorists-use-roads-want-it-be-done-right-reasons>

<sup>9</sup> <https://www.buses.co.uk/environment-resource-centre>

<sup>10</sup> [https://nyc.streetsblog.org/wp-content/uploads/2018/01/TSTC\\_A\\_Way\\_Forward\\_CPreport\\_1.4.18\\_medium.pdf](https://nyc.streetsblog.org/wp-content/uploads/2018/01/TSTC_A_Way_Forward_CPreport_1.4.18_medium.pdf)