

Written evidence submitted by Switch Mobility (BUS0017)

Introduction to Switch Mobility

Switch Mobility is a global automotive company creating next-generation electric buses and other light commercial vehicles (LCVs) with a mission to enrich lives through green mobility. Switch Mobility was formed to combine the technological leadership of Optare with the scale and strength of Ashok Leyland and the Hinduja Group, to create a driving global force in EV bus manufacturing. Prior to the creation of Switch Mobility, Optare was the one of the UK's largest bus manufacturers, with over a century's service to bus operators across the nation.

Switch Mobility is headquartered in Leeds with 300 employees, with plants in Chennai, India and Valladolid, Spain. To help the UK excel in its ambitions to decarbonise the transport system and reach net zero by 2050, our goal is to partner with operators and policymakers to bring them the best technology at least total cost, all while creating and supporting green, highly skilled jobs in the North of England. We take a holistic approach to the net zero challenge in transport, and are accredited as achieving net zero throughout our whole supply chain, not just at the point of use.

Reason and focus of our written evidence

As a UK-based zero emission bus manufacturer, we are submitting our evidence to support the Government in delivering on its ambitious plans to rollout 4,000 ZEBs in this parliamentary term, and to help ensure that this commitment is delivered in a way that delivers the full environmental and economic benefits to British taxpayers. In our evidence below, we will focus on how the pandemic has affected our part of the bus sector, rather than comment on the general landscape of bus services. As such, we will comment on the speed and effectiveness of the transition to zero emission buses, rather than on the provision of bus services themselves.

Challenges facing the sector as it recovers from the pandemic and the effectiveness of steps taken by both Government and stakeholders in response

The Government focused its pandemic support to the bus industry on maintaining bus services, for example through CBSSG & BSOG payments. We support this decision; maintaining public transport during the pandemic was crucial for helping key workers maintain their commute, and keeping society running.

The pandemic massively reduced the public transport use – the number of local bus passenger journeys fell by 61% in the year ending March 2021.¹ From a manufacturing perspective, this resulted in reduced demand for both ICE and zero emission buses, both due to the lower demand and the financial constraints facing operators (this is particularly true for ZEBs, which have a higher upfront cost than ICE vehicles). In 2021, UK bus and coach registrations fell to their lowest recorded level – with the number of double-deck bus registrations falling 35% over the year.²

In this context, the government's decision to launch the ZEBRA scheme was an excellent response. By providing funding to meet up to 75% of the agreed difference between the price of the electric bus and its diesel equivalent, and up to 75% of the agreed infrastructure costs, the ZEBRA scheme provided a strong incentive for new ZEB orders.

However, it also meant that operators had no incentive to buy ZEBs outside of the scheme, meaning that non-ZEBRA orders and diesel orders have reduced dramatically. This has been compounded by the funding challenges of TFL. The decline of bus orders outside of the scheme, which was to be expected given the macroeconomic conditions, meant that manufacturers were reliant on ZEBRA funding to keep their order books full. Regrettably, despite the announcement of the £71 million fast track winners and £198 million standard track winners, no ZEBRA funding has yet reached manufacturers. These delays have resulted in the UK order books of all three UK manufacturers almost entirely drying up. Whilst we recognise authorities delegate the purchase of vehicles to operators the time between funding being placed and orders being placed is having a majorly detrimental impact on UK manufacturers.

We understand that ZEB rollout has faced a temporary setback in the falling bus ridership and financial constraints of the pandemic, however, the

government should now return to this agenda with renewed vigour, given the well documented benefits that the transition to decarbonised public transport will provide – not only as a tool for the Levelling Up agenda, but also as a driver of public health, ZEBs are projected to deliver up to £160m worth of air quality benefits from 2020 to 2050.³

Progress against the ambitions and targets set out in the national bus strategy, including the effectiveness, pace and priority of the strategy's implementation

From the perspective of ZEB procurement, the government's progress against its ambitions, as set out in the National Bus Strategy, has been poor. As detailed above, so far, no funding from the ZEBRA scheme has actually reached manufacturers, so we have been unable to start work on any ZEBRA orders.

While the Government can claim in some ways to be on target to meeting its commitment to fund 4,000 ZEBs by the end of the parliament, this will be a hollow victory if none of that funding has actually reached manufacturers.

To look at the bigger picture, the pace of the government's ZEB rollout could be far more ambitious, with its projections indicating that it will decarbonise the bus and coach sector by (but not before) 2050.⁴ In terms of where we are now, there are approximately 40,000 locally operated buses in the UK, with over 32,000 in England. However, only 2% of England's local operator bus fleet is currently zero emission.⁵ The Government recently announced a consultation on ending the sale of new non zero emission buses, and we would strongly encourage it to elect to phase out such sales by 2025, as well as set an equally ambitious date for ending the use of non zero emission buses. We believe that, with market certainty, UK manufactures could have the capacity to transition the entire bus fleet to zero emission by between 2030 and 2035.

Switch's and other UK manufacturers' growth plans, both domestically and as international exporters, are best realised by the UK's domestic fleet making a quick transition to EV. If that transition is carried out at an impressive pace, it will open up an opportunity for UK manufactures to scale up and create jobs and investment through our export of ZEBs to other markets.

Innovation in the sector, including examples of new methods that have been trialled successfully

As a ZEB manufacturer, we are constantly innovating to improve our product, raising efficiency, lowering cost and improving range. While the continual improvement of ZEB technology is hugely important, we believe that Mobility as a Service (MaaS) has the potential to revolutionise the bus sector's push to net zero.

MaaS gives the ability to see a bus as an operational cost, rather than a CAPEX asset. You can therefore buy travel by the mile rather than owning the asset outright. This makes access to zero carbon transport more affordable, by allowing operators to avoid the high upfront costs necessitated in traditional ZEB purchases. This is particularly crucial given the financial constraints imposed by the pandemic.

Within India, a significant number of electric buses are already being run via a Mobility as a Service Model via OHM, our subsidiary. Authorities pay per kilometre rather than investing significantly in CAPEX up front. Moving to an OPEX based model is enabling authorities to move to an electric fleet more quickly and it reduces the initial CAPEX outlay. We would strongly recommend this model is considered in the UK, as it could enable a quick and cost-efficient transition to a zero-emission bus fleet.

Bus funding over the short and long term

The Government has committed to an impressive level of short term funding for the procurement of ZEBs. In Bus Back Better, the government committed to investing £120 million in ZEBs in 2021/22, in addition to the £50m investment from 2020/21 for the All-Electric Bus Town / City competition. In the 2021 Autumn Budget and Spending Review, the government confirmed £355 million of new funding for zero emission buses, including an extra £150 million in 2021/22. Of this, £71 million in funding has been committed to the winners of the fast-track stream of the ZEBRA scheme, and £198 million to the winners of the standard track.

However, despite nominally impressive commitments, manufacturers have not yet received any orders from the ZEBRA scheme, so none of that funding has been forthcoming. It is also not yet clear to us how the government intends to spend the rest of the money allocated to ZEB procurement in the Budget.

This is symptomatic of a wider issue, there is no clarity on the long term status of ZEB procurement funding. This, combined with the delays in the ZEBRA scheme, has created a great deal of uncertainty for manufacturers, which prevent us from further investing in UK staff and facilities. We urge the government to create more clarity over its funding plans in this sector.

This could be achieved by guaranteeing ZEBRA scheme funding for at least the next financial year, to continue to stimulate the market and bring down costs. Over that financial year, the Government could explore and consult on the long-term future of zero emission bus funding, with a view to introduce a system that:

- **Delivers a better funding model** – delivers a funding model in which the government provides support for operators to cover the high upfront cost of zero emission buses and infrastructure investment but reflects the savings operators will make over the total cost of ownership of the bus. Based on our analysis, over a 15-year period each electric bus costs around 8-10% less than a comparative diesel vehicle. While there is a high upfront cost, an electric transition is extremely viable in the long term. It is this high upfront cost that necessitates the need for funding to move more quickly to an electric vehicle fleet. Such a model could include:
 - Low or zero interest loans, repayable over the lifetime of the bus.
 - Incentivising Mobility as a Service funding models, by piloting them with selected LTAs and operators.
- **Provides long term certainty for the bus market** – offers guaranteed, long-term support for the conversion to zero emission buses, to enable operators and manufacturers to make investment decisions with confidence.
- **Delivers value for money for taxpayers** – as ZEB procurement uses public money to deliver a public good, it should be expected that such procurement maximises the benefits brought to the UK. This can only be done by purchasing from UK manufacturers, who create jobs and investment here, rather than shipping taxpayers' money abroad. We would recommend that the government introduce a local content requirement for selected areas of public procurement, starting at 40-45% of the total cost of the vehicle (including assembly), and rising over time.
- **Guarantees continuity of support in the short term** – the long delays between announcing and delivering ZEBRA funding has caused severe pain for all UK bus manufacturers

- **Sets ambitious deadlines for decarbonisation** - the Government recently announced a consultation on ending the sale of new non zero emission buses, and we would strongly encourage it to elect to phase out such sales by 2025, as well as set an equally ambitious date for ending the use of non zero emission buses. We believe that, with market certainty, UK manufactures could have the capacity to transition the entire bus fleet to zero emission by 2030.

Decarbonisation of the sector and modal shift from other forms of transport

The Government has committed to reaching net zero emissions by 2050, and clearly recognises that a decarbonised bus fleet will be a crucial part of this journey. We strongly support this ambition, but are concerned that the government's plans understand 'net zero' emissions in the bus sector as net zero emissions at the point of use, rather than as net zero throughout the supply chain.

The production process for zero emission vehicles is far more emissions intensive than that of their ICE equivalents. Although a slightly different sector, Volvo's 2021 life cycle assessment of their Volvo C40 Recharge electric car found that the accumulated emissions from materials, battery and vehicle manufacturing phases of production in that model was nearly 70% higher than its ICE equivalent.⁶ When considering the emissions resulting from the use phase of the vehicle, using the average EU-28 electricity mix for the electric car, the electric model only broke even on its emissions with its ICE equivalent after 77,000km of use. By average pre-pandemic UK distance travelled by car per person per year, that amounts to nearly 10 years of use to breakeven on emissions.⁷

The emissions created by the manufacture of ZEBs cannot be ignored, and will only become more important as more ZEBs are produced. The government's procurement plans only take account of tailpipe emissions, so do not distinguish between our buses and buses built in China, using emissions intensive manufacturing processes and requiring international shipping, and buses built in the UK. Switch are the only bus manufacturer certified as carbon neutral and place an emphasis on reducing emissions throughout the supply chain.

Any procurement process that fails to take these supply chain emissions into account will fail to allow bus transport to reach true net zero. Furthermore, it will indirectly contribute to shifting manufacturing jobs and investment

abroad. To help deliver on our net zero commitment, and to protect British industry, we would recommend that the government introduce a local content requirement for selected areas of public procurement, starting at 40% of the total cost of the vehicle (including assembly), and rising over time.

Our other concern is that not enough is being done to help public transport deliver on its potential to decarbonise transport as a whole. Reaching net zero will not be achieved by transitioning from ICE to zero emission vehicles on a one-to-one basis. The CCC has assessed that 17-24% of car journeys could be shifted to buses by 2050, one of several factors contributing to a drop in demand of 12-34% of total car-kilometres by 2050.⁸ Under the government's current policies, we struggle to see these figures being realised. We encourage the government to explore how bus services can be levelled up to encourage the public to increase public transport usage – the expansion of ambitious TfL style deals could well be a part of that process.

March 2022

Endnotes

¹ Department for Transport (2021). *Annual bus statistics: England 2020/1*. Retrieved from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1030718/annual-bus-statistics-year-ending-march-2021.pdf

² SMMT (2022). *UK bus and coach registrations fall to lowest recorded level as pandemic dents ridership*. Retrieved from: <https://www.smmt.co.uk/2022/02/uk-bus-and-coach-registrations-fall-to-lowest-recorded-level-as-pandemic-dents-ridership/#:~:text=Registrations%20SMMT%20News-UK%20bus%20and%20coach%20registrations%20fall%20to,level%20as%20pandemic%20ridership&text=Demand%20for%20new%20buses%20and,35.4%25%2C%20driving%20overall%20decline.>

³

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009448/decarbonising-transport-a-better-greener-britain.pdf

⁴ Department for Transport (2021). *Decarbonising Transport*. Retrieved from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009448/decarbonising-transport-a-better-greener-britain.pdf

⁵ Department for Transport (2020). *Annual bus statistics: year ending March 2020*. Retrieved from: <https://www.gov.uk/government/statistics/annual-bus-statistics-year-ending-march-2020>

⁶ Volvo Cars (2021). *Carbon footprint report Volvo C40 Recharge*. Retrieved from: <https://www.volvocars.com/images/v/-/media/Market-Assets/INTL/Applications/DotCom/PDF/C40/Volvo-C40-Recharge-LCA-report.pdf>

⁷ Department for Transport (2020). *National Travel Survey: 2019*. Retrieved from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/906847/nts-2019-factsheets.pdf

⁸ Climate Change Committee (2020). *The Sixth Carbon Budget: Surface Transport*. Retrieved from: <https://www.theccc.org.uk/wp-content/uploads/2020/12/Sector-summary-Surface-transport.pdf>