Delivering Zero Emission Bus Services to Rural Areas

Driving the UK forward

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CONFEDERATION OF PASSENGER TRANSPORT

Foreword from the Chair of the Rural Zero Emission Bus Taskforce

CPT established the Rural Zero Emission Bus Taskforce in June 2023 to identify the specific challenges facing operators of rural bus services. Whilst the transition to zero emission vehicles continues to be a challenge for all the bus sector, these challenges are exacerbated for rural services due to their nature.

The Taskforce identified the most significant challenges facing these services are the cost of zero emission buses, which are substantially higher than diesel, infrastructure challenges due to limited space and resources available in rural areas and the insufficient ranges currently delivered by existing zero emission technologies.

I have been particularly impressed with the level of engagement from both bus operators as well as national and local government representatives and experts from electricity, hydrogen and zero emission technology providers. It is through collaborations such as this that we will ensure all sectors can transition sustainably to zero emission solutions. The Taskforce identified a key part of this journey will be establishing local transport collaborations that bring together local stakeholders to identify available resources and unlock solutions that deliver environmental benefits for the area.

I was delighted to be asked to chair such a valuable series of meetings. They have not only provided an informative and beneficial insight into the operation of these services and what is needed to overcome them, but also vital knowledge from stakeholders outside of the industry. I would like to thank all our Taskforce members for their participation, and for providing their valuable expertise and time. I am truly grateful and confident we now have a list of actions that will ensure future rural services can be provided on zero emission buses.

Sincerely,

Jeff Counsell
Warrington's Own Buses
Chairman of the Taskforce

About CPT

We help a dynamic bus and coach industry to provide better journeys for all, creating greener communities and delivering economic growth.

We do this by representing around 900 members from across the industry be they large or small, bus or coach, operator or supplier. We use our influence to campaign for a supportive policy environment, give our members practical advice and support to run their businesses safely, compliantly and efficiently and bring the industry together to share ideas and best practice. We are ambitious to make things better for passengers, inclusive in seeking out different perspectives and we are always there when our members need us.

Executive Summary

Buses are at the centre of British life. They are the nation's most affordable, accessible and popular form of public transport and provide services for over 10 million people a day. Buses connect passengers to education and employment as well as medical appointments, shops, and other leisure activities.

Bus passengers support economic growth, annually contributing £9.2 billion to towns and city centres whilst at work; £13 billion to the leisure industry; and £18.7 billion whilst shopping.[1] A further study found that bus commuters add £64 billion annually to the economy.[2]

As well as this, buses provide a green and sustainable travel option, with one double decker bus capable of removing up to 75 cars off the road.[3]

Nonetheless the bus sector recognises the importance of transitioning to a zero emission fleet and is aware the government is due to confirm an end of sale date for the purchase of new, non-zero emission buses within the next decade. Most large bus operators have voluntarily implemented their own commitments for transitioning their fleets to zero emissions and we therefore predict that, by 2025, over two-thirds of all new bus purchases in the UK will be zero emission, provided sufficient funding is provided.[4]

However, operators delivering services in rural areas, especially smaller bus operators, will find the transition to zero emission vehicles challenging. This is because rural bus services tend to cover longer distances, over hillier terrain, are typically tendered contracts and have lower passenger turnover. This

[1] CPT and Opinium Polling 2023

[2] Buses and Economic Growth, University of Leeds, 2012

[3] Greener Vision Congestion is not just a drag on the economy, it kills. (greener-vision.com)

[4] CPT Research 2022

results in a number of hurdles to be overcome in moving to zero emission fleets around cost, range, and infrastructure.

Without adequate solutions to the obstacles identified in this report, there is a risk that an end of sale date for non-zero emission buses could result in rural bus operators needing to run their diesel buses for longer to continue providing vital rural services. This could mean up to 30%[5] of bus services in England are run on older buses, even more in Scotland and Wales, and at risk of being lost altogether if there is no viable replacement for them in the future.

CPT therefore established the Rural Zero Emission Bus Taskforce, which brought together bus operators and manufacturers; energy, fuel and infrastructure providers; as well as national and local government representatives. The objective of the Taskforce was to outline the specific challenges facing operators of rural bus services transitioning to a zero emission fleet and what is needed to overcome them so that operators can continue to deliver the vital bus services that connect passengers to jobs, education, healthcare, shops and other essential destinations.

This report outlines our findings and lists the commitments for both government, local authorities, and industry that could enable rural services to be delivered on zero emission buses.

To ensure rural services can be delivered on zero emission buses, the bus sector commits to:

- Sharing recharging/refuelling infrastructure where appropriate
- Establishing Local Transport Energy Taskforces with Local Transport Authorities to develop a decarbonisation plan for the area where appropriate
- Modelling when the industry will have a stable second hand zero emission bus market that will provide affordable options for rural services
- Working with relevant Local Transport Authorities to explore the potential of a vehicle lease model with Local Transport Authority-owned vehicles
- Modelling to show the optimal age to repower an Internal Combustion Engine (ICE) bus

To ensure the bus sector can deliver rural services on zero emission buses, we call on the Government to support the industry by:

- Committing to a wider, longer term approach for funding;
    - In England the Government should commit to a five year £1 billion investment programme for zero emission buses, and ensure

[5] Department for Transport, Bus Statistics, Vehicle Kilometres on Local Bus Services, BUS02a_km

that support for the zero emission transition includes sufficient flexibility for Local Transport Authorities and bus operators in rural areas to invest in solutions which suit their local circumstances
    - Welsh Government should commit to providing a long term vision and strategy for fleet and infrastructure to support decarbonisation and continue to provide capital investment to support this
    - Scottish Government should commit to continuing decarbonisation support for bus and coach through the Scottish Zero Emission Bus Scheme (ScotZEB), while recognising that the challenges of rural bus service provision may require greater levels of support and other bespoke solutions.
- Supporting the development of new, longer range zero emission buses through the Faraday Institute and Advanced Propulsion Centre
- Working with Ofgem to introduce a new statutory duty on Distribution Network Operators (DNOs) to prioritise grid infrastructure that will deliver social and community benefits
- Developing hydrogen policy that gives certainty over the supply of green hydrogen for bus and coach operators, and ensuring operators can access shared refuelling sites
- Developing the expertise of the Health and Safety Executive in order to speed up approvals for hydrogen refuelling stations

We call on Local Transport Authorities, particularly those with rural bus services, to:

- Establish a Local Transport Energy Taskforce with key local stakeholders to determine a decarbonisation strategy for the area, where appropriate, which prioritises energy for buses and identifies shared infrastructure sites
- Expedite planning applications for infrastructure at depots
- Work with bus operators to develop a lease model for Local Transport Authority-owned buses with funding from central government

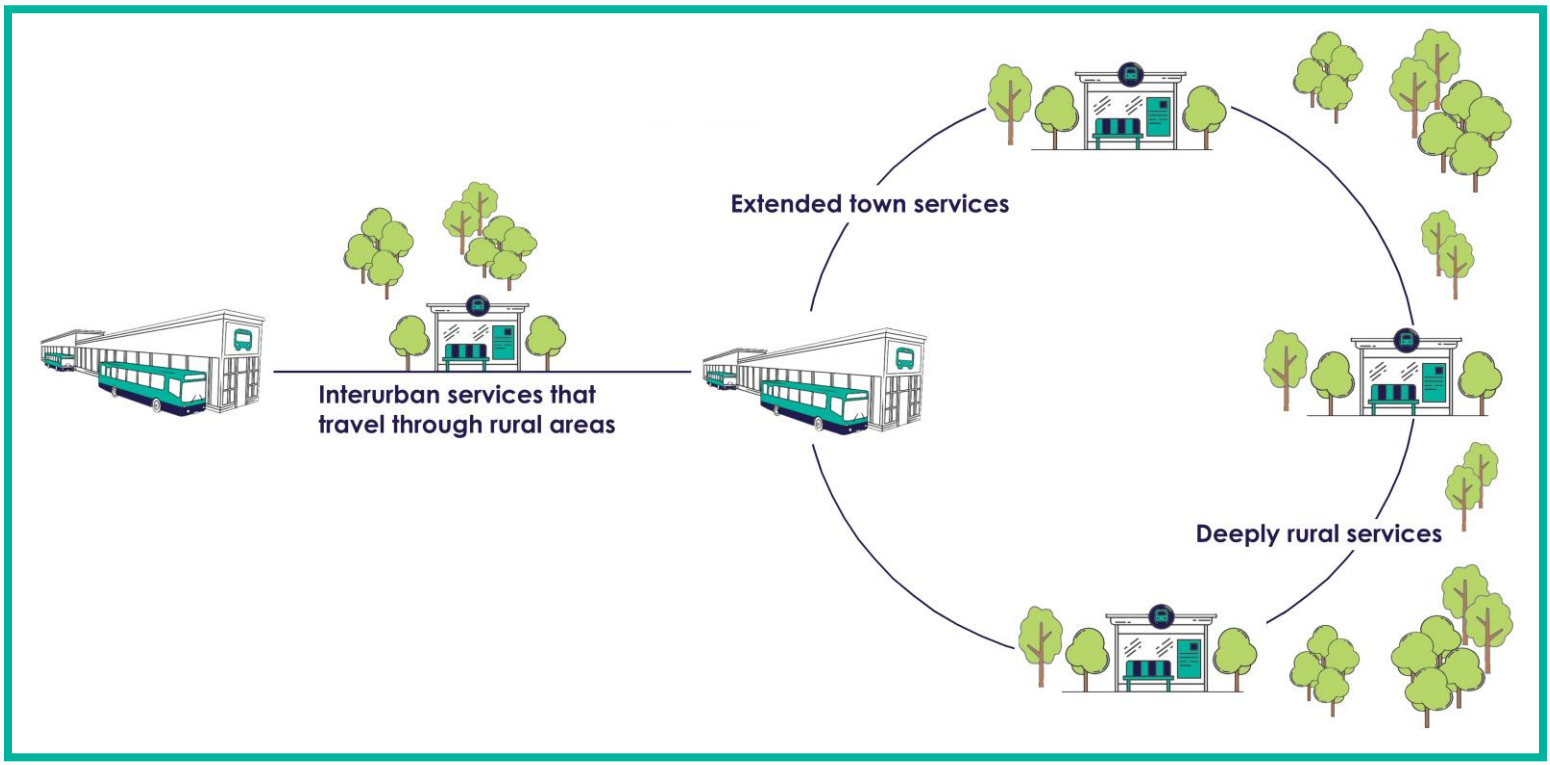
Working in partnership, as outlined above, could turn rural areas into a driving force for the UK's zero emission bus market and our transition to a fully zero emission bus fleet.

Vehicle Challenges

Rural services are extremely varied and tend to cover longer distances over hillier terrain compared to urban services. Rural services can be separated into three types of services; whilst there may be some services that sit outside of these, most will fall into one of the following categories

1. Interurban services that travel through rural areas
2. Extended town services
3. Deeply rural services

Additionally, the times they operate can vary, with some rural services running throughout the day, and others running during the morning and afternoon peak times. This can make identifying strategic times for recharging problematic for the services that cannot be delivered on a single charge.



Range

The range delivered by fully electric battery vehicles is currently not sufficient for longer, more rural services. Despite many electric buses claiming to deliver ranges of up to 250 miles, in reality there are no electric buses available on the market that will deliver this all year round. Operators report that a single deck bus delivers a yearly average of 160 miles, and a double decker bus delivers a yearly average of 140 miles. This is due to several factors including weather which can massively influence the efficiency of a vehicle's energy consumption, and the requirement for a percentage charge to be left in the

battery pack at the end of the day to protect the longevity of the battery. Manufacturers are aware of these issues and are continuing to deliver further improvements to vehicle range.

The range of rural services can vary greatly, on average covering 240 miles, while some all day services can cover 400 miles. This results in operators requiring additional electric buses to cover the same mileage as their diesel fleet. This not only increases the financial pressures of purchasing the vehicles, but also places additional pressures on space at depots.

Whilst hydrogen vehicles can deliver a greater range and refuel in a similar way to diesel vehicles, hydrogen is expensive and supply is limited and uncertain. Additionally, operators have reported issues with installing the required infrastructure.

Go Ahead Hydrogen Refuelling Site

In 2023 Go Ahead decided to transition all 20 of their 24/7 Gatwick services to hydrogen buses and install the UK's first liquid hydrogen station, which converts the liquid into gas before refuelling the buses. However, the site has not yet been approved by the Health and Safety Executive due to a lack of hydrogen expertise and concerns over the safety of the site, despite these stations being commonplace across the USA. Instead of being able to refuel and use all 20 hydrogen vehicles, the site is capped at storing no more than 4000 kilos of hydrogen, supporting just 7 vehicles.

Solutions

Support for Development in Battery Technology

Further developments in battery electric technology through the Faraday institute and Advanced Propulsion Centre to engineer batteries that deliver greater range for zero emission buses, particularly for rural bus services.

Hydrogen Policy

Hydrogen is currently in limited supply, especially green hydrogen, and is prone to shortages. We also anticipate greater demand from other sectors including Heavy Goods Vehicles, coaches, maritime and aviation over the next decade as all sectors are required to transition to zero emission alternatives. Therefore, it is vital that the government develops policy that gives certainty to all sectors over the supply of hydrogen and brings stability to the supply chain so that all users can access affordable and sustainable hydrogen.

Approval for Hydrogen Refuelling Sites

It is vital that the Health and Safety Executive are given the appropriate training to certify hydrogen refuelling stations and mitigate the risk of stranded assets.

Shared Hydrogen Refuelling Sites

Installing hydrogen infrastructure at a depot is expensive, with operators quoting circa £432,000 for an average sized depot. Therefore, for there to be a viable business case, operators will need a minimum of 20 hydrogen buses. Rural bus operator fleets tend to be much smaller, making it difficult to justify the investment.

Strategically located, shared hydrogen refuelling sites that support bus, coach, Heavy Goods Vehicles and other road users including refuse and local authority vehicles could help overcome this obstacle.

These measures will ensure there are zero emission buses available that will deliver the ranges needed for rural bus services by:

- Developing battery electric vehicles with greater ranges
- Developing hydrogen policy that gives certainty over future supply of green hydrogen
- Ensuring the necessary refuelling infrastructure is in place to support hydrogen buses

Commitments

We call on the Government to:

- Support the development of new longer range zero emission buses through the Faraday Institute and Advanced Propulsion Centre
- Develop hydrogen policy that gives certainty over the supply of green hydrogen for bus and coach operators, and ensuring operators can access shared refuelling sites
- Developing the expertise of the Health and Safety Executive in order to speed up approvals for hydrogen refuelling stations

Infrastructure Challenges

For operators to run their battery electric buses confidently and efficiently, they will need to install recharging infrastructure at their depots. Whilst this poses many challenges for all bus operators, there are several factors facing rural services which mean the challenge is even greater.

Depot Limitations

Not all operators own depots in the rural areas they service and many will lease their depots, which could limit their options for installing recharging infrastructure. As well as needing to negotiate the contract with the landowner to request permission to install the infrastructure, it will be hard for operators to justify investment in any permanent infrastructure on land they do not own.

Space at rural depots is often limited, with bus operators already using their available space as efficiently as possible. Battery electric buses require on average 25% more space per vehicle than diesel buses.

Some operators use hard standing areas and other shared parking sites at industrial or farm locations to park their vehicles overnight, with limited or no capacity to connect to the electrical grid.

Grid Connection Application Process

Rural areas tend to have limited electrical grid capacity, meaning operators need to apply to their DNO for an increase in the electricity received at their depot. This process is often complex, time constrained and inconsistent. Operators have reported that cost estimates received from the DNOs are only valid for a limited period. However the planning and development process for introducing electric buses can take anywhere between 12-18 months. This means that, often, the estimates received have expired, with the capacity that had been costed and allocated to bus depots then being allocated elsewhere.

Solutions

Shared Infrastructure Sites

The sharing of infrastructure is going to be an important part of the strategy for decarbonising rural bus services, particularly in areas where space and electricity capacity is limited. Sharing of infrastructure can also help support the business case for the installation and maintenance costs of the infrastructure.

Shared infrastructure sites will need to be close to, or en route to where bus operators park their vehicles overnight. Driver costs make up 60% of an

operator's costs and even driving a few miles to access recharging infrastructure could significantly increase their running costs.

It is important that the infrastructure is equipped with universal connectors to ensure that all road users, regardless of vehicle, will be able to plug in and recharge their vehicle. The sites will also need to be futureproofed to cope with additional demand and monitored remotely so that in the event of a technical issue, it is picked up and repaired as soon as possible to keep downtime to a minimum. If equipment is not monitored, or repaired quickly, bus operators will be unable to charge their vehicles and will be unable to deliver their services.

Opportunity charging may be necessary to support some rural routes, given the extensive range requirement. However, operators must be given assurance that they can access the infrastructure when needed.

Local Transport Authority Owned/Third Party Owned Recharging Site

These sites would be owned by the Local Transport Authority, and would enable a wide range of agreed users, including buses and coaches, to utilise them. These could take the form of shared mobility hubs, which aim to bring together buses, cars, bikes and walking to make it easier for passengers to connect with all modes of transport.

Peninsula Feasibility Study for Mobility Hubs

Peninsula Transport and Western Gateway Sub-National Transport Bodies have developed a joint strategy which sets out the mobility policy for the whole South West of England. This proposes multiple rural mobility interventions aimed at levelling up their rural communities.

The consultation team are currently working on developing a pilots prospectus for the South West. It is likely that one of these pilots will be the establishment of mobility hubs to bring together active and shared mode choices and support first and last mile connectivity to mass transit whilst supporting the transition to zero emission. These hubs could provide the vital zero emission infrastructure needed to support rural zero emission buses whilst also encouraging modal shift by connecting passengers to buses in remote areas.

Operator Owned Site/ Operator Collaboration with Third Party

Additionally, there is a role for operators to share the infrastructure at their depots with other sectors. Buses will need to charge overnight and operate during the day meaning that other stakeholders, including freight vehicles, taxis, refuse vehicles and other road users could use the charging infrastructure during the day for a fee.

First Bus Shared Infrastructure

First Bus Caledonia depot in Glasgow is the UK's largest EV charging hub with over 150 rapid charge points. Their fleet of buses charge overnight, leaving most of the chargers free during the day whilst the buses operate, providing an opportunity for local companies to utilise the infrastructure. First Bus has successfully established a collaboration with DPD and Police Scotland, enabling them to charge their zero emission vehicles within 30-40 minutes, purchasing only the energy they use. This helps support the investment made by First Bus and covers the maintenance costs.

In addition, in January 2024, First Bus announced a new collaboration with Openreach, with the initial phase enabling 30 of the broadband providers' vehicles to charge at First Bus depots in Glasgow, Aberdeen and Leicester.

Local Transport Energy Plan

The West Midlands and Greater Manchester areas have developed Local Area Energy Plans to identify the most cost effective pathway to achieving net zero. Initiatives such as these can help deliver zero emission bus services in rural areas.

Rural Local Transport Authorities should establish Local Transport Energy Taskforces that bring together key local stakeholders to identify the available space, energy demand and vehicle requirements. They would develop a strategy that delivers environmental benefits to the area by supporting bus, coach, local authority vehicles, education vehicles and other vital services to transition to zero emission.

As well as the potential solutions set out above, the Taskforces could consider static battery storage solutions either connected to the grid or renewable sources, as well as options for a stepped approach towards zero emission through, for example, the use of low carbon fuels.

DigiGo Essex

TravelEssex, a journey planning app which enables Essex residents to search for sustainable travel options throughout Essex, enables passengers to plan their journeys by walking, cycling, bus and train. The app also includes a fully electric shared public transport service providing on demand and pre bookable travel, connecting rural parts of Essex called DigiGo. DigiGo provides a shared service which enables passengers to book on demand travel, or pre book journeys up to 7 days in advance, track the vehicle in real time and choose their route.

This is a great example of a local transport authority determining and delivering a bespoke service to best serve their rural passengers and connect them to where they need to go and when.

Prioritisation over Electricity Supply for Bus Operators

The Department for Energy Security and Net Zero and Ofgem released their Connections Action Plan in November 2023, which outlines measures DNOs will introduce to reduce the timescales involved in applying for grid connections. Whilst this is a welcome step, operators are still experiencing challenges. The government and Ofgem should therefore review the process and introduce a new statutory duty on DNOs that prioritises grid infrastructure that will deliver social and community benefits. This will ensure that bus depots are moved higher up the priority list and accelerate the process of increasing electricity supplied to depots.

Streamlining the Application and Installation Process for Depot Infrastructure

The process of installing infrastructure at depot is complex and timely. Local Authorities could help to streamline the process by proactively engaging with bus operators to determine the viability of existing depot arrangements and provide support where required. This, for example, could be ensuring that any planning permission is fast tracked.

The identified solutions will:

- Streamline and accelerate the infrastructure installation process for zero emission buses
- Create a robust and reliable recharging network, in rural, hard to reach areas where space and energy resource are limited

Commitments

Industry commits to:

- Sharing recharging/refuelling infrastructure where appropriate

- Working with Local Transport Authorities to establish Local Transport Energy Taskforces to develop decarbonisation plans for their areas where appropriate

In return, we call on the Local Transport Authorities to:

- Establish a Local Transport Energy Taskforce with key local stakeholders to determine a decarbonisation strategy for the area, where appropriate, which prioritises energy for buses and identifies shared infrastructure sites
- Expedite planning applications for infrastructure at depots

We call on Government to:

- Work with Ofgem to introduce a new statutory duty on DNOs that prioritises grid infrastructure that will deliver social and community benefits

Financial Challenges

The significant upfront capital required to purchase zero emission buses is a challenge for all bus operators. However, due to the nature of rural services, the challenge of developing an affordable business case is even greater. This, and the additional cost of infrastructure, which for an average size bus depot operators have been quoted upwards of £432,000 for hydrogen and over £540,000 for electric, is making zero emission buses unaffordable for rural services.

High Purchase Price of Zero Emission Vehicles

The purchase price of zero emission buses is significantly higher than standard diesel buses, with an electric bus typically 39% more expensive and a hydrogen bus 133% more expensive.

Whilst the significantly higher purchase price is challenging for all bus operators, there are some fundamental differences between the business cases for rural and urban bus services which make it even more difficult for operators to invest in and operate zero emission vehicles on their rural routes.

Firstly, rural services are often tendered contracts that rely on the bus operator providing the lowest possible price to the Local Transport Authority. Tendered contracts are typically 3 years, which is not sufficient time for the operator to spread out the cost of the zero emission vehicle whilst also offering an affordable bid. The contracts agreed would need to be extended to 15 years, which the Local Transport Authorities are unable to deliver.

The travel patterns of passengers travelling on rural services also tend to differ to those of urban services. Operators report lower passenger numbers as well lower passenger turnover and a higher percentage of concessionary travellers (which generate less revenue than fare paying passengers). Concessionary passengers, on average, make up 30% of passengers for urban services, however for rural they can be anywhere between 40-80%.

For these reasons operators often do not use new buses for their rural routes and instead place their new vehicles on more frequent, urban routes. Here, they pay back the cost of the vehicle before they are then cascaded through the fleet to be used on less commercial routes which typically tend to be rural.

Solutions

CPT to Model the Zero Emission Second Hand Market

Understanding that operators tend to use second hand or cascaded vehicles for their rural services, CPT will conduct research to produce a model which will demonstrate when we can expect second hand or cascaded zero emission vehicles to appear on rural routes. This can help Local Transport Authorities and bus operators to plan for the long term and map out their path to zero emissions.

Leased Vehicle Options

A lease model where the Local Transport Authority owns the vehicles and leases them to the operator, with the operator paying running and maintenance costs for the duration of the contract, could provide an affordable option for operators who are unable to purchase zero emission buses.

However, for this model to work, proposals should be developed with bus operators to give them the opportunity to advise their Local Transport Authority which buses would be suitable to deliver the required services in the area.

Wider, Longer Term Bus Funding

We welcome the ZEBRA 2.0 fund which announced targeted support for rural operators and we look forward to the outcomes from the most recent bidding round. We also welcomed the second phase of the Scottish Zero Emission Bus Challenge Fund (ScotZEB2) which encouraged SME involvement, including coach and community transport; however the Scottish Government has no current plans for further funding rounds.

Nonetheless it is not possible to look at electric buses in isolation. If the Government wants to see the entire bus sector transition to zero emission technologies there needs to be a wider support package with long term funding and a move away from a stop-start approach.

To instil confidence, encourage investment and enable the whole bus sector to transition to zero emissions, a wider, longer- term approach to bus funding is needed. In England, the UK Government should commit to a five year, £1 billion investment programme in zero emission buses and infrastructure. Government investment leverages private sector investment, with the recent ZEBRA funding scheme attracting around £1.20 of private investment for every £1 of central government investment.

Welsh Government should commit to providing a long-term vision and strategy for fleet and infrastructure to support decarbonisation and continue to provide capital investment to support this.

Scottish Government should commit to continuing decarbonisation support for bus and coach through the Scottish Zero Emission Bus Scheme (ScotZEB), while recognising that the challenges of rural bus service provision may require greater levels of support and other bespoke solutions.

Repower Solutions

We are aware that technology providers including Equipmake and Kleanbus have developed electric modular systems which provide a repowering solution, converting traditional ICE vehicles to electric. They have already successfully integrated these systems into operators' fleets.

Whilst repower can provide a more affordable option for operators than purchasing a new zero emission bus, careful consideration needs to be made as to the optimal age the repower is conducted. CPT will model the optimal age to repower an ICE bus to ensure that the investment makes commercial sense.

The identified solutions will:

- Demonstrate when we expect operators of rural bus services to be able to sustainably transition to zero emission vehicles
- Help bus operators and Local Transport Authorities map out a longer term transition to zero emission fleet
- Provide affordable options that will enable operators of rural bus services to transition to zero emission vehicles

Commitments

Industry commits to:

- Modelling when the industry will have a stable second hand zero emission market, to map out when zero emission buses will be more readily available for rural services
- Working with Local Transport Authorities to explore vehicle lease models with Local Transport Authority-owned vehicles
- Modelling the optimal age to repower on an ICE vehicle

In return, we call on the Local Transport Authorities to:

- Work with bus operators to develop a lease model for Local Transport Authority owned buses with funding from central government

In return, we call on the Government to:

- Committing to a long term, wider approach for funding;
    - In England, the Government should commit to a five year £1 billion investment programme for zero emission buses, and ensure that support for the zero emission transition includes sufficient flexibility for Local Transport Authorities and bus operators in rural areas to invest in solutions which suit their local circumstances
    - Welsh Government should commit to providing a long term vision and strategy for fleet and infrastructure to support decarbonisation and continue to provide capital investment to support this
    - Scottish Government should commit to continuing decarbonisation support for bus and coach through the Scottish Zero Emission Bus Scheme (ScotZEB), while recognising that the challenges of rural bus service provision may require greater levels of support and other bespoke solutions.

Conclusions and Next Steps

Buses already provide a green and sustainable travel option, but operators recognise that the future of road transport lies with zero emission vehicles and are committed to transitioning their fleets. However for them to do so, there are multiple challenges outside of their control that must be overcome.

These challenges are exacerbated for operators of rural bus services due to the greater range and hiller terrains they cover, as well as their reliance on tendered contracts and vehicles that have cascaded through the fleet. Without adequate support, 30% of bus services delivered in England, possibly even more in Scotland and Wales, are at risk of being delivered by an aging bus fleet, and could disappear altogether if no viable option is provided.

Rural buses provide a vital lifeline for their passengers, connecting people located in rural areas to towns and city centres, enabling them to access education, employment, medical appointments and other important services. Introducing the correct supportive measures as outlined in this report will enable these services to transition to zero emission vehicles and will help deliver the environmental and social benefits of a bus network that is continuously improving.

This report highlights the important role collaborations between Local Transport Authorities, bus operators, and other key stakeholders will have in developing local solutions that make the best use of available space and resources.

CPT will continue to engage with government, Local Transport Authorities and other key stakeholders to take this work forward and ensure that rural bus services, and passengers, are not left behind.

Contact Details: Rebecca Kite rebecca.kite@cpt-uk.org

Disclaimer

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Appendix 1

Rural Zero Emission Taskforce – List of Members

Name	Company
Jeff Counsell	Warrington's Own Buses (Taskforce Chair)
Peter Stephens	Stagecoach
Bill Hiron	Stephenson's of Essex
Mathew Morgan	First Bus
Alex Hornby	McGills Buses
Phil Southall	Go Ahead
Henri Rohard	Transdev
John Bickerton	Trent Barton
Keith Watson	EO Charging
Laura Gosling	Wiltshire Council
Ryan Dunne	Enel X
Kelly Reeves	Swarco
Timothy Griffin	Zemo
Tanya Neech	Scania
Ian Downie	Yutong
Patrick Malone	DfT Observer
Owen Roberts	Pembrokeshire Council
Richard Matthews	Mellor
Rick Muir	Kleanbus
Jordan Roberts	Argent Energy
Andrew Luckett	BluMarbl
Ben Hinchliffe	Zenobe

Appendix 2

Definition of Rural

Following discussions, it was agreed that the taskforce would use the Rural Urban Classification specified by the Department for Environment, Food and Rural affairs, which defines areas as rural if they fall outside of settlements with more than 10,000 resident population. For the smallest geography areas, the classification assigned them to one of four urban or one of six rural categories.

Rural	Urban
Hamlets and isolated dwellings	City and town
Hamlets and isolated dwellings in a sparse setting	City and town in a sparse setting
Village	Minor conurbation
Village in a sparse setting	Major conurbation
Town and fringe	
Town and fringe in a sparse setting	

Whilst there will be some rural bus services that sit outside of this definition, the taskforce concluded that all challenges outlined in this document would apply to these services.