



NSW Government response

Inquiry into electric buses in regional and metropolitan public transport networks in NSW

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1 Introduction

The NSW Government welcomes the recommendations outlined in the Legislative Assembly Committee's report on Electric buses in regional and metropolitan public transport networks in NSW.

The Committee highlighted the opportunities and challenges of transitioning to an electric bus fleet and provided recommendations to ensure that the transition is managed effectively. The NSW Government strongly supports the recommendations in the Report and recognises that a transition to a zero emission bus fleet is a significant change that requires a detailed transition plan.

The Minister for Transport and Roads has challenged Transport for NSW to transition the state's fleet of 8,000 buses to zero emission technology by 2030. Transport for NSW is currently developing a strategy to shape the transition to zero emission buses. The strategy will consider the strategic pathway for the transition, opportunities of both battery electric and hydrogen fuel cell technology, the energy requirements to support the transition, as well as the infrastructure, customer and financial implications

The NSW Government is committed to enhancing the sustainability, productivity and liveability of our community. The NSW Government has set a target of achieving net zero emissions by 2050 and a 35 per cent reduction in emissions by 2030. The NSW Net Zero Plan includes the commitment to replacing Sydney's bus fleet with electric buses to help achieve these targets, provide environmental and health benefits, and make bus operations more financially sustainable over the long term.

The transport sector represents the second largest and fastest growing source of Green House Gas (GHG) emissions and represents approximately 20% of NSW's GHG emissions. The transition to zero emission buses is central to making road transport more efficient and sustainable, by reducing fuel consumption and GHG emissions. Without intervention, emissions from transport will continue to rise as the NSW population and economy grow. Zero emission buses will also leverage the increase in renewable energy sources while reducing the risk from potential supply disruptions of imported petroleum-based fuels. The NSW Government is leading by example and will work with industry to support this significant transition.

The transition to zero emission technology is a major transformation which brings many opportunities, including new industry development and employment growth in the transport, energy and technology sectors. The transition to zero emission buses provides an opportunity to support local bus and component manufacturing and assembly in NSW. Producing zero emission buses in NSW will have the lowest emissions impact while providing benefits to the local economy, with zero emission buses much easier to build and assemble locally because of the fewer components required and the simpler nature of construction compared to traditional vehicles powered by internal combustion engines. While there will be a change in the types of skills required to maintain these vehicles, the pace of change in Australia will enable time for a transition of skills. The deployment of hydrogen fuel cell buses as part of the transition to a zero emission bus fleet also presents a major opportunity to support the broader development of the clean hydrogen economy in NSW. Hydrogen technology will play a major role in decarbonising hard to abate sectors by 2050 while supporting economic growth and new jobs as we recover from the COVID-19 pandemic.

Transport for NSW and the Department of Planning Industry and Environment is already undertaking several initiatives to support the transition to zero emission buses in partnership with transport operators and zero emission bus industry leaders.

Operators in NSW can order electric buses through a business-as-usual process via the NSW bus panel which will be expanded to include new zero emission bus models as they come onto the market and meet our requirements.

Transport for NSW also released a request for expression of interest in May 2020 for industry to partner with existing Sydney and Outer Sydney Metropolitan Areas bus operators to both battery electric and hydrogen fuel cell buses. The learnings from these trials will help inform a strategic framework for the wider zero emission bus rollout.

Transport for NSW also partnered with UITP to hold a zero emission bus forum over October and November 2020. The forum brought together government, bus operators, the bus industry and academics from around the world to share learnings on how best implement zero emission bus fleets.

Under the NSW Government's Net Zero Plan, the Department of Planning Industry and Environment is providing funding for hydrogen hub development. As part of the landmark Electricity Infrastructure Roadmap, the NSW Government is also supporting an unprecedented rollout of renewable energy generation. These measures will substantially increase the competitiveness of hydrogen and battery electric buses against existing fuels.

2 Recommendation 1

That Transport for NSW develops a transition plan with clear objectives and timeframes to transition the public transport bus fleet to electric.

NSW Government response

Support

Transport for NSW is currently developing a Zero Emission Bus Transition Strategy (the Transition Strategy) which will be released this year. The Transition Strategy will cover most of the Report's recommendations.

The Transition Strategy will outline a preferred pathway and timeframe to transition to zero emission buses, which will balance the speed of deployment, benefits to the local supply chain, environmental benefits and overall cost economics.

The Transition Strategy will consider how the deployment of hydrogen fuel cell buses can align with the development of hydrogen hubs. Hydrogen hubs have the potential to develop industry, grow regional economies and create new jobs while helping NSW achieve its decarbonisation objectives.

The Strategy will also be informed by current and future trials of zero emission buses. Transport for NSW is currently trialling five battery electric buses in Sydney's inner west and completed a trial of a battery electric bus in Nowra. In May 2020, Transport for NSW invited industry to submit expressions of interest to further trial zero emission bus technologies, including battery electric and hydrogen fuel cell buses, in the Sydney and outer metropolitan bus regions in partnership with existing bus operators. These trials will help allow testing and learning before implementing a wider roll out and procurement process and will inform the strategic framework. Transport for NSW intends to leverage the learnings from metropolitan and outer metropolitan networks before rolling out in regional areas.

3 Recommendation 2

That Transport for NSW includes the length of contracts, funding of infrastructure upgrades and bus procurement in the transition plan.

NSW Government response

Support

Transport for NSW recognises that the length of bus contracts, funding of infrastructure upgrades and future bus procurement are key elements in transitioning to a zero emission bus fleet.

Transport for NSW acknowledges that charging infrastructure and hydrogen refuelling systems can limit the wider uptake of zero emission buses. Bus depots and other locations will need infrastructure to support these buses. Depot ownership arrangements are currently mixed with both government-owned and operator-owned depots. While infrastructure upgrades to government-owned depots will be funded by the government, the model for funding upgrades to privately operated depots is unclear.

Transport for NSW also acknowledges that bus procurement and contracts may need to be changed to enable the transition to zero emission buses. These issues are currently being examined by Transport for NSW through the development of the Transition Strategy, the current expression of interest process and through the renewal of 14 contracts for bus regions in Sydney.

4 Recommendation 3

That training for bus drivers includes how to efficiently operate electric buses for safety and to fully realise the potential benefits of electric buses.

NSW Government response

Support

Driving zero emission buses is different to driving diesel buses and requires specialised training to ensure that the benefits of zero emission buses are fully realised. Driver's training and skill can have a substantial effect on a zero emission bus performance.

Transport for NSW currently has a bus operator accreditation scheme which applies to all bus operators in NSW. As part of this scheme, there is a framework which requires a comprehensive safety management and training program, the transition to zero emission buses provides the opportunity to expand this to cover this new technology.

There will need to be specific training material developed for zero emission vehicles. In the current trial of battery electric buses in Sydney's inner west and the previous Nowra trial, the bus operators led this training.

Transport for NSW will work with industry and operators to further develop this.

5 Recommendation 4

That Transport for NSW audits its bus depots to identify local grid capacity and suitability to support the conversion to electric.

NSW Government response

Support

The NSW Government recognises the wider roll-out of zero emission buses will require a significant amount of power and close collaboration with the energy sector. The Transition Strategy will model the local grid capacity to support depots converting to electric buses. Transport for NSW has already started to engage with the electricity distributors in NSW to support this work. This work will also consider the suitability of alternatives to electrical charging infrastructure where grid capacity is limited, such as hydrogen fuel cell technology.

6 Recommendation 5

That Transport for NSW considers what charging option is suitable for each bus depot and local routes.

NSW Government response

Support

Transport for NSW recognises the need for flexibility in choosing the best charging infrastructure for each depot. Currently depot ownership arrangements are mixed with both government-owned and privately-owned depots. Initial modelling by Transport for NSW of Sydney bus depots found that around 80% of bus routes can be covered by battery electric buses. Further work is being undertaken to consider technology solutions for the regional fleet, where hydrogen will likely have greater application. The Transition Strategy will identify a number of options to support remaining routes including improvements in battery density, performance and range, utilising on-route opportunity charging and taking advantage of hydrogen fuel cell buses' longer range.

Transport for NSW is already engaging with bus operators and energy providers about what charging infrastructure would be best for individual depots. Collaboration between government, operators and the energy sector will help to ensure a reliable, safe and secure energy supply.

7 Recommendation 6

That Transport for NSW considers requiring universal chargers for flexible, standard charging across the state.

NSW Government response

Support

The NSW Government recognises the importance of universal chargers to ensuring interoperability of charging infrastructure across the zero emission bus fleet. As Transport for NSW is currently in the process of testing this technology it hasn't yet specified a requirement for a standard charger. This would also be considered for Hydrogen refuelling infrastructure standards.

Having universal chargers would avoid bus operators needing to install duplicate charging infrastructure as well as provide flexibility by allowing buses to be moved around NSW as needed, especially during emergency situations.

8 Recommendation 7

That Transport for NSW identifies opportunities for renewable energy sources to power the electric bus fleet.

NSW Government response

Support

For the transition to zero emission buses to be truly zero emission and support NSW emission reduction goals, electricity used to either charge electric buses or produce hydrogen for hydrogen fuel cell buses should come from renewable energy sources.

Greater use of renewable energy sources also improves our fuel security, with less reliance on imported fossil fuels.

The NSW Government's Electricity Infrastructure Roadmap will greatly increase the availability of large-scale renewable energy sources to draw from. Transport for NSW is currently exploring different renewable energy options including purchasing green power. There is also the potential to offset emissions. Sydney Metro offsets 100 per cent of the emissions from the electricity used to run Metro North West through a Power Purchase Agreement from a large-scale solar farm in regional NSW.

Transport for NSW is also exploring how solar panels and stationary battery storage at depots can provide a renewable energy source as well as help to reduce demand on the electricity grid.

A diverse range of power sources would provide more reliability to ensure access to a power supply capable of charging the necessary number of buses. As part of the Transition Strategy, Transport for NSW will consider the renewable energy purchase options for fuel cell buses, where large scale centralised production of hydrogen fuel could enable more cost-effective renewable energy purchase arrangements.

9 Recommendation 8

That as part of the transition plan, Transport for NSW considers what charging infrastructure would be suitable for travel between regional areas and within regional centres.

NSW Government response

Support

Transport for NSW acknowledges that rolling out electric buses raises similar issues regardless of whether they are in regional or metropolitan areas. Issues like grid connections and energy supply will need to be addressed on a case by case basis, regardless of location. However, the greater distances, unsealed roads and grid capacity in regional networks is an issue that will require more detailed consideration. Given hydrogen's potential for longer distance routes and ability to bypass grid constraints, the role of hydrogen fuel cell buses may be more significant in the regional bus network. Transport for NSW will consider the development of hydrogen hubs within regional special activation precincts to help decarbonise long distance zero emission transport. Transport for NSW will consider how hydrogen fuel cell bus deployments can support the development of hydrogen hubs.

Transport for NSW is currently developing hydrogen fuel cell bus trials in outer metropolitan bus regions as part of the Zero Emission Bus request for expression of interest.

Transport for NSW intends to leverage the learnings from metropolitan and outer metropolitan bus networks as it rolls out zero emissions buses in regional areas. There is also an opportunity to leverage the renewable energy zones that expected to provide large-scale renewable energy and storage projects in the Central-West Orana, New England, and south-west regions of NSW.

Transport for NSW is including a focus on regional NSW in the development of its Transition Strategy to examine these issues.

10 Recommendation 9

That Transport for NSW requires an automated alert or noise emitter to be installed on electric buses.

NSW Government response

Support in principle

While the quiet operation of electric buses is a benefit, it can be a risk to vulnerable road users.

At speeds less than 20km/h, zero emission buses produce little noise and may pose a risk to vulnerable road users, especially visually impaired pedestrians. This potential risk can be addressed through acoustic vehicle alert systems (AVAS) that generate artificial sounds at low speeds.

The Federal Government is currently developing a regulatory impact statement on an alert system or minimum sound emission in hybrid and electric vehicles, including buses.

Transport for NSW will work with the Federal Government to update the Australian Design Rules to improve the safety of vulnerable road users where required and will consider the inclusion of AVAS in its specifications for zero emissions buses.

11 Recommendation 10

That Transport for NSW runs a safety and awareness campaign for pedestrians and road users about electric buses.

NSW Government response

Support

Transport for NSW's the Centre for Road Safety has run a Be Bus Aware campaign supported by the bus industry previously and will re-examine this with the wider roll out of zero emission buses.

12 Recommendation 11

That Transport for NSW consults groups that represent people with disability on the accessibility of electric buses.

NSW Government response

Support

Transport for NSW does work with disability groups before rolling out new services to seek their feedback. Transport for NSW will continue to engage and consult with disability groups before the next phase of a zero emission bus roll out.

All new buses including zero emission buses in NSW will comply with the accessibility standards set out in the Commonwealth *Disability Standards for Accessible Public Transport Act 2002* (Cth) by 31 December 2022. The purpose of the Standards is to enable public transport service and infrastructure providers to remove discrimination from public transport services. The Standards specify what is required to make public transport accessible and are intended to apply to the widest possible range of people with disability.

Audio and visual stop announcements are important for passengers who are blind and vision impaired to find the way to their destination. Transport for NSW will standardise passenger information displays and the audio announcements for all new buses across the NSW fleet. Transport for NSW are aware of the development of a number of apps that aim to give passengers information about approaching buses. Transport for NSW are monitoring the development of new apps and will aim to improve services to meet customers' needs and make them more accessible.

13 Recommendation 12

That training be provided for bus drivers on the needs of passengers with disability.

NSW Government response

Support

As stated above, all new buses in NSW will comply with the accessibility standards set out in the *Disability Standards for Accessible Public Transport Act 2002* (Cth) by 31 December 2022. Transport for NSW will continue to work with disability groups and bus operators to make services accessible, including providing relevant training to bus drivers.