



Australian Government

Australian Government response to the
House of Representatives Standing Committee on
Infrastructure, Transport and Cities report:

‘Innovating Transport across Australia’
Inquiry into automated mass transit

November 2020

The Australian Government welcomes the recommendations outlined in the *Innovating Transport across Australia* report and thanks the Committee for its work.

The Committee has presented a vision for a future of mass transit in Australia which is multimodal, efficient and incorporates alternative fuel sources.

While the delivery of mass transit services is the responsibility of the states and territories, the Australian Government will continue to promote a coordinated national approach to improving the efficiency, safety and sustainability of our transport systems, for the benefit of all Australians.

The role for federal government outlined in this report also complements the Committee's Inquiry into the Australian Government's role in the development of cities, *Building Up and Moving Out*. The Government response to that report goes to many of the issues considered in this response.

Maximising the efficiency of our transportation systems is an enduring priority for Government, with linkages to priorities such as minimising congestion and supporting efficient supply chains for industry. States and territories are primarily responsible for delivering transport services, and the Australian Government is committed to supporting them to carry out the important work of preparing for the future of mass transit in Australia. This includes integrating smart technologies into Australia's transport infrastructure through the ten year, \$110 billion land transport infrastructure investment pipeline.

Automation in transport has the potential to increase efficiency, with even greater benefits available if transport modes work together as part of an interconnected transport network.

There is a lot of interest in the role that highly automated vehicles may play in future transport networks, and their potential safety and congestion benefits.

Automated rail is a proven technology, offering potential reliability, safety, energy and cost benefits. Freight and supply chains are key to our future economic success, and have been identified as early opportunities for automation and utilising alternative fuels.

Consumer demand for future fuel technologies could have wide-ranging benefits, along with potential challenges for integration. This is why the Australian Government is developing a strategy that will enable consumer choice when it comes to future fuel and vehicle technologies, including electric vehicles, hybrids and hydrogen fuel cell vehicles.

The Government has also announced a \$74.5 million Future Fuels Package, including a new Future Fuels Fund. The Fund will help businesses and regional communities take advantage of opportunities offered by hydrogen, electric, and bio-fuelled vehicles. The Government also led the development of the National Hydrogen Strategy, which considered its use as a transport fuel.

The Australian Government has taken on a national leadership role to prepare Australia for new transport technologies, including committing \$9.7 million in 2018 for research and to establish the Office of Future Transport Technology. As noted by the Committee, maximising the benefits of technology in our transport systems requires collaboration from all governments. Australian transport and infrastructure ministers have already agreed to a [National Policy Framework for Land Transport Technology](#) and associated [Action Plan](#),

which includes work on automated vehicle safety, low and zero emission vehicles, freight, regulatory changes and infrastructure readiness.

The Australian Government thanks the Committee again for their important work.

Recommendation 1

The Committee recommends that the Australian Government develop its strategies and plans to address the development of transport automation and alternative fuel sources through the strategic framework set out in the Committee's report on the development of cities, *Building Up & Moving Out*, especially those relating to integrated and holistic planning, with a view to ensuring that transport automation takes place within a wider planning framework which integrates automated transport with the planning of the urban and regional environment to maximise liveability, sustainability and productivity, while acknowledging the different needs of greenfield and brownfield sites.

The Australian Government **supports in principle** this recommendation.

The Government is committed to enhancing the liveability, sustainability and productivity of our cities and regions. As noted in the Government's response to the *Building Up & Moving Out* report, the Government continues to work with state, territory and local governments on strategic planning around population and infrastructure. This includes the National Population and Planning Framework that links population growth with transport infrastructure, housing, employment and other priorities.

Australian infrastructure and transport ministers play a key role in delivering national reforms to improve the efficiency and productivity of Australia's infrastructure and transport systems. Improving integration between land use and infrastructure planning is a key theme from ministers' national reform priorities.

The Government's role in these frameworks includes supporting and complementing the states and territories as they plan for, and deliver, mass transit.

Recommendation 2

The Committee recommends that the Australian Government adopt as its goal support for the development of a new automated transport ecosystem, incorporating shared mobility based on: strong trunk routes provided by rail, light rail and buses, connected to smaller vehicles providing connectivity within cities and suburbs; active transport solutions; and strategies to manage the use of private automated transport and ridesharing in city centres and heavily congested areas and routes.

The Australian Government **supports in principle** this recommendation.

While noting it is primarily the responsibility of State and Territory governments, the Commonwealth Government recognises the necessity of high quality mass transit options to get Australians where they need to go. The Government understands the systems of the future will look very different to those we use today – including new modes of transport and

increased automation. It is encouraging to witness the vision and forward planning being shown in all the states and territories to realise the benefits of emerging technology.

The Government is already partnering with states and territories to invest in automated mass transit options, including the Sydney Metro Greater West through the Western Sydney City Deal. The Australian Government has been supporting states and territories to integrate smart technologies into infrastructure through the ten year, \$110 billion land transport infrastructure investment pipeline. This pipeline includes the Government's \$50 million investment to upgrade the Kwinana Freeway in WA, delivering Perth's first Smart Freeway and an investment of up to \$84 million for the Bruce Highway to implement Intelligent Transport System solutions.

As the Committee notes, automation and new modes of transport have the potential to alleviate congestion and increase efficiency. It is important to get the policy settings right to integrate these technologies responsibly into our land use and transport networks.

In 2016, Australian transport and infrastructure ministers agreed to the [National Policy Framework for Land Transport Technology](#) and associated [Action Plan](#) (updated in 2019 for 2020-23). The Framework outlines an agreed approach to policy, regulatory and investment decision-making for technologies in the land transport sector. The Action Plan ensures individual actions by Australian governments are appropriately prioritised, avoid duplication and encourage greater collaboration and sharing of key learnings. More information on the Policy Framework and Action Plan can be found in the response to [Recommendation 4](#).

A number of the priorities identified in the Action Plan go to facilitating the type of environment referenced in the recommendation. These include research and trials of intelligent transport systems and investigating the role of governments in the deployment of Mobility as a Service¹. More information about the Australian Government's actions to facilitate the development of Mobility as a Service can be found in the response to [Recommendation 9](#).

Recommendation 3

The Committee recommends that the Office of Future Transport Technology within the Department of Infrastructure, Regional Development and Cities undertake consideration of the benefits of automation and electrification for the transport of freight.

The Australian Government **supports in principle** this recommendation.

There are considerable potential benefits in increasing automation and electrification of freight transportation, including improving productivity, safety and environmental outcomes.

In 2019 the Office of Future Transport Technology led the provision of advice to Australian infrastructure and transport ministers to update the National Land Transport Technology Action Plan. The [Action Plan 2020-23](#) includes a priority to identify and facilitate emerging technologies that improve freight outcomes. This priority also reflects the National Action

¹Mobility as a Service (MaaS) combines public and private transport options in a single app, providing an integrated origin to destination journey, 'handling payment and bookings through the same platform and providing dynamic route-planning information to users' KPMG, Reimagine Places: Mobility as a Service: https://assets.kpmg.com/content/dam/kpmg/uk/pdf/2017/08/reimagine_places_maas.pdf

Plan of the National Freight and Supply Strategy and the Government's work program on low and zero emission vehicles. The Office is currently working with state and territory governments to implement priorities under the Action Plan.

It is appropriate this work continue to be undertaken as a joint priority with state and territory governments through these action plans, noting the Office of Future Transport Technology has a role in considering their implementation and outcomes.

Recommendation 4

The Committee recommends that the Australian Government, in conjunction with State and Territory governments, develop a strategy for managing the transition to full automation on roads, including mapping regulatory responses, vehicle specifications and driver training requirements.

The Australian Government **supports** this recommendation.

Australian infrastructure and transport ministers have agreed on a course forward to prepare for automation on our roads through the [National Policy Framework for Land Transport Technology](#) and associated [Action Plan](#) referenced in previous responses. Principles articulated by the Policy Framework include building on existing infrastructure networks and adopting best practice approaches to regulatory changes.

In August 2019, Australian infrastructure and transport ministers agreed an updated 2020-23 Action Plan which sets out 11 short-to-medium term key priorities, structured around the key issues identified in the Policy Framework and relevant to the concerns of the Committee – that is: safety, security and privacy; digital and physical infrastructure; data; standards and interoperability; and disruption and change.

The updated 2020-23 Action Plan builds on the work delivered under the 2016-19 Action Plan, with significant progress being made to prepare Australia for automated transport. This includes the 2017 completion of national guidelines to support on-road trials of automated vehicles. Progress will continue and expand under the updated 2020-23 Action Plan, including in the areas of:

1. A review of the above-referenced guidelines by the National Transport Commission, which is expected to be finalised by the end of 2020.
2. Development of an Australian Design Rule that assures the safety of road vehicles fitted with automated driving systems when they are entering the Australian market.
3. A national approach to ensure the safe operation of automated vehicles once they are on the roads.
4. Nationally-consistent arrangements for automated vehicles and motor accident injury insurance, expected to be in place by mid-2021.
5. Ongoing work in relation to government use of data generated by connected and automated vehicles, with the next step looking at data used for a range of secondary purposes, including optimising road network efficiency, guiding infrastructure investment and improving road safety.

Recommendation 5

The Committee recommends that the Australian Government facilitate the introduction and uptake of electric vehicles (both BEV and FCEV), especially mass transit vehicles, including through coordination and planning of the development of infrastructure to meet demand; ensuring that refuelling and recharging technology follows defined standards for compatibility and interoperability; and by promoting greater coordination between the transport and energy sectors.

The Australian Government **supports** this recommendation.

The Australian Government is planning for the increased uptake of electric vehicles, along with other new technologies, through the development of a strategy to enable consumer choice across all types of future fuels. Matters being explored as part of the development of the strategy include public and private charging and refuelling infrastructure, the integration of electric vehicle charging with the electricity system, and other industry opportunities.

The Government has also announced a \$74.5 million Future Fuels Package, including a new Future Fuels Fund. The Fund will help businesses and regional communities take advantage of opportunities offered by hydrogen, electric, and bio-fuelled vehicles.

The Strategy will also build on the Australian Government's existing support for electric vehicles which includes:

1. \$21 million of funding for charging infrastructure from the Australian Renewable Energy Agency (ARENA) to roll out ultra-fast charging sites through two networks along Australia's national highways;
2. up to \$1.1 billion in finance available from the Clean Energy Finance Corporation to assist uptake of low and zero emissions vehicles; and
3. \$25 million for the Future Battery Industries Cooperative Research Centre.

The Strategy will complement the current work by Australian infrastructure and transport ministers to progress a national work program to address the barriers and challenges impeding the uptake of electric vehicles. The work program will focus on areas of government leadership, infrastructure availability, upfront purchase costs and model availability, and access to public information.

Australian energy ministers have also agreed to a National Hydrogen Strategy to build a clean, innovative and competitive hydrogen industry, including in relation to transport. The National Hydrogen Strategy includes actions to develop a domestic market for hydrogen, including for use in transport, as outlined in the response to [Recommendation 6](#).

Recommendation 6

The Committee recommends that the Australian Government, in conjunction with State and Territory governments, develops a national hydrogen strategy that provides for the manufacture and transport of hydrogen in a safe, cost-effective and energy-efficient way; targets zero-emission production and distribution; provides for the energy needs of Australia's vehicle fleet; and, while providing for export opportunities, is focussed first and foremost on Australia's energy security.

The Australian Government **notes** this recommendation.

Commonwealth, state and territory energy and resources Ministers support a vision for a thriving hydrogen export industry, and for domestic use of hydrogen to provide greater consumer choice in energy and fuel sources.

In November 2019, Australian energy ministers agreed a National Hydrogen Strategy to support the development of a clean, innovative and competitive hydrogen industry and position Australia's hydrogen industry as a major global player by 2030.

The Strategy includes assessment of the potential of hydrogen for heavy vehicles, and road and rail fleets. Heavy vehicles in particular have been identified as an early at-scale application for hydrogen, particularly for long distance trucks.

The Strategy sets out a series of joint actions between governments, industry and the community to support hydrogen in the transport sector. The Australian Government will develop a National Hydrogen Infrastructure Assessment to consider road, rail, port and utilities infrastructure required to support hydrogen, including for transport applications. The Government will also work with state and territory governments, industry and the community to progress further research and trials of the potential for hydrogen in Australia.

The Australian Government notes the potential for hydrogen to contribute to Australia's future energy security.

Recommendation 7

The Committee recommends that the Australian Government maintain a close watch on the development of Hyperloop technology with a view to its development as a transport solution in Australia.

The Australian Government **supports** this recommendation.

The Government monitors the development of new technologies and their potential to improve the safety, productivity and accessibility of transport systems. The Government notes that Hyperloop and similar technologies are still at an early stage of development.

Recommendation 8

The Committee recommends that the Australian Government undertake a study to establish the national implications of Infrastructure Victoria's work on automated and zero emissions vehicles infrastructure, and the requirements its findings have for infrastructure policy and investment.

The Australian Government **supports in principle** this recommendation.

The Australian Government recognises the significance of Infrastructure Victoria's *Advice on Automated and Zero Emission Vehicles Infrastructure*. The report covers a number of related policy areas, and it will be taken into account by multiple progressing streams of work.

The implementation of a number of the [National Land Transport Technology Action Plan 2020-23](#) priorities will involve consideration of Infrastructure Victoria's work. These include action items to develop a program of work considering the uptake of low and zero emission vehicles and developing guidance on how infrastructure can be future ready for connected and automated vehicle technology within an integrated transport and land use planning framework.

The Government is developing a strategy to plan and manage the transition to future fuel technologies and related infrastructure. In developing the Strategy, the Government is considering the implications of Infrastructure Victoria's work.

Recommendation 9

The Committee recommends that the Australian Government articulate a clear vision for cities and regions and the connectivity within and between them, including:

- A vision for and planning of the urban and regional environment incorporating automated mass transit and new energy sources
- A clear articulation of the optimum design of the urban environment, including mass transit and active transport
- A vision for shared mobility incorporating Mobility as a Service (MaaS)
- The goal of fuel security.

The Australian Government **supports in principle** this recommendation.

The Government is committed to ensuring our cities and regions remain great places to live and work. To support this vision, the Government is taking action through our record investment in transport and infrastructure, including:

1. The 'Planning for Australia's Future Population' strategy which includes a commitment to put in place a Faster Rail Plan to deliver faster and more reliable journey times along strategic corridors connecting major regional centres with capital cities.
2. Establishment of the National Faster Rail Agency on 1 July 2019, which is working in close partnership with state and territory governments, and the private sector to deliver the Faster Rail Plan.

3. Investing, through ARENA, a total of \$21 million to support an industry-led rollout of at least 63 ultra-fast charging sites in two networks along Australia's highways, powered by renewable energy. This investment will support connectivity between Australia's cities and regions and remove barriers to consumer access to electric vehicles.
4. Using City Deals to bring together the three levels of government to align planning and investment in our cities, with eight City Deals having been signed to date. Negotiations on a South East Queensland City Deal have been extended into 2021. The integration of transport infrastructure provision with broader regional planning is a key element of several Deals. For example, as noted in [Recommendation 2](#), the Western Sydney City Deal included a commitment from the Australian Government and NSW Government to deliver the first stage of the Sydney Metro Greater West.

The Government is also aware of the opportunities provided by Mobility as a Service (MaaS) to improve accessibility and efficiency of transport. The Government is engaged in national forums involving industry and academia which are exploring the role of MaaS and the potential enabling role of governments.

In relation to fuel security, the Government has made announcements to enhance long-term fuel security with the goal of increasing our domestic storage and to hold a sovereign refining capability that meets our needs during an emergency, as well as into the future. This includes through a \$200 million diesel storage program, creating a minimum stockholding obligation to safeguard key transport fuels, and backing Australia's refineries through a production payment.

The Government will also consider the potential of alternative transport energy sources to reduce demand on imported oil, and implications on fuel security.

Recommendation 10

The Committee recommends that the Australian Government pursue an effective standards based approach to the development of transport automation and electrification, including effective use of international standards and engagement with international standards bodies, and the development of an integrated standards development roadmap to identify gaps in standards and evolving standards requirements.

The Australian Government **supports in principle** this recommendation.

The Government appreciates the importance of appropriate standards and international alignment regarding vehicle automation and electrification, including building on international learnings and ensuring interoperability between global regions. Australia's record of successful participation in relevant standards setting forums – including in relation to those activities noted below and underpinned by expertise within government – means that a formal roadmap is not a current priority for the Australian Government.

Activities underway which are consistent with a standards-based approach to the development of transport automation and electrification include:

1. Vehicle safety at first supply – determining National Standards that road vehicles must comply with before being imported or provided in Australia for the first time;
2. Suitability of road infrastructure – Austroads’ work, on behalf of Australasian governments, to standardise signage and pavement markings relating to electric vehicles, and develop guidance on data sharing and exchange standards for electric vehicle charging and energy data; and
3. Robust cyber security and technology safety regulations – working through relevant standards fora, including the United Nations World Forum for Harmonization of Vehicle Regulations, to consider the adoption of standards in relation to electric, hydrogen fuel cell and advanced driver assist systems in vehicles.

Recommendation 11

The Committee recommends that the Australian Government undertake research to estimate the national requirement for electricity generation under an electric and automated transport future, with a view to ensuring that electricity generation will meet anticipated demand while adhering to national greenhouse gas abatement targets.

The Australian Government **supports in principle** this recommendation.

The Australian Government is developing a strategy for future fuels, including electric vehicles, as part of the Government’s commitment to enable choice for consumers across all types of fuel technologies.

Matters being explored as part of the development of the strategy include public and private charging and refuelling infrastructure, the integration of electric vehicle charging with the electricity system, and other industry opportunities. It will also investigate the opportunity for electric vehicles to offer network services through the aggregation of managed charging or vehicle-to-grid technology, with projects already being funded by the Australian Government through ARENA.

Recommendation 12

The Committee recommends that the Department of Infrastructure, Regional Development and Cities conduct an audit of Australia’s existing transport communications infrastructure and requirements for automation at various stages, with a view to developing a national strategy for transport communications infrastructure for full automation of land transport; this audit and strategy to be development in conjunction with the transport and infrastructure industries; and cover:

- ICT infrastructure requirements
- Data management and sharing
- Privacy
- Cybersecurity.

The Australian Government **notes** this recommendation, but given the breadth of activities underway, does not consider that any audit or strategy is required.

[The National Land Transport Technology Policy Framework](#) and associated [Action Plan 2020-23](#) has already identified the significance of issues relating to:

1. safety, security and privacy;
2. digital and physical infrastructure; and
3. data.

The Government is undertaking work related to priorities identified by the Plan including:

1. conducting research on and piloting systems for managing cyber security in connected and automated vehicles and connected infrastructure;
2. identifying digital and physical infrastructure requirements; and
3. exploring using data to improve network efficiency and investment.

Cellular and road communications infrastructure will be key enablers of transport automation. The Government is already investing in work to improve digital infrastructure which will enhance transport technology capabilities, noting that most communications infrastructure will not be used solely for transport related purposes.

1. In January 2018, the Australian Communications and Media Authority issued the *Radiocommunications (Intelligent Transport Systems) Class Licence 2017*. The licence allows the 5.9 GHz spectrum band to be used for communications between vehicles and connected roadside infrastructure. The licence is broadly aligned to international developments and was developed in consultation with peak Australian automotive bodies.
2. The Government has provided \$224.9 million towards developing enhanced satellite positioning capability which will be an important enabler for current and future technology across all transport modes. This new capability is expected to be accurate to within 10 centimetres across Australia.

The Government notes that the *Privacy Act 1988* (Privacy Act) currently applies to privately owned and managed mass transport communications infrastructure where the private sector organisation has an annual turnover of more than \$3 million. The Privacy Act also applies to mass transport communications utilised by Australian government agencies.

The Government is committed to ensuring the Privacy Act is adaptive to new technologies and appropriately protects the personal information of individuals. In December 2019, as part of the Government's response to the Australian Competition and Consumer Commission's *Digital Platforms Inquiry*, the Government committed to undertake a review of the Privacy Act to ensure it empowers consumers, protects their data and best serves the Australian economy in the digital age, noting the rapid technological change society is experiencing. The Review is underway and due to be completed in 2021.

[Australia's Cyber Security Strategy 2020](#), released on 6 August 2020, covers cyber security of the entire economy, which will have benefits for the transport sector.

Recommendation 13

The Committee recommends that the Australian Government consider facilitating the transition to automated and electric vehicles by giving consideration to options such as:

- Subsidising zero-emission vehicles
- Promoting zero-emission vehicles through vehicle emission standards
- Implementing low- or zero-emission zones
- Providing public charging infrastructure
- Strengthening renewable energy targets
- Phasing out petrol and diesel vehicles over the long term.

The Australian Government **notes** this recommendation.

The Australian Government is developing a strategy that will enable consumer choice when it comes to future fuel and vehicle technologies, including electric vehicles, hybrids and hydrogen fuel cell vehicles. This strategy will complement the National Hydrogen Strategy and the Technology Investment Roadmap.

The strategies complement the current work of Australian infrastructure and transport ministers, which includes progressing a national work program to address the barriers and challenges impeding the uptake of low and zero emissions vehicles.

The Australian Government is committed to reducing the environmental and health impacts of road vehicle emissions, while ensuring that the vehicles that Australians value remain in the market.

The Government has no plans to phase out or ban the sale of vehicles with internal combustion engines. Australians are heavy users of cars and transport compared to many other countries with 776 vehicles per thousand people. We rank sixth in the world for private car ownership per capita and the number of kilometres driven per adult ranks us above major economies such as France and the United Kingdom. The rate of technology improvement is uncertain and a move to ban vehicles with internal combustion engines could impose significant costs on industry and consumers while also limiting choice.

Recommendation 14

The Committee recommends that the Australian Government assist in managing change in the transition to automation by making workforce training and development a condition of Commonwealth funding for relevant transport projects.

The Australian Government **notes** this recommendation.

The Australian Government would support workforce training and development being incorporated into the delivery of Australian Government funded transport projects. Some Australian Government funded infrastructure projects already contain commitments that seek to enhance education, skills and training.

For example, the Western Sydney City Deal includes employment and procurement targets to enhance skills training and employment to encourage greater Indigenous and local employment, as well as to enhance greater female and youth employment. These targets are to be implemented by the Western Sydney Airport Company, a Commonwealth GBE, and Commonwealth and State construction projects. The Western Sydney City Deal will also include the development of a skills exchange programme to promote local training for construction work on the airport and other projects.

On 1 July 2019 the Australian Government, and the state and territory governments signed a new five-year National Partnership Agreement On Land Transport Infrastructure Projects (2019-24). Under this Agreement, all transport investment projects co-funded by the Australian Government will aim to support Indigenous employment opportunities by providing improved access to jobs and training through the Australian Government's Infrastructure Investment Program.

[The National Land Transport Technology Action Plan 2020-23](#) identifies workforce and skills as a key area of future focus for Government to monitor developments and consider creating items for future Action Plans.

Recommendation 15

The Committee recommends that the Australian Government give early consideration to road pricing models, recognising the inevitable decline of fuel excise revenue due to the increase in alternative energy vehicles.

The Australian Government **supports in principle** this recommendation.

Broader consideration of a better system for paying for roads is underway as part of Australian infrastructure and transport ministers' heavy vehicle road reform program. Work is underway on proposed improvements to the way existing heavy vehicle road user charges are set and invested. Additionally, the National Heavy Vehicle Charging Pilot – an innovative industry partnership testing potential direct user charging options for heavy vehicles – is delivering a series of on-road trials between 2019 and 2021 to help inform policy considerations.

In November 2019, Australian infrastructure and transport ministers committed to consider the revenue implications of electric vehicles, such as how they will affect the sustainability and fairness of road funding arrangements.

Recommendation 16

The Committee recommends that the Australian Government establish the statutory Office of a National Chief Engineer, to provide independent expert advice on the planning and development of Australia's infrastructure.

The Australian Government **does not support** this recommendation.

Transport infrastructure investment decisions must be based on long-term planning and informed by expert advice to achieve the best outcomes for the national economy and regional and urban communities.

The Government notes that it may be preferable for those functions to be delivered by existing or specialist office holders or bodies rather than by creating a new statutory office. For example, Infrastructure Australia is an existing independent statutory body that is a key source of independent research and advice for governments, industry and the community on nationally significant infrastructure needs.

Recommendation 17

The Committee recommends that the Office of Future Transport Technology within the Department of Infrastructure, Regional Development and Cities be expanded to cover alternative energy sources such as battery electric power and hydrogen fuel cell power.

The Australian Government **supports** this recommendation.

The Government recognises that development of alternative energy sources will require further investigation to understand their benefits and deployment requirements. There is ongoing work across government to consider these issues more broadly, and in their potential application to transport.

The Office of Future Transport Technology closely cooperates with ongoing Government work regarding alternative energy sources under its current remit.