

Australian Greens Aviation Green Paper Submission

Prepared by:
Elizabeth Watson-Brown MP
Greens spokesperson for Transport, Infrastructure and Sustainable Cities

Introduction & Summary

The fundamental problem with this green paper is that it relies on projections for a massive increase in flight movements by 2050, and the continued private ownership of every aspect of the aviation industry. This is completely unsustainable for a number of reasons, covered in more detail below. The paper does not engage fully with these issues, nor proposes slowing the increase in flights, nor promotes public ownership in the sector.

The modelling from LEK Consulting which formed the basis for these projections, 'Scenario Analysis of the Future of Australian Aviation', lays out several scenarios for future numbers of flight movements.

We note that LEK consulting are also consultants to the aviation industry, a perceived conflict of interest when their research is also potentially informing government policy.

The neutral 'Steady State' and accelerated growth 'Destination Australia' models are both particularly concerning. They predict, approximately, a doubling to tripling of domestic passengers, and a 5 to 6-fold of international passengers, by 2050.¹

This is unsustainable for three primary reasons:

1. Contributions to dangerous levels of global warming, including emissions from sources other than CO2.
2. Unsustainable Aircraft Noise
3. Poor regulation and privatisation

Where it does address these issues, the paper mainly focuses on certain surface-level methods of mitigating the emissions and managing community expectations regarding the noise created by a presumed increase in flights. It does not substantially address alternatives to flying to arrest the increase in the number of flights, mentioning high speed rail only once and dismissing its potential as a lower emission, less noisy, and publicly owned & operated alternative to domestic flights.

Contribution to Global Warming

On page 76 the paper lists a number of ways emissions from aviation could be reduced over the long term.

Only two of these options are explored in detail: Sustainable Aviation Fuel (SAF) and electric or hydrogen-powered flights. The report notes a large number of practical problems with SAF, and that electric or hydrogen-powered flights are not likely until the 2040s.

Despite these serious problems, SAF, hydrogen flights and carbon offsets are still presented as the solution to aviation emissions by the green paper. Revealingly, nowhere in the paper is

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<https://www.infrastructure.gov.au/sites/default/files/documents/aviation-white-paper-scenario-analysis-september-2023.pdf>

it stated exactly what extent of emissions reduction is possible, nor does it chart a realistic path for the aviation sector to achieve net zero by 2050.

SAF

Instead of providing an honest overview of the advantages and disadvantages of SAF, this chapter reads more like a marketing pitch to the government to invest more public money in the technology.

The chapter argues for SAF's potential as the most effective option for carbon emissions reduction within the aviation sector. Yet, it obscures the critical consideration that a substantial decrease in overall aviation activity is imperative for achieving meaningful carbon emission reduction in this sector.² The chapter heavily relies on speculation and forecasting of the future availability of SAF production, while acknowledging the considerably higher costs and limited supply of SAF compared to conventional fuel. The proposed solution to these challenges involve directing public funds towards future research and development opportunities, inclusive of localised refineries and local feedstock production. Yet, if public resources are allocated for the advancement of emerging technologies in aviation, there should be equal investment in opportunities that are not contingent on the expansion of the aviation industry.

The chapter highlights the necessity for domestic feedstock production and local refineries for SAF to make it economically viable, yet downplays the associated land use changes required for biofuel production. Most notably, the chapter outlines Neste's ambition to become the leading SAF producer by the end of 2023 and emphasises the industry's growth in the Asia-Pacific region. However, there is a notable absence of information regarding the sourcing of feedstocks or the repatriation of land required for their cultivation.

The chapter briefly mentions on page 83 that "crop-based feedstocks may also compete with food production, potentially increasing the cost of essential grains and cooking oils. Robust certification arrangements, which provide assurance of SAF environmental credentials will be required to support SAF integrity". Bio feedstocks such as sugarcane and palm oil have a significant impact on the environment already.³ A recent study on the impacts of biofuel crops on biodiversity found that first generation feedstock crops cause significant damage to the environment, through biodiversity loss and land clearing.⁴

It's crucial to note that many of the forecasts presented are founded on a limited number of pilot projects. There is insufficient evidence regarding the successful demonstration of SAF production at a scale commensurate with the magnitude required for the decarbonisation of the aviation industry.⁵ These predictions overlook the broader context that SAF usage extends beyond the aviation sector as a hard-to-abate industry, encompassing the global energy and transport systems. Not only will SAF be required for other hard-to-abate sectors

² <https://www.seattletimes.com/opinion/sustainable-aviation-fuels-arent-the-answer-flying-less-is/>

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<https://www.worldwildlife.org/magazine/issues/summer-2015/articles/sugarcane-farming-s-toll-on-the-environment#:~:text=Sugarcane%20covers%2065%20million%20acres,its%20toll%20on%20the%20environment.>

⁴ <https://link.springer.com/article/10.1007/s10531-021-02232-5#Sec1>

⁵ <https://www.sciencedirect.com/science/article/pii/S0048969723025044>

such as shipping, a recent report by the Royal Society argues that it will not be feasible to produce enough fuel to meet the growth in the aviation industry.⁶

The chapter acknowledges the potential utilisation of nascent technologies like hydrogen for generating synthetic SAF. However, this proposition hinges on untested predictions and remains notably vague regarding the actual emissions reduction capacity of these technologies. If the sector was serious about reducing emissions it would properly address these uncertainties and provide a more comprehensive understanding of the efficacy of emerging technologies.

This chapter also glosses over one critical aspect of SAFs - not all are created equally. Using municipal waste and landfill to produce SAF could create emissions that are not only detrimental to the environment but are detrimental to people's health.⁷ Likewise, the chapter does not adequately consider the lifecycle emissions from SAFs, a recent report from the EU found that land-use change emissions from first generation biofuels were potentially higher than that of fossil fuels.⁸ This would require significant offsets to make SAF actually somewhat sustainable in the long term and it is unclear from the paper how much offsetting has been factored into the aviation sector planning.

Despite these problematic issues, the paper still terms SAF 'the most advanced' method of emissions reduction.

Electric and Hydrogen-powered flights

The Green paper relies heavily on speculative forecasting on the role of electric and hydrogen-powered flights. While electric flights are championed as a solution for short-haul flights by the mid 2030s, even embattled industry heavyweights like former Qantas CEO Alan Joyce have conceded that it is not currently feasible in the short term.⁹

Presently, battery technology does not meet the requirements for long-distance aviation. The paper acknowledges the ongoing research and development in this domain but qualifies that battery operated aviation will be limited to regional flights only. Existing batteries face significant limitations and the paper again relies on future predictions in battery technology upgrades, nothing that has been tested at scale.

Neither electric nor hydrogen powered aviation are considered viable for long-haul flights this side of 2050. The paper asserts that "hydrogen eliminates CO2 emissions in flight

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<https://royalsociety.org/-/media/policy/projects/net-zero-aviation/net-zero-aviation-fuels-policy-briefing.pdf>

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https://www.theguardian.com/environment/2023/feb/23/climate-friendly-us-program-plastics-fuel-cancer?CMP=share_btn_link

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<https://www.transportenvironment.org/discover/biodiesels-impact-emissions-extra-12m-cars-our-roads-latest-figures-show/>

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<https://www.theguardian.com/environment/2023/jan/09/electric-planes-sound-like-a-fantasy-but-they-may-be-the-future-for-short-haul-in-australia>

completely”, yet recognises that there is a need for further research on the actual effects of non-CO2 emissions at altitude. Currently, the net warming effect is likely to be three times as high as CO2 emissions. Factoring in non-CO2 emissions, the paper estimates that hydrogen combustion could reduce the climate impact of flight by up to 75% and fuel-cell propulsion by up to 90%. However, this is immediately qualified in the paper by stating that for hydrogen to effectively support emissions reduction goals, its production must involve methods generating low or zero carbon emissions.

Currently, the implementation of large-scale green hydrogen projects is progressing slowly and hydrogen remains expensive.¹⁰ The reliance on hydrogen in aviation would likely be contingent on blue hydrogen, which is produced using fossil fuels and incorporation of Carbon Capture Storage (CCS) technologies. Currently, Australia emits more than 11 times the amount of carbon captured globally¹¹, relying on CCS to offset the emissions produced by blue hydrogen, SAFs or conventional jet fuel is naive at best and absolutely greenwashing at worst. This is not to mention that any medium-long haul hydrogen flight would mean a complete re-design of aircraft to accompany the larger tanks needed to store liquid hydrogen. Hydrogen has the potential to be more efficient at 2.5kg more energy per kilogram of liquid kerosene, yet requires four times more space to be stored.

The paper acknowledges the need for airport infrastructure upgrades, as well as the need for “substantial improvements to hydrogen production transport and capacity in Australia”. It’s clear that hydrogen is not actually a feasible pathway to emission reductions in aviation before 2050 without significant cross-sector investment and expansion.¹²

Aircraft Noise

Similarly to the problems with emissions reduction, the green paper assumes a rapid acceleration in the number of flights, and does not substantively address flight alternatives to arrest the growth in flight numbers, and therefore associated growth in aircraft noise.

Aircraft noise concerns are framed by the green paper primarily as something to be ‘managed’ via community engagement, rather than something that should be substantively addressed because it causes actual physical and mental harm to communities.¹³ The first paragraph of this chapter is defensively entitled ‘Aircraft Generate Noise’ and implies the inevitability that the number of flights will grow.

The paper admits that, “...while each generation of aircraft is quieter, aviation growth is expected to 2050, driven by passenger demand. The deployment of new technologies such

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<https://www.afr.com/companies/energy/hydrogen-still-in-slow-burn-phase-ahead-of-take-off-20230925-p5e7f2>

¹¹ <https://australiainstitute.org.au/post/the-con-of-carbon-capture-and-storage/>

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<https://medium.com/the-future-is-electric/hydrogen-will-not-be-the-aviation-fuel-of-the-future-ee8d2f6640a2>

¹³ Basner M, Griefahn B, Berg M. Aircraft noise effects on sleep: Mechanisms, mitigation and research needs. *Noise Health* 2010;12:95-109

as drones and AAM, while not as loud as larger aircraft, will also raise noise issues given the low altitudes and proximity to residential areas at which they operate.”

The paper mentions night time curfews and movement caps only to dismiss them without fully examining the effects. No citation is provided for the claim that Sydney Airport’s curfew is costing economic growth. Nor does the paper provide any comparison to the economic costs on communities of aircraft noise, for example due to disturbed sleep or disruption to schooling. Studies in other countries have concluded these disruptions cost billions of dollars in lost productivity.¹⁴

There is no mention of successful curfew and movement cap schemes overseas. For example, London Heathrow airport operates with a curfew and yearly movement cap, and other highly successful airports such as Frankfurt and Paris Charles De Gualle operate with curfews. The government must meaningfully engage with these options if the aircraft noise issue is to be substantively addressed, instead of listening only to the for-profit airports and airlines that will always be against anything that may reduce their profits.

The paper states on page 101 that “[l]and-use planning is the most effective way to manage the impacts of aircraft noise”. This is simply not correct for airports such as Brisbane where the majority of residents experiencing unacceptable levels of noise are located several kilometres, and in many cases up to 30 kilometres away from the airport. The best way to manage aircraft noise for these communities is to reduce the number of flights going over their homes, and ensure nighttime flying is restricted via curfews.

One positive in the green paper is the suggestion that the Aircraft Noise Ombudsman (ANO) be independent of Airservices Australia. This would be a positive step however, it must be well-resourced and have the power to properly investigate complaints and implement its recommendations to Airservices Australia.

Community Engagement & Consultation

Nowhere in the green paper is the disastrous process of consultation for Brisbane’s New Parallel Runway addressed, with the NPR only briefly mentioned in the context of the lengthy runway approvals and construction process.

The New Parallel Runway opened mid-pandemic in 2020. During the approval and construction phase, the community was promised that it would help *alleviate* aircraft noise due to the possibilities of SODPROPs (Simultaneous Opposite Direction Parallel Runway Operations) mode, which means all flights arriving and departing over the water.

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<https://www.brusselstimes.com/440243/no-sleep-and-bad-heart-brussels-airport-causes-e1-billion-in-health-damage-per-year>

This was extremely misleading. Not only was SODPROPS quietly dropped as the preferred operating mode in 2018, something which only now appears to be getting corrected,¹⁵ it's clear the real reason for the runway expansion was to facilitate greater numbers of flights, making aircraft noise substantially worse.

This misleading consultation has contributed to, along with the actual effects of the increased noise, Brisbane Airport being by far Australia's most complained about airport.¹⁶

As noted above, substantive steps such as a nighttime curfew and flight movement cap must be considered to substantively address these issues.

This experience must also serve as a warning for future airport expansions, which this green paper treats as inevitable. In a few short years we will see the opening of the Western Sydney Airport - which of course does not have an over-water option. The airport authority and Airservices Australia must ensure residents are properly consulted about flight paths and not misled about the aircraft noise they will experience, and the government must hold these authorities accountable if they fail to do so.

Poor Regulation and Privatisation

The green paper is notably lacking in scope when it comes to addressing the underlying causes of the problems in the sector, many of which have come to light in recent years, and which ultimately can be traced to the heavily monopolised and privatised nature of the market.

The only mention of ownership in the green paper is with regard to foreign or domestic ownership of Australian airlines, and the provisions made during the privatisation of Qantas to ensure 'the national interest' is protected by maintaining local jobs and majority domestic ownership. Meanwhile, the green paper heaps praise on the privatised and deregulated nature of the Australian aviation industry, attributing the 'success' of the industry to this, and noting that it is one of the most 'open' in the world. In doing so it fails on two accounts: firstly, it does not consider the alternative scenario of a better regulated industry, and assumes the only way to achieve the growth in opportunities for Australian travellers is through deregulation and privatisation; and secondly, it fails to consider the many negative impacts of this privatised and deregulated model.

A crucial concern regarding the privatisation and 'light touch' regulation of the industry is the existence of 'natural monopolies' in the sector.

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<https://www.couriermail.com.au/news/queensland/qld-politics/airport-noise-relief-as-more-flights-likely-to-be-directed-over-moreton-bay/news-story/cb7486a92e18cd96412e2feeba93fc17>

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<https://www.couriermail.com.au/news/queensland/qld-politics/brisbane-airport-noise-complaints-more-than-the-rest-of-the-nations-airports-combined/news-story/a881d107c601cacf2d5eddd15718d861>

As the green paper points out, the Qantas Group (including Qantas and Jetstar) control 61.7% of the domestic market. Economist John Quiggin has referred to this as “the closest thing we have to a privately owned monopoly”¹⁷; a position echoed by Professor Alan Fels, former ACCC chair, when he told the recent senate inquiry into the aviation sector, that this market share makes Qantas the ‘dominant firm’ which is very close to a monopoly and makes it likely they will set prices for the relevant industry.¹⁸ In addition, Virgin Australia controls 33.4% of the market, meaning a combined market share of 95.1% – a private duopoly. Contrast this to the estimated 65% share of the well-known, and much criticised, Coles-Woolworths supermarket duopoly.

Professor Fels also gave evidence at the recent inquiry that government policies had ensured that the market would not become too competitive and remove Qantas’ ‘dominant firm’ status.

Customers and Qantas’ own employees have been paying the price for Qantas’ ‘dominant firm’ status, through a series of outcomes Australian consumers are all too familiar with:

- Qantas sacked thousands of workers during the pandemic, despite receiving \$2.7 billion in government assistance. The High Court has found that 1,700 of those workers were illegally sacked and their jobs outsourced.
- The ACCC is taking legal action against Qantas for selling tickets on flights that had already been cancelled.
- Qantas was the ACCC’s most complained about company two years in a row.¹⁹

Despite this, Qantas posted a record \$2.4 billion profit last year, and their former CEO Alan Joyce’s final paycheque was \$21.4 million. In this period Qantas’s domestic fares increased by over 20% on pre-pandemic prices and international fares increased by over 50%.²⁰

The new CEO and continued board chair gave evidence to the inquiry that showed no indication these practices would not continue. The new CEO defended the size of the former CEO’s pay, and the board chair defended the illegal outsourcing of workers, with no indications of remorse or a desire to change the approach Qantas has taken to date.

In this context it is surprising and disappointing that the green paper fails to mention the option of greater public ownership as a solution to the problems with Qantas. Not only that, it repeatedly downplays the monopoly status of Qantas and Virgin. Discussions that focus on marginal changes to improving competition and market share fail to address the fundamental

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<https://www.theguardian.com/commentisfree/2023/sep/01/albanese-governments-close-embrace-of-qantas-may-no-longer-fly-with-the-times>

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<https://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query%3DId%3A%22committees%2Fcommunications%2F27399%2F0004%22>

¹⁹

<https://www.theguardian.com/business/2023/aug/24/qantas-annual-profit-share-price-rise-record-billions>

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<https://www.theguardian.com/commentisfree/2023/sep/07/what-will-it-take-to-get-australian-air-fares-down>

concerns about privatising an effective natural monopoly - especially in a country like Australia with so many isolated and remote communities that rely on air services as an essential service. In 2019, Professor Greg Bamber pointed to the other problem of the natural monopoly status of the aviation industry: the lack of high speed rail as an alternative to air travel²¹ (see below).

During the COVID pandemic, the Australian Government provided billions in public money to the major airlines, ensuring their survival through an unprecedented period of turmoil and disruption. Despite this there has been no clear action from the major parties to address the mistake of privatising an effective natural monopoly, and the way in which government support translated into increased corporate profits for wealthy shareholders.

The government should strongly consider taking a full or in part ownership stake in Qantas, so that the onus is on Qantas to be a model employer and promote good consumer practices. This would not just ensure better outcomes for Qantas workers and customers, but put significant pressure on other airlines to match this standard, and as such would represent the most effective means of mandating better practices in the aviation industry.

Slot Management and Airports

Professor Rod Sims, also a former ACCC chair, gave evidence to the recent inquiry about the power that Qantas, and to some extent Virgin, have over the slots system at our major airports via Airport Coordination Australia (ACA), a private company majority owned by Qantas and Virgin. This incentivises them to keep slot prices high to keep out competition from new entries to the airline market, like Rex and Bonza. The airlines are then able to cancel flights to maintain high profits, while still maintaining a dominant market position.

In August of this year, the ACCC alleged that Qantas had cancelled 15,000 flights between May and July 2022 for financial gain – close to 1 in 4 flights during this period.

Even more so than the case of Qantas, the management of the slots for major Australian airports is a natural monopoly. ‘Competition’ cannot meaningfully be introduced into its function, and private ownership will lead to worse, not better, outcomes.

At a minimum, airlines should not be permitted to hold a stake in a company that sells slots, effectively selling to themselves. Professor Sims called it “extraordinary public policy” that this was permitted.²² The government should also consider taking an ownership stake in ACA to ensure fair distribution of slots and to stamp out the possibility of anti-competitive manipulation of the slots system.

Finally, the privatisation of Australia’s airports is assumed to be an unmitigated good in the green paper. These, perhaps even more than airlines, represent true natural monopolies

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<https://research.monash.edu/en/clippings/profits-at-the-expense-of-consumers-how-australias-airport-monopo>

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<https://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;db=COMMITTEES;id=committees%2Fcommsen%2F27399%2F0006;query=Id%3A%22committees%2Fcommsen%2F27399%2F0000%22>

where no real competition can exist, due to the capital costs and regulatory requirements of building new airports. This view is backed up by the ACCC who, in their submission to the 2019 Productivity Commission Inquiry into the Economic Regulation of Airports stated that “The major airports exhibit strong natural monopoly characteristics and therefore face very little competition in the supply of aeronautical services.”²³

This natural monopoly status has led airports to regularly earn super-normal profits, i.e. well above the average return on equity.²⁴ This is money, ultimately, that could be returned to the Australian public in a variety of ways if the airports had remained in public hands, but under a privatised scheme ends in the pockets of a small number of shareholders.

Profit focused, private monopoly airports can set prices for airlines wanting to access their services, which ultimately enhances consolidation in the airline industry as only major airline players can afford the monopoly prices charged by the airlines.

Private monopoly airports are less responsive to community pressure, as they have no incentive to change their practice, since there are no competitors who could offer a better service and apply market pressure to see an improvement in airport practices. This is evident in the case of flight noise, and has been the experience of communities in Brisbane and across Australia when attempting to provide feedback.

Finally, private monopoly airports will only ever seek to increase the number of flights coming through the airport, in order to maximise profits. This directly contradicts and undermines the capacity of the government to meet our carbon reduction commitments and combat flight noise in our communities.

As such, the federal government should consider bringing airports back into full or partial public ownership as part of a process of reducing the drive to constant growth in air travel, and instead creating a long-term sustainable intercity and international travel infrastructure.

High Speed Rail

This raises the very crucial point of the alternative to air travel. The green paper only focuses on ways to mitigate the emissions and noise pollution of a presumed increase in flights. It does not substantially address alternatives to flying.

Disappointingly, the paper mentions high speed rail only once, and only to play down its ability to significantly impact the demand for air travel.

Given the problems raised above regarding SAF, the viability of meaningfully decarbonisation of air travel, as well as growing flight noise over our cities, the dismissal of

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<https://www.accc.gov.au/system/files/ACCC%20supplementary%20submission%20to%20the%20Productivity%20Commission%27s%20Inquiry%20into%20the%20Economic%20Regulation%20of%20Airports%20-%2029%20March%202019.pdf>

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<https://grattan.edu.au/wp-content/uploads/2017/12/895-Competition-in-Australia-Too-little-of-a-good-thing-.pdf>

high speed rail as a way to curtail the growth in domestic flights is perhaps the greatest flaw in the green paper.

The green paper is drafted in the context of government inaction and lack of ambition on high speed rail. The 2013 report by the government's High Speed Rail Advisory Group proposed a timeline for the completion of the full Brisbane-Sydney-Melbourne network of 2058. With a further 10 years delay, and with government ambition no higher than under the previous Labor government, it is unlikely for this east coast high speed rail network to be completed before the mid-2060s.

By contrast, a comprehensive report written by research institute Beyond Zero Emissions in 2014 demonstrates that, with Australia's workforce and existing engineering and construction activity and capacity, "a ten-year timeline [for the building of the Brisbane-Sydney-Melbourne High Speed Rail network], while ambitious, would be possible".²⁵ Beyond Zero Emissions notes international examples in Spain, Taiwan, and China that show the scope of what's possible in terms of fast and efficient delivery of high speed rail infrastructure.

This indicates that an east coast high speed rail network completion date before 2040 is entirely possible and should be the aim of the government, but this aviation green paper de facto rules it out. A fully functioning high speed rail network in the 2040s could then be accompanied by measures to restrict domestic aviation and shift the overwhelming majority of east coast intercity travel onto decarbonised speed rail. Public ownership of the entire network and service delivery could ensure affordable and efficient services that would easily compete with air travel in terms of cost, convenience, and enjoyability.

Given that the overwhelming majority of flight movements in Australia are for domestic travel, this would fundamentally change the scenarios forecast in the green paper. Interim stages of high speed rail delivery, such as the Sydney to Melbourne connection, could be completed in a shorter time frame, further decreasing the need for increased flight numbers in the domestic aviation industry.

²⁵ <https://www.bze.org.au/research/report/high-speed-rail>