

IS HIGH SPEED RAIL VIABLE IN AUSTRALIA?

29 August 2019 | Australia
Legal Briefings

Every so often (and usually just prior to an election) someone floats the idea of building high-speed rail in Australia.

Maybe it's connecting Melbourne to Brisbane, or perhaps linking major regional centres to capital cities.

The most commonly suggested route for high speed rail is between Australia's two largest cities, Sydney and Melbourne, potentially via Canberra. Melbourne to Sydney is reportedly the world's second busiest air corridor, carrying about 12,300 people every day (or more than 9 million passengers a year).

A [2013 study](#) commissioned by the Labor federal government found that a high-speed rail line between Sydney and Melbourne could be finished in just over 20 years, allowing travel between the two cities in less than three hours.

Earlier this year, the now-Opposition Leader Anthony Albanese said (while speaking on Newcastle radio) that Australia should *"bite the bullet and go for high-speed rail connection not just through to Sydney, but right through to Melbourne and then north to Brisbane"*, starting with an initial route between Melbourne and Newcastle.

And while Federal Cities and Urban Infrastructure Minister Alan Tudge agrees that Australia should one day have high-speed rail, he says it's up to State governments to first preserve and acquire land for the east corridor, which Infrastructure Australia has costed at \$2.8bn.

It's apparent that a high-speed rail line between Melbourne and Brisbane is the grand vision: however, its prohibitive cost (estimated at \$120bn in capital cost and high operating costs as well) and Australia's low population currently make such a project extremely challenging.

While high-speed rail has a way to go, medium-speed rail projects (or faster speed, as it's also called) that will connect regional centres to major cities - such as Geelong to Melbourne or Wollongong to Sydney - have a real chance of success, and will set Australia on the trajectory towards achieving the ultimate high-speed rail solution.

WHAT IS HIGH-SPEED RAIL?

High-speed rail is public transport by rail at speeds of at least 200 km/h for upgraded track, and 250 km/h or faster for new track. First built in Japan in 1964, high-speed trains now operate in 12 countries around the world.

Fast-rail, on the other hand, uses standard cars on a standard track and can run up to 160km/h on upgraded tracks. Fast-rail has been operating in Victoria since 2006 after the introduction of regional fast rail on four corridors.

Two other states -- Queensland and Western Australia -- also operate medium-speed rail, running the Electric Tilt Train service between Brisbane and Rockhampton and the Prospector train in the west.

"The majority of what we have now is standard rail, and it has speeds of about 80 to 90km/h. Often it's slower to account for stops," says Melbourne-based Partner Robert Nicholson, who's spent the last 30 years advising on a broad range of corporate and commercial transactions in the infrastructure sector.

"Then you've got fast rail, which might get you to about 160km/h. And then you've got high-speed rail - the really quick, funky rail, which can go to 300km/h. Regional Rail upgrades since the last decade have increased speeds along some of Victoria's regional rail corridors"

There are different types of technologies in use, says Nicholson.

There is the Japanese bullet train (Shinkansen) - *"very fast, but still a train with wheels"* - and then there is the train operated by maglev technology (a term derived from magnetic levitation) which uses two sets of magnets, one set to repel and push the train up off the track, then another set to move the 'floating train' ahead at great speed, taking advantage of the lack of friction.

"This is amazing," says Nicholson. *"I've only been on one of these, to Shanghai from the airport. It can do up to 400 km/h, but sitting on it you feel like you're doing maybe 20 km/h. It's just really stable."*

WHY DON'T WE HAVE FAST RAIL IN AUSTRALIA?

The first vision for high-speed rail in Australia was put forward by a former head of CSIRO, Paul Wild, during the early 1980s.

Wild was so enthralled by his experience on the Shinkansen in Japan that upon his return home he conceived the idea of a high-speed railway between Sydney, Canberra and Melbourne, dubbed the *"Very Fast Train"*.

This proposal fell over, but it marked the beginning of Australia's love affair with high-speed rail.

According to rail scholar Phillip Laird, studies into high-speed rail since 1984 have so far cost taxpayers an estimated \$125 million (in today's terms), but have produced very little actual building, and no material reservation of rail corridors.

There have been grand promises over the years -- most notably the Howard government's proposal of a Sydney to Canberra rail project that would result in a journey time of just 84 minutes at a cost of \$4.5 billion -- which was pulled in December 2000 and replaced by yet another study.

Why have these projects always floundered? There appear to be five monumental barriers: the perceived high cost, perceived lack of demand, an advanced low-budget airline market, low density population and Australia's vast geography.

Many advanced nations (mostly in neighbouring Asia) have integrated fast and high-speed rail into their everyday travel infrastructure.

China and Japan have the biggest and oldest high-speed rail systems in the world, and Europe has for decades been developing fast rail routes all over the continent.

Europe as a continent is also ideally suited to developing high-speed rail, its geography and population density making high-speed rail a highly valuable resource.

London-based Patrick Mitchell, Herbert Smith Freehills' Global Head of Infrastructure, says there is *"more political impetus to finance high-speed rail in Europe, and more environmental drivers to get people from airplanes onto trains"*.

Mitchell has overseen many rail projects over his 25 years working in the infrastructure sector, including London's High Speed 1 project (a 108km high-speed railway linking London with the Channel Tunnel, Paris, Amsterdam and Brussels), and the construction and development of the High Speed 2 project, the most significant railway project in the United Kingdom and Europe.

He says that the short distances between countries, the political desire to unify the continent and the relatively late introduction of cheap flight options have cemented high-speed rail in Europe.

"Here, high speed rail came before low cost airlines," he says. "If it had been the other way it might have happened differently, and much slower."

Mitchell believes that Australia's biggest issue is the distance.

Driving, it takes nearly nine hours to get to Sydney from Melbourne, and another 10 if continuing on to Brisbane. Compare that to the distance between most European countries, which, especially via high-speed rail, takes between three to four hours.

"Any longer than four hours and rail becomes undesirable," Mitchell says. "This is precisely why Europe is so suited to developing high-speed rail: in most cases, it takes three or four hours to get from one major city centre to another".

SO WHAT'S BEST FOR AUSTRALIA?

High-speed rail will one day be viable for Australia. But not yet. The best option is to build medium-speed rail that can later be upgraded to high-speed rail.

With [Australia's population projected to hit up to 42 million](#) by the year 2066 -- 12 million of which will be in Melbourne -- the case for high-speed rail will only strengthen.

CASE FOR FASTER RAIL

"At the moment, we're too low density," says Nicholson. "If Melbourne and Sydney were 15 million people each, the case might stack up. You've just got to get the volume. That's the good thing about a train: you can put a lot of people on there, a lot more than you could on a plane," he says.

In the meantime, experts say it is prudent to prepare. It takes time to upgrade and build new rail, and many think that starting smaller -- with medium-speed rail -- is an essential step to connecting Australia.

"Ignoring the maglev, the infrastructure needed to operate a rail with wheels is immensely expensive," says Nicholson.

"You need to have very heavy bogies, which can withstand the forces that get put on the whole system, such as the carriages and so on. You then need stronger rail and sleepers, so the rail itself needs to be made from thicker and stronger steel, and on top of that, you need full grade separation, extensive fencing and the system can't have a sharp bend on a track where trains run 160km plus."

Mitchell agrees. *"In Australia, you'd have to replace existing structures to preserve the impact of high speed rail. Because you'd be travelling at such high speeds, you'd need to leave quite a lot of space to run, which would mean rebuilding tunnels and bridges".*

However, he points out that Australia's low population can also be seen as an advantage, with long stretches of unpopulated land *"making it relatively simple to put track in as compared to higher density areas such as Europe."*

\$2bn has been committed by the Commonwealth government to a fast rail route between Melbourne and Geelong. With Geelong being Victoria's largest regional city, its proximity to Melbourne (75km), liveability and its price advantages continue to place the city in an ideal position to attract new residents and investment.

The question of who will pay for other works also remains.

“Rail infrastructure will rarely, if ever, provide for full recovery of capital cost,” says Tim Johnson, a Herbert Smith Freehills Senior Associate specialising in major infrastructure and construction projects based in Brisbane. “Even recovering operating costs can be challenging”.

“The State needs to play a role and the State will justify the expense if there are enough externalities that provide positive returns back to the taxpayer. We know that there is plenty of interest in bankable projects so establishing sufficient externalities must be the main challenge”.

Capturing or recouping the benefits that developers, airport operators and other businesses see when these projects are developed, needs to be considered and might help bridge the gap.

For Johnson, this shift towards a regional fast rail plan approach signals a more feasible solution.

“There have long been grand plans to have fast or high speed rail connecting major capital cities across the east coast,” he says, “Developing localised projects might be the best way to move towards the ambition for a significant and costly interstate network.”

The Morrison government seems to agree. It currently has three faster-rail business cases underway, having committed \$20 million to developing Sydney to Newcastle, Melbourne to Greater Shepparton and Brisbane to the regions of Moreton Bay and the Sunshine Coast as part of its 20-year plan for a Faster Rail Network.

These business cases are due to be completed before the end of 2019.

Herbert Smith Freehills partner Jim Theodore, who has worked extensively on Melbourne and regional Victorian rail projects, adds that *“another benefit of regional rail projects is that they build on recent strengthening of both regional and metropolitan rail networks”.* *It’s all very well being able to connect regional centres with metropolitan networks, but you still need to be able to get the trains into the centre of town. Victoria is trying to address that challenge ahead of further higher speed regional rail infrastructure.”*

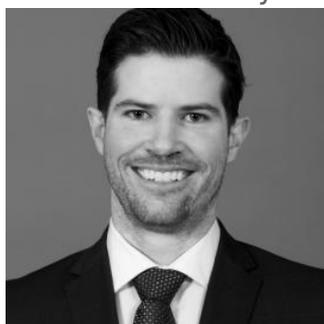
The Federal Government is also planning to invest in additional business cases for priority faster rail corridors between Sydney to Wollongong, Sydney to Parkes (via Bathurst and Orange), Melbourne to Traralgon, Melbourne to Albury-Wodonga, and Brisbane to the Gold Coast.

Whether these come to fruition will largely depend on the Government's desire to prepare Australia for a more populous future, where national and interstate travel is no longer confined to cars and airplanes, and is instead part of a robust and integrated infrastructure system which includes all modes of transport -- including high-speed rail.

For now, developing fast rail is a sensible move towards the greater ambition of a high-speed interstate network.

KEY CONTACTS

If you have any questions, or would like to know how this might affect your business, phone, or email these key contacts.



TIM JOHNSON
SENIOR ASSOCIATE,
BRISBANE
+61 7 3258 6465
Tim.Johnson@hsf.com



JIM THEODORE
PARTNER,
MELBOURNE
+61 3 9288 1420
Jim.Theodore@hsf.com



ROBERT NICHOLSON
SENIOR ADVISER,
MELBOURNE
+61 3 9288 1749
robert.nicholson@hsf.com

LEGAL NOTICE

The contents of this publication are for reference purposes only and may not be current as at the date of accessing this publication. They do not constitute legal advice and should not be relied upon as such. Specific legal advice about your specific circumstances should always be sought separately before taking any action based on this publication.

© Herbert Smith Freehills 2021

SUBSCRIBE TO STAY UP-TO-DATE WITH INSIGHTS, LEGAL UPDATES, EVENTS, AND MORE

Close

© HERBERT SMITH FREEHILLS LLP 2021